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Business model digitalization with the case study of "Vlastuin"



Master Thesis

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International Technology Management

Aalborg University, 2012

Business model digitalization with the case study of *"Vlastuin"*

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Number of Pages: 62

Completed: June 1st 2012

Preface

The question "What business model exactly is and how can it be used?" is not as easy to answer as it might seem from the first glance. This paper took this challenge and evaluated scientific literature and though use of the business case tried to address the "fuzzy" nature of business model concept.

Each of the paper chapters will try to address specific problematic areas of the business model concept which can be found whenever trying to gain only very basic knowledge, or trying to lay down the base for deeper understanding.

First chapter will introduce to business model concept and the confusion in the scientific world towards the business models. This will provide not only overview on the variety of business model definition but also clarify and pinpoint one specific business model interpretation with minor adjustments. It will be followed by introduction of the business model frameworks and selection of few with intention to illustrate the diversity of the literature on business models.

Problem formulation chapter as the name implies will introduce with the paper focal points and will initiate research questions in order to address them.

Lastly analysis will not only evaluate and select one of the business model frameworks, but also shortly introduce case company and two business cases. This will allow taking more hands on approach to the business model concept and seeing it in action through real world example. Lastly design and digitalization of the business model using Adobe Photoshop and 3Ds Max software will be presented which will be demonstrated trough video file which can be found in the attached Compact Disc drive.

After reading this paper one should have good understanding of business model literature diversification followed by the relative clarification of the concept. Business case should provide a good "real life" example and take the understanding of the business model even further. Lastly the graphical representation of the business model should provide one with experience of business model in a more natural and realistic three dimensional environment.

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Introduction

This chapter will introduce business models (BM). First short introduction will be presented of different business model areas followed by business model viewpoints. Next, discussion on the business model meaning will be followed through, where brief look on variety of opinions and considerations towards business model concept will be presented followed by representation of selected definitions from research in BM field. Furthermore working definition of the business model will be presented, followed by verification of existing value to business from business model. Lastly, introduction to selected frameworks trying to operationalize business model concept will be carried out followed by comparison of the different frameworks.

Business Model research areas

(Fielt, 2011) argues that there are three relevant areas for the business model conceptualization. **Business model definitions** which

"...lays the foundation for the business model research" (Osterwalder, et al., 2005)

Due to its importance, business model literature overview will be presented first with the intent to create clear understanding about different directions in the literature and uncover the diverse nature of the business model concept.

Business model frameworks which

"...discuss the compositional elements (also referred to as components, functions, key questions) of the business model" (Fielt, 2011)

Selection of the business model frameworks will be introduced in the later sections of this chapter.

Finally, business model archetypes and classification is concerned with

"...identification and ordering of existing types of business models and invention of new types of business models" (Fielt, 2011).

Archetypes can be either full business model usually based on specific company or more simplified elementary business model, it also can be only a specific aspect of a business model (e.g. the "free" business model pattern) (Fielt, 2011). Due to the nature of this project business model archetypes will not be further elaborated, nevertheless it is important to note, that there is a clear difference between business model frameworks and archetypes.

Business Model viewpoints

Before going into the Business model definition it is important to note that there are different viewpoints on BM: essentialist, functionalist and pragmatic (Fielt, 2011). In **essentialist** viewpoint business model provides accurate description or <u>representation of the firm</u>. The **functionalist** viewpoint sees business model as the <u>tool for envisioning the future</u> ventures and potential value creation logic it will involve. Lastly, **pragmatic** viewpoint sees business models as "the <u>market devices</u>, enhancing

socially-situated practices of calculation and decision making". Additionally the **design perspective** sees business models as a <u>tool for creating conceptual models</u> in order to design, innovate and manage business at hand. (Fielt, 2011)

Business model also can be defined at the different levels of the business. It can be seen as representation of the business as overall system, business portfolio, specific business model, even business model building blocks and components splitting into smaller pieces (Lindgren, et al., 2011)Therefore it is important to understand which level of the business is defined by the business model at hand.

Business Model

So what exactly is Business Model (BM)? Answer to this question can be more difficult to find then it would seem from the first glance. (Lindgren, 2011) argues that most business leaders would not have a ready answer to give if asked about their organization business model, and if they do, usually they present organizational structure. But is the business model limited to organizational structure? According to Linder and Cantrell (2000) even though executives know what business they are in and many talk about their business models 99 percent have no clear framework for describing their own model, and therefore cannot describe their BM clearly. This according to (Magretta, 2002) is due to the term of business model in business to be one of the vaguely used terms where they are "stretched to mean everything and end up meaning nothing" (Magretta, 2002). This gives the point of the importance to have clear definition of the Business Model not only to understand business organization is operating in but also to communicate it more efficiently to others let alone innovate on it.

The confusion in business field could be tracked down to the scientific literature still having guite various opinions what BM exactly is (Zott, et al., 2011) and what importance it is for the today's organizations. There are a lot of articles discussing BM in various domains such as information systems, strategy, management and others, yet it is poorly understood (Osterwalder, et al., 2005). The "fuzziness" or poor understanding what BM actually means could be related to fairly recent attention to the field. (Osterwalder, et al., 2005) in research of BM literature showed that even though the BM was first mentioned in academic article tile and abstract in 1960 (Jones 1960) it did not get much attention until the late 1990's. This overlaps with arrival of personal computers (Magretta, 2002)and increasing popularity of internet. Having in mind that the business model literature is fairly young it is not surprising that there are still quite a few opinions on what business model actually is and how it should be described let alone what components should be represented in BM (Lindgren, et al., 2011). One of the most discussed components in BM probably could be pointed out as being strategy. Is the strategy part of the BM? Or is it other way around and the BM is part of the strategy? These difference in opinions what is the relationship between strategy and BM in the scientific literature well reflected in the (Lindgren, et al., 2011), where comparison of different author opinions on relations of strategy and BM. It is adopted from the research that the BM has some parts of the strategy components, but does not consider strategy as overall. Adopting (Magretta, 2002) line of thinking business model describes how the business pieces fit together but it does not look at one critical factor of performance – competitive positioning of the firm. This is where strategy comes in to picture, explaining how business can do better than its rivals. Magretta in her discussion points out that some very successful businesses

today did not necessarily reinvented their BM but due to their strategy gained competitive advantage and outperformed other businesses working with the same BM's. Another point which could be drawn from Magretta discussion is that sometimes BM can perform as strategy if it changes the economics of the industry and is hard to replicate. In other words if BM has big impact on e.g. cost reduction while still not being easy to replicate it can act as the organizational strategy itself. Some of the examples could be Linux, where the no cost operating system business model is also acting as a strategy. Another example could be the Ryanair, where the introduction of the fast and inexpensive transportation became a market changer. Zara Inditex changed the market by drastically reducing the lead times of product innovation and decreasing the response time to the market demands. Apple create a Business Model Eco system (Lindgren 2012) via the iTunes and App's and Facebook created the fired biggest in history stock offering on behalf of a free social media business invention established within eight years.

Comparison of the different BM definitions

Having in mind there are quite a few BM definitions next step is to look what research has been done in regards with comparison and maybe consolidation of the different definitions. As it has been mentioned previously there is a variety of opinions on business models and usually it is reflected on what components BM consists off. There has been done research trying to identify differences and similarities of the various BM definitions in the existing literature (Osterwalder, et al., 2005), (Shafer, et al., 2005), (Morris, et al., 2005)to name a few. Based on (Taran, 2010) research table of business model definitions have been generated and expanded adding additional findings in Table 1.

Author's	Business model definition
Timmers (1998)	"Business Model stands for the architecture for the product, service and information flows, including a description of the various business actors and their roles, the potential benefits for these actors and sources of revenues the business model included competition and stakeholders"
Venkatraman and Henderson (1998)	"An architecture along three dimensions: customer interaction, asset configuration and knowledge leverage"
Selz (1999)	"A business model is architecture for the firm's product, service and information flows. This includes a description of the various economic agents and their roles. A business model also describes the potential benefits for the various agents and provides a description of the potential revenue flows."
Stewart and Zhao, 2000	"Business model is a statement of how a firm will make money and sustain its profit stream over time".
Linder and Centrell (2000)	"The business model is the organization's core logic for creating value"
Hammel (2000)	"A business model is simply a business concept that has been put into practice. A business concept has four major components: Core Strategy, Strategic Resources, Customer Interface and Value Network."
Petrovic et al. (2001)	"Business model describes the logic of a business system for creating value that lies behind the actual processes"
Weill and Vitale	"A description of the roles and relationships among a firm's consumers, customers,

Table 1 Business Model Definitions

(2001)	allies and suppliers that identifies major flows of product, information and money
	and the major benefits to participants."
Magretta (2002)	"Business models are stories that explain how the enterprises work Business
	models describe, as a system, how the pieces of a business fit together, but they
	don't factor in one critical dimension of performance: competition" "a good
	business model has to satisfy two conditions. It must have a good logic – who the
	customers are, what they value, and how the company can make money by
	providing them that value. Second, the business model must generate profits."
Amit and	"A business model is the architectural configuration of the components of
Zott(2002)	transactions designed to exploit business opportunities. The transaction component
	refers to the specific information, service, or product that is exchanged and/or the
	parties that engage in the exchange. The architectural configuration explains the
	linkages among the components of transactions and describes their sequencing."
Lai, Weill and	"business model may be defined as how businesses appropriate the maximum
Malone (2006)	value of the products or services they have created Business model is based on
	two dimensions. One dimension is the type of the assets physical, financial,
	Intangible, and human. The second dimension is type of rights being sold Creator,
	Distributor, Landlord, and Broker."
Chesbrough	"The business model is a useful framework to link ideas and technologies to
(2007)	economic outcomes It also has value in understanding now companies of all sizes can convert technological netential (e.g. products, feasibility, and
	sizes call convert technological potential (e.g. products, leasibility, and
	business model, whether that model is articulated or not "
Skarzynski and	"The husiness model is a concentual framework for identifying how a company
Gibson (2008)	creates delivers and extracts value. It typically includes a whole set of integrated
0103011 (2000)	components all of which can be looked on as opportunities for innovation and
	competitive advantage."
Johnson,	Business models "consist of four interlocking elements, which, taken together, create
Hagemann and	and deliver value". These are: customer value proposition, profit formula, key
Christensen	resources, and key processes.
2008	(Dursing an Mandal as fauge to the largin of the firms, the superior it are proved a surd how it
Casadesus-	"Business Model refers to the logic of the firm, the way it operates and how it
Ricoret (2010)	creates value for its stakeholders.
Alcance (2010)	"Business model in essence, is representation of how a business creates and
Johnson (2010)	delivers value, both for the customer and the company "
Osterwalder	"A business model is a conceptual tool that contains a set of elements and their
(2004)	description of the value a company offers to one or several segments of sustamore
	and the architecture of the firm and its network of partners for creating marketing
	and the architecture of the firm and its network of partners for creating, marketing
	and custainable revenue streams "
	מות ששנמוומטוב ובעכוותב שנוכמוווש.
Osterwalder and	"A business model describes the rationale of how an organization crates
Pigneour (2010)	delivers, and captures value."*
Teece (2010)	"A business model articulates the logic, the data and other evidence that support a
、 ,	value proposition for the customer and a viable structure of revenues and costs for
	the enterprise delivering that value".

Fielt (2011)"A business model describes the value logic of an organization in terms of how it
creates and captures customer value."

*There can be noted differences between earlier (Osterwalder, 2004) definition of business model and later work (Osterwalder, et al., 2010) where Osterwalder

collaborated with Pigneour. In order to demonstrate the adjustments both definitions have been presented.

Table 2 presents business model definition focal points looking what each definition of the business model is focusing on. The table is divided into three categories were each of them represents what business model is focusing on. Is it business level, were business model is considered to represent entire business, or as a framework were it looks at business model definition as pointing out selection of elements combining the business model. Last category is pointing out business model definitions which recognize that business model is lower level concept defining not business as a hole, but a part of it.

It is important to note that usually business model definitions are not pointing out the level they are addressing, which might be part of the confusion in the today's' literature where different authors up to this day do not have the common language and provides potential source of confusion (Zott, et al., 2011). It is important to note that during this evaluation of different definitions none of them seemed to refer to fraction or part of overall business, and that one organization can have more than one successfully operating business model at the same time.

Author's	BM as framework	BM at Business level	BM at Business Model level
Timmers (1998)	Х		
Venkatraman and	Х		
Henderson (1998)			
Selz (1999)		Χ?	
Stewart and Zhao, 2000		Х	
Linder and Centrell (2000)		Х	
Hammel (2000)	Х		
Petrovic et al. (2001)		Х?	
Weill and Vitale (2001)		Х	
Magretta (2002)		Х	
Amit and Zott(2002)	Х		
Lai, Weill and Malone		Х	
(2006)			
Chesbrough (2007)	Х	Х	
Skarzynski and Gibson		Х	
(2008)			
Johnson, Hagemann and Christensen 2008	Х		
Casadesus-Mansanell		Х	
and Ricarct (2010)			
Johnson (2010)		Х	

Table 2 Business Model Definition focal points

Osterwalder and Pigneour (2010)		X
Teece (2010)	Х	
Fielt (2011)		Х

Table 9 provides an idea of the different components in the definitions (Morris, et al., 2005). This provides a good idea how differ opinions in literature what BM is what it should describe and what components it consists off. Furthermore there have been different take on the BM where it was proposed classification of the different types of the business models (Richard, et al., 2006). The typology in this research is based on the asset rights and types. It is particularly exciting not only because it takes a different perspective on the business models, but also performs fairly extensive empirical study on how important and or useful business model concept is.

Table 10 the sixteen different BM types suggested in (Richard, et al., 2006) research. What makes this view so interesting is the classification of business models provided based on the property rights combined with the asset types as opposite to the components contained in the BM. This classification provides fairly robust way not only to classify the organization operating model to one of the categories, but also as shown in the research it gives opportunity for more holistic approach for model comparison.

(Osterwalder, et al., 2005) research also discuss business model evolution arguing that there are five business model evolution phases in the BM literature. Table 3 provides an overview of the evolution phases. As suggested by Osterwalder et al.(2005) the first phase is when business model research started to be more noticeable, scientific work focused defining and classifying business model concept.

Activity	Define and classify Business Models	List Business Model components	Describe Business Model components	Model Business Model components	Apply business model concept
Outcome	Definitions and taxonomies	"shopping list" of components	Components as building blocks	Reference model and ontologies	Applications and conceptual tools
Authors	Rappa (2001), Timmers (1998)	(Linder & Cantrell 2001), (Magretta, 2002) (Amit&Zott 2001)	(Afuah & Tucci 2001), (Afuah & Tucci 2003) (Hammel 2000) (Weill & Vitale 2001)	(Gordijin 2002), (Osterwalder&Pigne our 2004) (Lindgren, et al., 2011) (Johnson, 2010)	(Osterwalder, et al., 2010) (Lindgren, 2011)

Table 3 Evolution of the Business Model Concept

Second phase of the BM development, research started to focus on the components forming business model. The third phase started to describe the components of the business model, where the definitions of the different BM components became available. The fourth phase started to model the components of the BM theoretically leading to the meta-models and ontologies. Finally, the fifth sill ongoing phase

focuses on the application of the BM concept in the management and information systems. This seconds the argument of the Business Model research field being in the "infantry" stages, and still under constant development.

Do all Business Model definitions refer to value?

As it can be seen there are various opinions what business model definition should look like together with which points should be addressed while defining business models. This paragraph will try to look if there are any common focus traits in all the definitions.

According to (Fielt, 2011) it can be argued that most business model definitions in essence refer to the "value". Some authors are more explicit than others but even though the meaning is presented in different words they usually do refer to the question of "how to create value in the face of changing business". Furthermore Fielt (2011) argues that definitions which are more explicit about focus on value usually refer to creating, delivering and capturing value with the highest emphasis on value creation in today's literature (which is oppose to the earlier emphasis on the value capture). However the value capture is not ignored. Next thing Fielt (2011) notes is that most authors refer to customer value when talking about value, even though usually they are not explicit about it and that customer value can be defined in a more than one way. It can be seen as customer perceived preference of the product attributes, which help to achieve customer's goal and purpose when using the product (Woodruff 1997). Another view on the customer value is "interactive relativistic preference experience", which states that value depends not only from characteristics of the object, but also from the interaction of the subject who appreciates these characteristics (Holbrook 1999). The appreciation of the object characteristics also may vary for different individuals and can change in diverse situations. This view also notes that customer value is more in the consumption experience rather than the product purchase. Third viewpoint on the customer value is use value, which is value created during consumption process. Finally, customer value can be seen as exchange value, which is "value embedded in the product and is determined at the point of exchange" which is closely related to the monetary value or economic value (Fielt, 2011).

Working business models definition

Based on the previously mentioned research on trying to consolidate definitions as well as the discussion on the business model definition focus on value, (Osterwalder, et al., 2010) definition has been adapted for a starting point which goes as following:

"A business model describes the rationale of how an organization creates, delivers, and captures value."

This definition is based on previous research about business models from Osterwalder (Osterwalder, et al., 2005) (Osterwalder, 2004). (Osterwalder, et al., 2010). It is important to note that there were set couple measures while considering various business model definitions. One of the criteria was that it should be based on the empirical study and consolidation of variety opinions on business models while not disregarding without argumentation different viewpoints or components. Another point was that business model definition should not be limited to specific market sectors or businesses. Couple

particular papers could be mentioned as they attracted considerable amount of attention, yet have not been chosen when considering selection of the business model definitions. First, (Morris, et al., 2005) research, which tried to consolidate different business model definitions, looks more from the entrepreneur perspective. This wasn't selected not only due to its fairly limiting entrepreneurial perspective, but also due to (Osterwalder, et al., 2005) research including wider empirical data range. This is evident due to Osterwalder (2005) looking back even further than Morris et al. (2005) including research of the field for the last 20 years up to 2007, and summing up previous work on the BM adding new theoretical aspects (Lindgren, 2011). (Richard, et al., 2006) research definition of the BM even though have been found as equally intriguing and definitely worth attention for the further research, is still in the development phase (article yet to be published) and cannot be fully grounded perspective at this point and time.

However Ostervalder's definition even though reflecting well overall literature take on the business models, could be seen as considering business model strictly at business level (Lindgren, et al., 2011) argues that is not the case in most organizations, and that each organization can have <u>one or more</u> operating business models. This aspect can be considered as rather significant and considered necessary to be addressed in the business model definition. Therefore, (Osterwalder, et al., 2010) definition has been adapted to represent possible multitude of operational business models at the same organization.

"A business model describes the rationale of how business creates, delivers, and captures value for a specific business case."

By scaling down business model to focus on the product or service rather than whole business, this definition could be argued to include the understanding that same business could successfully contain several business models with different value propositions

Graphical illustration of this can be found in Figure 1 were it demonstrates how same business can have several business cases for consideration and each of this business case can have several business models.



Figure 1 Business and Business Models

Why Business Model should be used?

After clear definition of BM has been provided next logical step would be consider what value is added while working with the BM concept. In other words why it is actually worth looking at BM in the first place? Looking back at Magretta(2002) article we will find her arguing that even though BM is often not used in its correct logic in today's business world, it has enormous practical value. (Richard, et al., 2006) research examined in more detail if different business model could explain organization performance heterogeneity to same extent as traditional factors such as year industry or firm effect. This research took US companies in COMPUSTAT-CRSP database from 1998-2002 and tried to see connection between financial performance and used business model type as in Table 10.

The outcome of the research was that business model type effect is higher than year effects, and if looking at more generalized business categorization it is higher than industry effect. These findings are quite fascinating as there is some evidence that chosen business model could, to some degree, explain business performance. Even though this particular research has a different perspective on the business model, it provides great notion of opportunity of simply defined business model comparison point for organizational performance. Furthermore, as suggested by (Osterwalder, et al., 2005) comparison between company business model to other companies BM's in different industries might provide different insights.

Another take on BM is that"...business models can be powerful tools for analyzing, implementing and communicating strategic choices." (Shafer, et al., 2005). This is a bit different approach, where business model is seen as means to take action in order to fulfill organizational strategy. To give a bit better understanding of this approach example of house build can be imagined as illustration of the business model. If strategy would represent the requirement that e.g. house would have two floors, and the first floor should have bedroom and a kitchen, business model would represent the actual planning of the house. Where and how the room space should be divided, what should layout in first and second floor to fulfill the initial requirements. In this scenario, while planning the house layout indication of the problems with having kitchen and bedrooms in the first floor. This could lead into revising the original requirements, same as the business model development could pinpoint some need for strategy adjustments.

Business model can be a strong tool for understanding and sharing of business logic. As pointed out earlier it is very common that executives cannot clearly formulate the mental business model they got in their head. This is due to increasingly more complex business models especially with ICT and e-business models, where the relationships between different business model components together with the decisive success factors are not easily observable. This is where modeling of the BM helps identifying and understanding of *relevant* components and relationships between them in the particular domain (Osterwalder, et al., 2005). Furthermore, business model provides the possibility of presenting business logic graphically, greatly increasing degree to which complexity can be handled when processing information through visual system (Rode 2000).

Another important aspect of BM usability is planning and implementation of change. When company decides to adapt new business model or innovate existing one, understanding and ability to share BM

will improve planning, change and implementation. It is much easier to move from one point to another when correctly understood what components and how will need to change (Osterwalder, et al., 2005). This is also supported by (Linder, et al., 2000) where they introduce change models as seen in Figure 2. These different models characterize how radical business model change is in comparison to existing BM. Realization model is mainly focusing on exploiting existing operational framework. Renewal model firm leverages its core skill to create new, sometimes disruptively new, position on the price/value curve. Extension model expand businesses to cover new ground to include new markets, value chain functions, and product and service lines. Journey model involves complete transformation of the business model where company moves to the new operational model purposefully.



Figure 2 Change Models (Linder, et al. 2000)

Business model frameworks

As it has been mentioned previously business frameworks discuss the consisting components of business models. It is important to note, that since there is a variety of opinions what business model definition is, the opinion on what components constitute business models in the literature also differs (Morris, et al., 2005) (Osterwalder, et al., 2005). Therefore this research will build on (Fielt, 2011)where it is picks out business model frameworks which are "very popular, well published (preferably in a book, not just a paper) and/or have more specific characteristics". Furthermore this research will exclude frameworks with fairly specific field of application (e.g. e-business model framework, STOF model, e3 value, etc. (Fielt, 2011)). This choice has been made due to intention pick out frameworks with broader application potential avoiding emphasized focus on specific business types (Fielt, 2011). Considering mentioned limitations there will be three frameworks presented: The Business model Canvas (Osterwalder and Pigneur 2010), the four-box business model (Johnson 2010) and NEWGIMB (Lindgren, 2011).

The Business Model Canvas

Business Model Canvas introduces a "shared language for describing, visualizing, assessing, and changing business models" (Osterwalder, et al., 2010). It is based on A. Osterwalder PhD thesis (Osterwalder, 2004) and his later research on business models (Osterwalder, et al., 2005). Business Model Canvas contains nine building blocks, which have been presented together with short descriptions in Table 4.

Building Block number	Building block	Description
1	Customer Segments	An organization serves one or several Customer Segments
2	Value Propositions	It seeks to solve customer problems and satisfy customer needs with value propositions
3	Channels	Value propositions are delivered to customers through communications, distribution, and sales Channels
4	Customer Relationships	Customer relationships are established and maintained with each Customer Segment.
5	Revenue Streams	Revenue streams result from value propositions successfully offered to customers
6	Key Resources	Key resources are the assets required to offer and deliver the previously described elements
7	Key Activities	by performing a number of Key Activities.
8	Key partnerships	Some activities are outsourced and some resources are acquired outside the enterprise.
9	Cost structure	The business model elements result in the cost structure

Table 4 Nine building blocks of the Business Model Canvas

The nine building blocks form basis for the business model canvas Figure 3. Business model presented in this way allows clearer discussion and changes because it becomes more concrete and tangible with the help of storytelling allowed by the canvas, which is "design- and innovation-oriented" (Fielt, 2011). (Osterwalder, et al., 2010) associates business model canvas to painter's canvas, "allowing to paint new or existing business models" and imagine "that which does not exist". One of most evident technique in

the business model canvas is visual thinking (Fielt, 2011) which uses visual tools like Post-ittm notes, pictures, sketches and diagrams for building and discussing business models on the provided template Figure 3. Business model presented in this way allows clearer discussion and changes because it becomes more concrete and tangible and allowing story telling (Fielt, 2011).



Figure 3 Business Model Canvas (Osterwalder and Pigneour, 2010)

NEWGIBM

NewGIBM (**New G**lobal ICT-based **B**usiness **M**odel) was greatly "inspired by Osterwalder et al. (2004) nine building blocks, Amit and Zott's (2001) analysis, Chesbrough's (2006) open business model innovation, Johnson et al. (2008), and Hamel (2000)" (Lindgren, et al., 2011). This research took Ostervalder's framework and combined revenue model and cost structure building blocks under Johnson et al. (2008) suggested term – profit formula. Furthermore they excluded distribution channel as they believe it is imbedded in the value chain building block. Seven building blocks together with short description of different building blocks are provided in Table 5. The framework was also published by p. Lindgren (Lindgren, 2011), introducing not only research behind the model, but also study four study cases where application of the NEWGIBM is demonstrated.

Important difference from Business Model Canvas, however, is the level of focus in NEWGIBM, which is not the entire business model portfolio, but a business model level. This means that different business models are identified (any business usually have more than one e.g. different products might have different business models (Casadesus-Masanell, et al., 2010)) while focusing only one at the time.

Table 5 NEWGIBM building blocks (Lindgren, 2011)

Building Block number	Building block	Description
1	Value Proposition	Products, Services, Processes (physical, digital and virtual)
2	Customer	B2B or B2C customer, Customers (Physical, digital and virtual), Chains of customers
3	Value Chain [Internal]	Value chain according to description from M. Porter with all the primary and secondary function
4	Competences	Competences, Core competences
5	Networks	Networks (physical, digital and virtual)
6	Relations	Relations (physical, digital and virtual)
7	Profit formula	Turnover – Cost = Profit, Transaction cost economic model, Resource-based economic model (complementarity of capabilities of firms)

Four-box Business Model

Four-box business model earlier version published in (Johnson, et al., 2008) and later published in Johnson book called "Seizing the White Space" (Johnson, 2010) looks at business models from a slightly different angle, seeing it as a tool for companies trying to move to "white space". By "white space" Johnson (2010) addresses company's "opportunities outside its core and beyond its adjacencies that require a different business model to exploit". Therefore the four-box model provides the structure needed to reveal and categorize issues that must be addressed before company can move to its white space, where assumptions are high and knowledge is low (contrary to company's core space) (Johnson, 2010). The graphical representation of the Four-box model is provided in Figure 4. As it can be noted from the figure Johnson addresses key processes and key resources in tandem even though they are separated (Johnson, 2010). The four components of four –box business models are presented in Table 6.



Figure 4 Four Box Business Model (Johnson, 2010)

Table 6 Four-box Business Model Components (Johnson, 2010)

Component	Definition		
Customer value propositionAn offering that helps customers more effectively, reliably, conveniently, or affordably solve an important problem (or satisfy a job-to-be-done) at a given price	An offering that helps customers more	Job-to-be-done	To solve an important problem for a customer
	Offering	Satisfies the problem or job. Defined not only by what is sold but also by how it's sold	
Profit Formula	The economic blueprint that defines how the company will create value for itself and its shareholders. It specifies the assets and fixed cost	Revenue Model	How much money can be made: price x quantity. Quantity can be thought of in terms of market share, purchase frequency, ancillary sales, etc.
	structure, as well as the margins and velocity	Cost Structure	Includes direct costs, overhead costs, and economies of scale.
	required to cover them.	Target Unit Margin	How much each transaction should net to cover overhead and achieve desired profit levels.
		Resource Velocity	How quickly resources need to be used to support target volume. Includes lead times, throughput, inventory turns, asset utilization. etc.
Key Resources	The unique people, technology, products, facilities, equipment, funding, and brand required to deliver the	People	
-		Technology, Products	
		Equipment	
		Information	
		Channels	
	value proposition to the	Partnerships, Alliances	
	customer	Funding	
		Brand	
Key processes	The means by which a company delivers on the customer value proposition in a sustainable, repeatable, scalable, and manageable way.	Processes	Design, product development, sourcing, manufacturing, marketing hiring and training, IT
		Business Rules and Success metrics	Margin requirements for investment, credit terms, lead times, supplier terms.
		Behavioral Norms	Opportunity size needed for investment, approach to customers and channels.

Business model framework comparison

After short introduction to each framework has been presented next step would be compare them to each other evaluating which one would be most beneficial for this research.

To Be vs. As Is

One important aspect to look at business model frameworks is in which business dimension it focuses most "to be" or "as is". By term "as is" referring to current business model as it is, without incorporating any changes or enhancements while "to be" referring to business model including the improvements in current (as is) model (BusinessDictionary).

Four-box model framework, as it can be noticed from the book name "Seizing the white space" where it was introduced in more detail, is looking onto how the companies can venture into the white space with the help of the business model innovation (Johnson, 2010). This means that Johnson sees business model innovation as the opportunity to venture out far outside business "usual way of working and presents a series of unique and perplexing challenges" (Johnson, 2010). Referring back to the change models Figure 2 by (Linder, et al., 2000) four-box model is focusing mainly the extension and journey model types due to the level of change it suggest. This is due to the organizational need to expand to the white space, acquiring competences outside the core competences and obtain new customers or serve same customers in fundamentally different ways (Johnson, 2010).

Business model canvas is somewhat similar in the outlook towards business models, focusing more on the" to be" aspects as it focuses on design and innovation of the business models (Fielt, 2011). This can be observed in the Osterwalder and Pigneur book where they stress role of design in business, and offer various design tools and techniques to do so (Osterwalder, et al., 2010). One of most major tools suggested by Osterwalder and Pigneur is visualization, which is enabled trough powerful and easy to comprehend business model canvas.

NEWGIBM framework together with previously mentioned frameworks has high focus on business model innovation, which means high focus on "to be" business models. Nevertheless, its main distinction from other frameworks is more narrow focus of business model. NEWGIBM looks at business as entity composed from one or more business models, providing more detailed understanding how different business models within business comply with the overall organizational goals and performance.

Pros and cons

Pros: Four -box business model

Four-box business model compared to other two frameworks is most condensed. Consisting from four components as seen in Table 6 it provides a very general overview of business model. Each of the components, however, can be divided further to the sub-components (also can be seen in Table 6). The different levels can be useful in order to greatly simplify the business model concept together with possibility to be much more specific if needed. Furthermore four-box model has provided clear relations

between the components in its visualization, providing good understanding of interdependencies. This provides good understanding of importance and relation between different components (Johnson, 2010).

Cons: Four-box business model

The simplicity of the four-box business model can be seen as disadvantage in some cases. The danger of having too little detail in the business representation can be as great as having it too complex. Even though in overall Jhonson (2010) talks all the components of the other two frameworks the condensed version of them leaves room for error while using the framework with possibility of leaving out critical components for the business models. Another possible drawback could be considered the business level focus from four-business model framework. This means that four-box framework looks at business as operating under single business model which is not always the case according to (neffics D 4.3).

Pros: Business Model Canvas

Business model canvas provides strong and easy to understand template for visualizing business models. This, as it has been mentioned previously, greatly increases level of complexity which can be handled successfully (for more detail please see the "Why Business Model should be used?" paragraph). This is further supported by easy to understand and visually appealing template Figure 3 together with proposition of incorporating pictures, sketches, diagrams and post-it notes. This provides more concrete and clear discussion and change because business model becomes more tangible (Fielt, 2011). Another advantage of the business model canvas could be seen its nine building blocks as it is fairly straight forward to understand and is rather detailed take on the business model components. Finally, business model canvas could be considered to have very strong empirical research behind it if. It is not only based on Osterwalder PhD thesis (Osterwalder, 2004) but also the book introducing business model canvas - "Business Model Generation" had involved 470 practitioners in its creation in addition to its original authors (Osterwalder, et al., 2010).

Cons: Business Model Canvas

One of the cons in the business model canvas could be considered same as the four-box model where the business model is seen as an overall entity for entire business. In other words, business model canvas works in the business model level (Lindgren, et al., 2011). Therefore it could be potentially challenging to inspect already existing business models within the company in order to assess their effectiveness and compatibility with business.

Pros: NEWGIBM

Since NEWGIBM is greatly based on the business model canvas, it does have the same components in the model, which trough various research have proven to be fairly effective while trying to define and describe business models. It combined both four-box business model simplicity and business model canvas detail merging some of its components (e.g. profit formula (Lindgren, 2011)). Furthermore, NEWGIBM looks into the business model level recognizing that same business potentially can have more

than one operating business model. This allows more detailed view of the business (Lindgren, et al., 2011)

Cons: NEWGIBM

NEWGIBM is the only one from the three frameworks at hand which still does not have clear visual representation of the framework. It also does not graphically demonstrate the relationships between its different components as oppose to four-box business model or provide the template for the visual representation as oppose to business model canvas.

Conclusion

This chapter has introduced different business model definitions and various existing opinions in this research field. Based on research comparing and consolidating business models working definition was selected Osterwalder et al. (2010) and modified to: "A business model describes the rationale of how business crates, delivers, and captures value for a specific business case". Next value for the business from business model concept has been presented to verify its usefulness. And finally three business model frameworks have been presented: Business Model Canvas, NEWGIBM and Four-Box Business Model.

Problem formulation

This chapter will present evaluation of the Business Model literature provided in the previous chapter, followed by initiation of problem formulation.

From the previous chapter business model literature analysis it is clear that even though this field is relatively new, but it is getting more attention in the recent years from the academics and the business world. Table 3 Evolution of the Business Model Concept provides good indication that there can be numerous research concerning defining business model concept (also refer to Table 1 Business Model Definitions), listing and describing business model components and modeling business model components. However lack of business model concept application in empirical settings is evident, indicating necessity for the further research of business model application in the organizational settings. Therefore problem formulation for this paper has been defined as following:

How can Business Model concept be effectively utilized in the empirical settings?

Problem formulation can be argued as being general enough to identify broader applications of the business models, but at the same time being specific enough to identify right focus points. This problem formulation is also limiting the focal point of the paper to be application of the business model concept rather than discussion on business model components or business model framework composition.

In order to address this problem statement there have been derived three research questions which can be defined by following:

RQ 1: Which business model framework fits best this research?

In order to address the problem statement it is important to pinpoint which business model framework will be used and why. It has been presented in the previous chapter that there are numerous business model frameworks therefore it is important to identify right framework for this particular case.

RQ 2: Is it possible to use Business Model framework on the company like Vlastuin?

After choosing business model framework, it is important to evaluate if it can be applied in case company – Vlastuin. This will evaluate validity of business model concept application in rather specific empirical settings.

RQ 3: How Vlastuin Business Model can be expressed in the graphical way?

After applying business model in the specific business next step is to look how it can be expressed in more graphical way. Graphical representation has potential to increase the perceptiveness and provide more effective communication means of the business model. This will benefit research by exhibiting how business model concept can be utilized in Vlastuin case.

Conclusion

This chapter has represented acknowledged gap in the literature which has been addressed trough problem formulation and three research questions derived from it.

Analysis

This chapter will try to address the research problem formulation by addressing each of the research questions. (add more details)

Which business model framework fits best this research

As it has been mentioned in problem formulation, it is important to determine which business model framework will fit this particular project. There already have been introduced three chosen candidate frameworks (Business Model Canvas, Four-box Model, NEWGIBM, please refer to chapter one for more details), which were evaluated comparing each other in order to determent major differences between them. The three frameworks were selected based on (Fielt, 2011) research requirements, while additionally focusing only on the frameworks without specific field of application. In order to narrow down the selection even further more specific requirements are needed, which will be discussed in the fallowing paragraphs.

It is important to note that further requirement considerations for business model frameworks are subjective opinion and can be biased. This might be subject for further research focus on findings validation.

Since there has been decided to use a case company ("Vlastuin") one of the requirements is the capability for the business model framework <u>work with the "As Is" business models</u>. This has been provided by the Vlastuin itself, as the company shows its interest in improving current business models rather than discovering new ones.

Referring back to the evaluation of the three selected framework evaluation it can be seen that to some degree all the selected frameworks focuses more on the "To Be" part of the business models. However, in the latest article (Lindgren D4.3) NEWGIBM could be seen focusing equally on both "To Be" and "As Is" business timeframes. Therefore it might be seen as superior fit for this particular case to use NEWGIBM while having in mind requirement to work in the "As Is" timeframe.

Another requirement for the business model framework is that it should provide <u>right level of</u> <u>complexity</u>. It is important that framework would be able to provide good understanding of the business model providing just the right amount of detail. It should not be too complex in order to improve its comprehension and communication, but also include enough detail to provide accurate conception of the business model. One approach to determine complexity can be considering the amount of components each framework includes. The more components framework includes the higher number of detail is required, providing more thorough but complex image of the business model at hand.

As it can be seen in the chapter one, arguably highest level of complexity is in the business model canvas. This can be argued is determined by the quantity of the components it consists of (please refer to Table 4 for more detail). Four-box business model, as the name of the framework implies, has only four components and provides fairly simplified version of the business models. However, as it can be seen in the representation of the four-box model, due to its small amount of the components each of the component consists of several sub-components making it more confusing. NEWGIBM framework

could be seen as a middle point between the two already mentioned frameworks, as it is mixture of the business model canvas and four-box business model components. This provides just the right amount of detail without the need of numerous sub-components at the same time not having excessive amount of the components.

Closely related to the complexity factor is next requirement of <u>least repetitious framework</u>. This will combine framework evaluation regarding redundant components and absence of fundamental components. In order to evaluate frameworks, it is necessary to have a framework of reference, which in this case will be NEWGIBM. NEWGIBM has been chosen as it is believed to provide good starting point for evaluation, because it was selected as a framework with right complexity. Now it is important to identify if by losing some of the components NEWGIBM did not left out important aspects of the business model, together by looking if it still has some components which are not necessary. Following two tables will provide rough comparison between three frameworks, where Business Model Canvas and Four-box Model components will be ascribed with corresponding NEWGIBM component providing good overview of repetitive and missing components.

Business Model Canvas	NEWGIBM
Customer Segments	Customer
Value Propositions	Value Proposition
Channels	Value Chain [Internal]
Customer Relationships	Customer
Revenue Streams	Profit formula
Key Resources	Value Chain [Internal]
Key Activities	Value Chain [Internal]
Key partnerships	Networks
Cost structure	Profit formula

Table 7 Business Model Canvas vs. NEWGIBM

As it can be noted from Table 7 some of the Business Model Canvas Components seem to be repeating in comparison with the NEWGIBM. One of the reason could be that it is in the higher detail level were the NEWGIBM has it in a more general components. For example Customer segments and Customer relationships could be seen as part of overall Customer component in the NEWGIBM, or Value Chain [internal] including Key activities, resources and channels. Therefore NEWGIBM seems to include all of the components Business Model Canvas is taking into consideration in addition pointing out one more important component – competences. Competences do not seem to be stated out clearly in the business model canvas, yet it might be seen as part of the key activities component. It can be argued that NEWGIBM competences component is addressing important aspect, since it is important to determine needed knowledge and abilities required for successful operationalization of the business model. Furthermore NEWGIBM also includes relations component requiring considerations on relations between business model canvas components, which is not explicitly defined in Business Model Canvas. To sum up, Business Model Canvas components in comparison to NEWGIBM can be seen too detailed to some degree, and missing Competences and Relations components. Table 8 Four-box Model vs. NEWGIBM

Four-box Business Model	NEWGIBM
Customer value proposition	Value Proposition, Customer
Profit Formula	Profit formula
Key Resources	Value Chain [Internal]
Key Processes	Value Chain [Internal]

Four-box business model if compared with the NEWGIBM could be seen as rather condensed and missing some important components. For example it is not including Competences, Relations and Networks components while combining customer and value proposition to same component. This combination of Customer and Value proposition makes unclear significance of accurately defining customer segment. Overall four-box business model could be argued to leave out important components in order to provide more simplistic representation of the business model.

Comparison of the three frameworks considering their repetitiveness and exclusion of important components NEWGIBM was found to have pointed out most important elements while combining more obvious ones (e.g. as seen with value chain [internal] and customer). Therefore NEWGIBM has been chosen as least repetitive while not leaving out significant components.

Last condition considered during the evaluation of frameworks is the <u>simplicity of explication</u> of the business model. Simplicity of explication in this project is defined as ability to express and share business model with the help of framework. Therefore simplicity of explication is seen as combination of complexity and business model graphical representation. This requirement is considered essential since one of important business model applications is seen as communication and sharing of business ideas and business potential (more detail on the business model applications can be found in chapter one).

Since the complexity of the NEWGIBM is considered to be best fitting this project requirement, naturally, it is first contender to be between simple to explicate frameworks. However, as requirements pointed out, simplicity of explication is also affected by the graphical representation capabilities of the framework. As chapter one introduction to the frameworks has pointed out, NEWGIBM does not have established graphical representation, other than table like list stating all components (also referred as building blocks), which is not as graphically appealing or as easy to understand as other two frameworks. Four-box business model, for example, has the graphical model (refer to Figure 4) consisting of four boxes, and representing different relationships between them (Johnson, 2010). Business Model Canvas provides especially attractive and easy to understand template for the business model (refer to Figure 3), even though it is more focusing on the new business model creation it also supports identification of existing business models (Osterwalder, et al., 2010). Furthermore it supports story telling e.g. going from right to left going from the customer to the business or from top to bottom going from the customer to revenues. This provides easy to understand and communicate graphical platform making Business Model Canvas leading in simple to explicate requirement.

Evaluation: best fitting business model framework for this project?

This chapter has introduced requirements for this project and evaluated each of the three business model frameworks, selected in the chapter one. To summarize the comparison of selected frameworks it could be pointed out that it is believed that best reflection on the existing business models would be provided through NEWGIBM. In addition NEWGIBM can be argued as having appropriate amount of complexity to represent essential amount of details providing necessary, and neither oversimplified nor overly exhaustive business model. This is further supported by NEWGIBM having least repetitive and including most significant components. However it is important to note that NEWGIBM lacks graphical representation of the business model, were Business Model Canvas proved to be strongest from the selected frameworks.

Considering all the mentioned elements NEWGIBM has been selected, due to its only drawback being graphical representation of the business model. It has been mentioned that ease of communication is not solely represented by graphical element but also by its complexity and NEWGIBM was seen as superior in that context.

Is it possible to use Business Model framework on the company like Vlastuin?

Vlastuin

Vlastuin is company started at 1959 and located in Netherlands. Vlastuin employs around 150 people and had turnover of 27 million in 2011. During more than 50 years of presence Vlastuin have changed its core business several times. Starting off by installing and servicing furnaces and boilers trough gradual changes leading to today's business manufacturing and assembling cranes and it's parts. Graphical representation of Vlastuin organizational evolvement can be seen in Figure 5.



Figure 5 Vlastuin organizational evolvement

Vlastuin is mainly interested in exploring its existing business models and have provided two business cases to explore which will be provided in following paragraphs. There have been chosen to provide two business models in order to further strengthen the argument that one business can have more than one operational business model simultaneously.

Vlastuin cranes business case

One of the business cases provided by Vlastuin is production of the crane booms. This business started due to the crane producers outsourcing crane boom production. Crane boom is the extendable and retraceable arm of the crane which lifts the loads (see Figure 6).



Figure 6 Crane boom on the truck

Vlastuin as a manufacturer of D-Tec container trailers had competences of accurate bending and high quality welding of large heavy pieces of steel which was exactly what crane producers where looking for. Currently Vlastuin is a provider of the crane booms to crane manufacturers' trough out the Europe. This particular case is focusing on the truck cranes.

This business model includes three major stakeholders: Truck crane producers, Crane boom providers and Metal sheet supplier. Each of these will be shortly introduced presenting their roles and interconnections between each other.

Truck crain producer (OEM)

Truck crain producer, as the name implies, produces the cranes and mounts them on the truck. Often they outsource part manufacturing and focus more on final product. Part of the outsourced manufacturing is boom production, where Vlastuin specializes. Truck crain producer has extensive knowledge on crane boom manufacturing since it was originally manufactured in house. Therefore, they demand same or even higher quality for the outsourced parts. Furthermore, in this specific crane boom part provided by Vlastuin case, truck crain producer also has a contract with metal sheet supplier making sure raw material meets the specifications for manufacturing.

Crane boom provider

Crain boom provider, or in this case Vlastuin, manufactures crain boom parts based on the customer specifications. This process starts with creation of the production drawing and product quality plan by a specialized engineer. Afterwards special sheet metal is ordered from the supplier. After raw materials are received production processes launch. Three major steps in production are laser cutting, sheet bending and certified welding. Laser cutting involves cutting out various boom components of the sheet metal plates using laser. This provided high quality cutting edges and very precise component dimensions. Sheet Bending is where high dimension heavy components are bent at right angles according to predefined sequence. In order to obtain exact bend angles very precise laser angle measurements are performed during the process. Certified welding is performed with high-end welding equipment by certified welders due to safety regulations of truck cranes. Here the separate boom components are welded together in a pre-set welding order. This is to avoid crane boom getting twisted due to the heat transfer and thick metal, causing later problems in crane boom operation. After all the production processes are carried out and quality is insured separate welding assemblies are grouped together and sent to the customer production line.

Sheet metal provider

Specifications meeting sheet metal is supplied by sheet metal provider after truck crane provider sends out stock release order assigning certain amount of stock to crane boom provider. Due to its long manufacturing processes these are manufactured in batches and kept in stock. After receiving order sheet metal is transported to crane boom provider.

For the graphical overview of the Vlastuin cranes business case please refer to Figure 7.



Figure 7 Vlastuin Cranes Business Case Overview

Vlastuin paperless manure transportation

Next business case from Vlastuin is manure transportation data administration. In the Netherlands by the law in order to transport manure authorities have to be notified at start and end of transportation with manure samples. Due to these regulations Vlastuin started providing AGR –unit (Dutch for Automatic Data Registration). This unit sends data to the Vlastuin server where it is filtered and forwarded to the authorities dramatically decreasing processing times and paper work needed for manure transportation. There are eight significant stakeholders in this business case which will be shortly introduced next.

Manure producer

Manure producer usually is a livestock farmer who has excessive amount of manure. Farmer usually has a contract with the manure transporter (manure transporter will be explained in more detail later on) which means that all the work that comes with manure transportation is done by the manure transporter. Some examples could be manure transporter is responsible for finding manure consumer, or manure transporter is responsible for all the paper work around the manure transportation. Cost associated for manure transportation is deducted from manure producer payment for manure. Manure producer gets digital version of the paperwork from the manure transporter.

Manure consumer

Manure consumer usually is the farmer who needs the manure as fertilizer for his fields. Manure consumer has a contract with manure transporter which includes all the work associated with manure transportation. Manure consumer gets the invoice for manure together with the digital copy of the paperwork.

Manure transporter

Manure transporter is the direct customer of Vlastuin. This usually is the transportation company who transports manure from manure producer to manure consumer. Manure transporter has contract with both sides manure producer and consumer, and dispatches tank trailer to manure producer upon the request. During loading of manure to tank samples of the manure are packaged into the sealed bags, as can be seen in Figure 8.



Figure 8 Manure sample bag

These samples are fitted with barcodes which are scanned and sent to the authorities together with other required information to the authorities. This is automatically performed by the AGR – unit via infrastructure provider service. After receiving conformation from the authorities about successful transmission manure is transported to the manure consumer. Manure consumer is automatically determined by GPS data combined with manure administration data identifying closest manure consumer location. Before transportation consumer needs to confirm if he wants to receive the manure.

Infrastructure provider

Manure infrastructure provider in this case Vlastuin, is providing the platform for data transferring and registration. Vlastuin has a redundant server stacks which acts a communication center around manure transportation. AGR –unit (see Figure 9) sends information to the servers with GPS coordinates and scanned sample bag barcodes together with other information. Servers immediately filter out only mandatory information and send this data to authorities. Authorities send back notification to servers informing if transaction was successful where it is forwarded to AGR- unit allowing further processes for manure transportation. In case the transaction would not be confirmed (which is very infrequent) problem is addressed manually calling the authorities and further addressing it.



Figure 9 AGR Unit

Manure Administrator also is connected to the server, which allows access to the laboratory results even thought laboratory is not connected to the servers directly. All this data can be accessed through AGR website where manure transporter has additional functionalities such as Track-n-Trace (transport movement insights) and consumer specific accounting data. AGR – unit is sold with attached service contact including mobile data connection necessary for communication with the data server, all the

firmware updates of the unit, and software updates for AGR web site. In addition to AGR – unit Vlastuin also provides D-TEC sampling units which takes the manure samples and packages them to the plastic bags as seen in Figure 8. This unit also comes with servicing contract together with consumables and spare parts.

Manure Administrator

Manure administrator provides administrative services to meet requirements of the fertilizer law. One of the examples could be application of manure accounting ID from the ministry. Manure administrator also feeds data from laboratory results of the manure samples. Manure administrator acts as a middle man between authorities and manure transporter, therefore only the final data is uploaded to the authorities.

Laboratory

Laboratory receives the manure samples for assessment of its value. It identifies manure producer or receiver by the barcode, and returns their findings to authorities and manure administrator.

Authorities

In this particular case authority is Ministry of Agriculture, Nature management and Fisheries in Netherlands. They receive the data of manure transporting combined with the laboratory results.

Regulator

This is the AID (Dutch for General Inspection Service) in the Netherlands. They are making sure all the requirements are met by all the participating parties in the manure transporting. This includes checking farmers, manure transporter infrastructure provider, manure administrator and even the authorities themselves. If any of requirements are violated the business (or private party) violation occurred gets a fine.



Figure 10 Vlastuin Business Casess and Business Models

Figure 10 illustrates how theoretical perspective on business models can be seen in this particular case. Vlastuin not only has two simultaneously operational business cases, but even looking into manure transportation in more detail shows that same business case has at least two business models. This further strengthens the points risen in the discussion about business model definition chapter following (Lindgren, et al., 2011) argumentation about possible multitude of successful business models in the same business.



Graphical overview can be found in the following illustrations of manure loading Figure 11 and unloading

Figure 12 Manure unloading overview .



Figure 11 Manure loading overview



Figure 12 Manure unloading overview

To clarify further the processes in the manure transportation and different stakeholders process flow chart has been compiled and will be presented in the following paragraph. In order to provide easier to understand flow charts transportation processes have been split into loading and unloading.



Figure 13 Manure Loading Flow Chart

Figure 13 points out couple important aspects of the process. First that in case the infrastructure provided communication channel with authorities encounters some issues in regards to the manure transportation registration, manure transporter is obligated to contact authorities manually. Another important aspect to note is that even after the loading is complete, and the particular part of the process is considered finished there are some parallel processes (delivering the samples to laboratory) happening at the same time the manure transportation takes place.



Figure 14 Manure Unloading Flow Chart

The Figure 14 continues representation of manure transportation processes. As it can be seen it continues on from the loading flow chart end point. One of the important aspects to note is that infrastructure provider determines for the manure transporter the closest manure receiver. Other two key features to notify is as in previous graph mentioned data transaction conformation and parallel process of manure sample delivery to the laboratory. This means that the combined information of the lab results, together with other required data is directly accessible only to the authorities and administrator.

Compiling Manure transportation Business Model - Vlastuin

After the introduction to the case company followed up by the introduction of the business case, next step is to represent trough NEWGIBM framework. In order to do that selection of three stakeholders point of view business models will be compiled. It is important to note that this is biased opinion on how business model for each of the stakeholders can be represented, and can be a subject for the further research to verify.

First of all since Vlastuin is providing the business case at hand, business model from Vlastuin point of view will specified. This will try to address what Vlastuin value proposition for the particular business case while together addressing rest of the NEWGIBM business model building blocks.

Value proposition

- Communication center for manure transporting services
- Automated mandatory data upload to the authorities
- Access to the laboratory results
- Transportation insights (track-n-trace)
- Manure accounting data

As it can be seen, Vlastuin value proposition consists of several rather different, but at the same time closely related aspects. By being in the center of all communications around the manure transportation, it is able to store and filter out just necessary data to automate the upload of information to the authorities. Due to them being able to determine where the trailers are, since the AGR unit constantly communicates with the servers, they can provide track and trace functionality. And due to the contacts with the administration, they are able to provide accounting data together with the access to the laboratory results. Only the most significant elements of the value proposition have been pointed out, to provide general overview and understanding what are the most important parts for Vlastuin to focus on.

Target customers and users

- Manure transporter
- Manure Administrator
- Authority
- Manure provider
- Manure receiver
- Laboratories

Target customer has been defined as <u>manure transporter</u>, as it is buying the AGR unit and the service attached to it. <u>Authorities</u>, even though they are not paying from service they are benefiting from Vlastuin provided infrastructure of communications trough possibility to reduce the amount of paper work and automate the data registration to some degree. <u>Manure administrator</u> benefits from platform in a same way, as it helps to somewhat to digitalize the paper work. <u>Manure provider and receiver</u>, together with <u>laboratories</u> could be seen as indirect customers, as they too indirectly benefit from the system.

While talking about **value chain** five different aspects will be considered. Activities required to receive, store and disseminate inputs are included in inbound element. Operations include activities required to transform inputs into outputs (both for products and services). Activities to collect store and distribute goods are included in the outbound element. Marketing and sales includes activities of informing buyers about products or services, induce buyers to purchase them, and facilitate their purchase. Finally the service element includes activities required to keep the product or service working effectively for the buyer after it is sold and delivered. (Porter, 1985)

Value chain

- Inbound
 - Data input from AGR Unit
 - o GPS data
 - Administrative services to meet the requirements of the Fertilizer Law

As it can be seen the inbound element includes data input from the AGR unit, which is the data feed basing majority of communications between manure transporter, authorities, laboratory and administrator. GPS data is one of the examples of other types of data, which in this case is used not only inform authorities about manure loading unloading location, but also for manure transportation track n trace services. Lastly administrative services includes the relation to the administrator, which allows manure transportation to have right paper work

- Operations
 - GPS and sample barcodes are sent to the authority on loading
 - o GPS and sample barcodes are sent to the authority on unloading
 - Administrator issues transportation ID

Main focus on the operations is forwarding received data after filtering it out to the authorities and laboratories (they will need to identify the origin from the barcodes). Also administrator provides the transportation ID for the manure processes.

- Outbound
 - Website manure transporter gets verification of successful transmission to the authorities
 - Website laboratory results

The customers are reached trough the website where the conformation of successful transactions together with laboratory results can be accessed by the customer.

- Marketing and sales
 - AGR Unit attaches servicing contract

At this point marketing is focusing on the AGR unit sales which come with the attached servicing contract (with included monthly fee for the service).

- <u>Service</u>
 - AGR unit updates
 - Data backup

Services include AGR unit firmware updates together with the website software updates. Also since there are redundant servers' data backup service is included to assure no data loss.

It can be noted that while combining business model focus was only on primary activities leaving out the support activities. This was due to the support activities seen as fairly general and overlaps with other NEWGIBM building blocks. In particular they can be related to the competences building block, e.g.HR or technological development.

Competences – technology, HR, organizational structure and culture

- Knowledge in manure regulations
- Data warehousing/processing
- Web development
- Mobile data communication

Since the value proposition is mainly focusing on data filtering processing and forwarding core competences are reflecting what those tasks are requiring. Since AGR unit is using mobile communication (GPRS) knowledge and competences surrounding this area is also critical. And finally knowledge about manure regulations is of the key initiators of this business model for Vlastuin in particular. Since the data resource about Vlastuin was fairly limited to technical part of the business model, competences in HR organization structure and culture is not known for this specific case.

Network

- Authorities
- Manure administrator
- Laboratory

Key network partners could be pointed out as being administrator, with the competences in manure administration tasks. Authorities, as they need to use and accept provided architecture for the manure administration tasks. Laboratory receives the samples of the manure and determines where they come from based on the information attached to the barcodes.

Relations

Vlastuin take on relations can be found in Appendix 5 were they mapped the different relations between the stakeholders. The challenge emerging from the provided Appendix 5 relations map is identifying the key relations (Granovetter, 1973) to the business model. Each business model have several types of relations, were some are of the key importance for functioning while others are there as a healthy supplement (Lindgren, et al., 2011) e.g. relation to a person in government might be useful in order to quicker react to changing law's as it could help to know about them earlier. Furthermore

business model could have relations which do not benefit it in any way, were the usefulness of looking into relations might kick in, helping to identify "wasteful" relations and getting rid of them.

Profit formula

Revenue – (AGR unit costs + manure administration costs) = profit

Profit formula includes the costs of the AGR unit combined with the costs of the manure administration services subtracted from the revenue of the service and AGR unit. It is worth to mention that structure of the profit formula is based on the AGR unit, which provides platform for the hole services which is key product.

Compiling Manure transportation Business Model – Manure Transporter

After introducing business model from Vlastuin point of view it can be interesting to see how it could look like from different point of view. As an example manure transporter has been chosen and will be described in the following paragraphs.

Value proposition

- Manure transportation
- No hassle paperwork
- Network with manure providers/receivers

Since manure transporter is selling the service of manure transportation the value proposition is quite different. It is focusing more on the hassle free paper work and network of the manure providers and receivers.

Target customers

- Manure provider
- Manure receiver
- Authorities

Customers of manure transporters are both manure providers, receivers as they are mainly interested in the manure transportation services. Authorities however are more interested in documentation of the transportation and need to be notified with pre-specified data inputs.

Value chain elements are based on previously mentioned M. Porter description.

Value chain

- Inbound
 - Manure from manure providers
 - Data from infrastructure provider
 - o Data from Administrator

For input this business model need manure from manure provider also data from the infrastructure provider about the manure receivers combined with the data from administrator e.g. manure transportation ID.

- Operations
 - Obtain and deliver manure sample to laboratory
 - Manure transportation
 - Produce paper work for manure provider and receiver

Since it is transportation service the key operation is the manure transportation, while manure sample delivery could be considered side task necessary to insure successful service. Digital paper work to manure receiver and provider is generated to confirm the transportation agreement.

- Outbound
 - o Manure trailer
 - Digital media for manure transportation documentation (email?)

To carry out transportation service manure transporter uses the manure trailer with attached to it hardware, such as sampling unit and AGR unit in this case. Furthermore contracts are sent trough the digital media to both manure receiver and provider.

Since there is little to no information towards the marketing and service from this point of view in order to avoid unnecessary inaccuracies they will not be presented.

Competences

- Network with manure providers receivers
- Knowledge in manure transportation regulations
- Equipment for manure transportation
- Manure paper work administration

One of the critical to these business model competences could be considered the network of manure providers and receivers. Regulations to the manure transportation is another important competences to the manure transporter complemented with equipment helping to carry out tasks needed to fulfill the regulations.

Network

- Infrastructure provider
- Authorities
- Laboratory
- Manure receiver
- Manure provider
- Administrator

In comparison to the infrastructure provider point of view network, main difference could be seen as addition of the end users, manure receiver and provider.

Relations

Please also refer to the appendix 5 for manure transporter relations.

Profit formula

Income - (Transportation costs + Infrastructure lease costs + administration costs) = profit

Manure transportation costs are covered by the manure receiver, which includes administration cots provided by Administrator, infrastructure lease costs (monthly fee to Vlastuin) and man hours combined with fuel costs and transportation equipment service costs.

The previous mentioned complete business models can be found in Appendix 4.

Conclusion

This section introduced Vlastuin case company and two business cases. Out of these two one was selected and looked into with more detail, providing general overview and more detailed process maps. Out of this information business models based on NEWGIBM framework have been compiled. To provide understanding that it is possible to look from several perspectives at the same business model couple business model perspectives have been provided. After reading this chapter one should find it clear what Vlastuin is, and have a good idea of the business case and business model.

How Vlastuin Business Model can be expressed in the graphical way?

After looking how Vlastuin business case could be envisioned in NEWGIBM framework, next research question try to address how this business model could be represented in a more graphical way. First, decision what type of representation would be most beneficial in this particular case, followed by the design decisions and representation of the result.

In order to increase the attractiveness and level of perception, it was decided to use 3D geometry. This might make business model representation make closer to the real world view therefore increasing the attractiveness and cognitive perception of the business model. To not complexity levels relatively low cube has been chosen as the best fit for the graphical representation of the NEWGIBM business model framework. The purpose of this representation however is considered to be rather different if compared to other two business model frameworks. It is main focus is on representation of how each of the building blocks is equally important and how relations actually binds all of them together and makes the business model "alive". In comparison the business model canvas is focusing more on the story telling where it shows how the different building blocks interact with each other and provides a good understanding of process sequence.

Since the cube has been selected as form of the representation of the NEWGIBM framework, each of the six sides will be representing building block and relations will be inside the cube representing the relations between the building blocks. Each side of the cube will be reflecting building block so will have to include main components identified in the previous chapter. The end product will be a short video representing not only all seven building blocks one by one, but also showing how they combine together and form a cube. This should provide a good understanding how important each of the building blocks are and how they depend from each other and are necessary for successful business model.

As it have been mentioned each of the cube sides will represent the building block of NEWGIBM, the general design of the cube sides can be found in the Appendix 3. While creating the design, of the sides Adobe Photoshop software has been selected to use, as it provides platform for high complexity graphical editing. Note that design of the cube sides combines graphics combined with the textual description. This is both appealing and informative way to provide information to various user groups and is expected to increase the acceptance and understanding of the business model. Therefore it is suggested to follow these guidelines when constructing business model graphical representation based on this template.

In order to demonstrate how it could be used to digitalize specific business model, previously mentioned Vlastuin manure transportation business model will be used. The design of each of the sides can also be found in the Appendix 3. In order to design each cube side, graphical representation for each building block have been selected, in order to exemplify and provide a visual attractiveness to the receiver of business model presentation. Furthermore the graphics have been transferred to the 3D environment adding motion to the visuals and further deepening understanding how important each of the building blocks is for the successful business model. The combination of cube sides to form a three dimensional cube should provide close to real world representation of the business model, which is believed to address research question three and delivers one of the ways of graphically representing Vlastuin

business model. The video of 3D cube animated combination can be found in the attached CD. In order to develop this model Autodesk software has been used called 3DS Max. This has been chosen as it provided very strong platform for creating editing and animating three dimensional environment. But the powerful platform for 3d modeling came with the price of steep learning curve, and included many hours of studding the software ins and outs in order to achieve the expected result. Furthermore this model of graphical representation is not updated in real time, and requires data input and modeling done beforehand. Therefore even if it is considered great starting point, it might not be very beneficial solution in the real world, other than providing the understanding of the business model in general. For the use in company a different type solutions might be more beneficial, with capability of real time data processing and representation, and much simpler to use and understand not requiring high technical knowledge in the software. Overall selection of the modeling techniques and software for them to be implemented during this project was found to fulfill the risen requirements, while the next step in business model graphical representation could be identification of the less complex way and maybe even a real time data input and processing.

Conclusion

This chapter addressed three research questions identified and described in the problem formulation. Solutions for each of the research questions have been provided. The best fitting this research framework after different comparisons and evaluation has been chosen to be NEGIBM. Then the introduction to Vlastuin organization have been provided followed by introduction of two business cases, which further illustrated the fact that same organization can have several successfully operating business models. One of the business cases has been chosen to evaluate further, manure transportation in particular, and business models following the NEWGIBM have been formulated, explaining the reasoning behind the made choices. Lastly introduction to the graphical design of the business model representation has been provided, followed by creation of video animation illustrating business model combination. It is believed that by addressing three research questions overall problem formulation has been addressed showing how business model concept can be utilized in the empirical settings.

Reflections

This project was focusing on business models and its graphical representation. This not only included the literature studies and fruitful discussions with Peter Lindgren, but also a journey slowly unveiling the power of business models. At the very beginning it was an interesting concept summing up a lot of research fields under one simple tool while in the end of the project I started to believe that this tool is a must have in any managers toolset. Its multidisciplinary nature and focus not only on current but also on future business provides potential evaluation platform or if taken from different perspective creativity and innovation tool.

One of the most interesting things I have learned during this project is its diversity. Diversity on interpretations understanding and argumentations of this concept, this was rather confusing while at the same time showed very high interest of scientific literature inspired by Internet boom to some degree. I did find this confusion still existing even between the today's researchers in the FINES conference in 2012 Aalborg discussions. To me the moment of clarity stroke with the introduction of Vlastuin case. The hands on approach were always my preferred choice due to my IT engineering background.

From the technical part of the project, the design and development of 3D models took unexpectedly long. Initially I did not think it would as time consuming as it ended up to be. One of interesting aspects to note could be that the rendering times of the 3D animation on earlier versions was around 4 to 5 hours for the 30 second video to render. Later on by completely remodeling and use of more advanced techniques this rendering time became only around 20 minutes for same length video. This just proved to me personally how small details sometimes can show up to be most time consuming.

To summarize, I found this project very intriguing and unexpectedly involving. During this time I became fascinated with business models and the power of this concept. I believe this knowledge might be very beneficial in my future and definitely will stay field of interest.

Summary

This project have introduced business model concept. After providing brief overview selected and modified Osterwalder et al. (2010) business model definition to: "A business model describes the rationale of how business crates, delivers, and captures value for a specific business case". Value of business model concept use was represented next followed by introduction of three business model frameworks: Business Model Canvas, NEWGIBM and Four-Box Business Model.

Introduction to the recognized gap to was represented in the problem formulation chapter leading to the three research questions. First research question: "Which business model framework fits best this research?" identified that NEWGIBM was best fit for this project through different comparisons and evaluations. The comparisons and evaluations however were subjective opinion and is the subject for further research to confirm the assumptions. Second research question: "Is it possible to use Business Model framework on the company like Vlastuin?" applied NEWGIBM framework on case company Vlastuin. One of the business cases has been chosen to evaluate further, manure transportation in particular, and business models following the NEWGIBM have been formulated, explaining the reasoning behind the made choices. The diagrams this business model was based on were generated with the help of Vlastuin, and can be considered as including both inside and outside take on the business cases processes. Application of the business model framework on Vlastuin business case presents feasibility of the business model concept in the empirical settings. Research question three finalized this research by addressing question: "How Vlastuin Business Model can be expressed in the graphical way?" with introduction of the graphical design and 3D representation of business model using 3D modeling software. Subject for future is research focusing on software development with possibility of real time data input and processing, together with a more user friendly interface for graphical editing.

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Appendix 1Business Model Components

Table 9 Perspective on Business Model Components (Morris, et al., 2005)

Source	Specific components	Number of components	E- commerce/G eneral	Emperical support (Y/N)	Nature of data
Horowitz (1996)	 Price Product Distribution Organizational characteristics Technology 	5	G	Ν	
Viscio and Pasternak (1996)	 Global core Governance Business units Services Linkages 	5	G	Ν	
Timmers (1998)	 Product/service/informat ion flow architecture Business actors and roles Actor benefits Revenue sources Marketing strategy 	5	E	Y	Detailed case studies
Markides (1999)	 Product innovation Customer relationship Infrastructure management Financial aspects 	4	G	Ν	
Donath (1999)	 Customer understanding Marketing tactics Corporate governance Intranet/extranet capabilities 	5	E	Ν	

Gordijn et al. (2001)	 Actors Market segments Value offering Value activity Stakeholder network Value interfaces Value ports Value exchanges 	8	E	Ν	
Linder and Cantrell (2001)	 Pricing model Revenue model Channel model Commerce process model Internet-enabled commerce relationship Organizational form Value proposition 	8	G	Y	70 interviews with CEOs
Chesbrough and Rosenbaum (200o)	 Value proposition Target markets Internal value chain structure Cost structure and profit model Value network Competitive strategy 	6	G	Y	35 case studies
Ganrtner (2003)	Market offering Competencies Core technology investments Bottom line	4	E	N	Consulting clients
Hamel (2001)	Core strategy Strategic resources Value network Customer interface	4	G	N	Consulting clients

Petrovic et al. (2001)	 Value model Resource model Production model Customer relations model Revenue model Capital model Market model 	7	E	Ν	
Dubosson-Torbay et al. (2001)	 Products Customer relationship Infrastructure and network of partners Financial aspects 	4	E	Y	Detailed case studies
Afuah and Tucci (2001)	 Customer value Scope Prices Revenue Connected activities Implementation Capabilities Sustainability 	8	E	Ν	
Weill and Vitale (2001)	 Strategic objectives Value proposition Revenue sources Success factors Channels Core competencies Customer segments IT infrastructure 	8	E	Y	Survey research
Applegate (2001)	ConceptCapabilitiesValue	3	G	Ν	

Amit and Zott (2001)	 Transaction content 	4	E	Y	59 case
	 Transaction structure 				studies
	 Transaction governance 				
Alt and Zimmerman	 Mission 	6	E	Ν	Literature
(2001)	 Structure 				synthesis
	 Processes 				
	 Revenues 				
	 Legalities 				
	 Technology 				
Rayport and Jaworski	 Value cluster 	4	E	Y	100 cases
(2001)	 Market space offering 				
	 Resource system 				
	 Financial model 				
Betz (2002)	 Resources 	4	G	N	
	 Sales 				
	 Profits 				
	 Capital 				

Appendix 2 Business Model Types

 Table 10 Sixteen Business Model Types (Richard, et al., 2006)

			What type of assets involved?			
			Financial	Physical	Intangible	Human
What rights are being sold?	Ownership of	Creator	Entrepreneur	Manufacturer	Inventor	Human Creator*
	asset	Distributor	Financial Trader	Wholesaler/Retailer	IP Trader	Human Distributor*
	Use of asset	Landlord	Financial Landlord	Physical Landlord	IP Landlord	Contractor
	Matching of buyer and seller	Broker	Financial Broker	Physical Broker	IP Broker	HR Broker

*These business models are illegal in most places today, as it involves selling human beings. They are included for logical completeness.

Appendix 3 Business Model Graphical Representation Design Business Model Graphical Representation Design





Vlastuin Manure Business Model Graphical Representation Design





Revenue – (AGR unit costs + manure administration costs) = profit

How do we make money and business value?

\$

57

Appendix 4 Manure Transportation Business Models

Business Model from Infrastructure Provider Perspective

Target customers and users

- Manure transporter
- Manure Administrator
- Authority
- Manure provider
- Manure receiver
- Laboratories

Value chain - primary and secondary functions

- <u>Inbound</u>
 - Data input from AGR Unit
 - o GPS data
 - o Administrative services to meet the requirements of the Fertilizer Law
- Operations
 - o GPS and sample barcodes are sent to the authority on loading
 - GPS and sample barcodes are sent to the authority on unloading
 - Administrator issues transportation ID
- Outbound
 - Website manure transporter gets verification of successful transmission to the authorities
 - Website laboratory results
- Marketing and sales
 - AGR Unit attaches servicing contract
- <u>Service</u>
 - o AGR unit updates
 - o Data backup

Competences

- Knowledge in manure regulations
- Data warehousing/processing
- Web development
- Mobile data communication

Network

- Authorities
- Manure administrator

• Laboratory

Relations

Refer to Appendix 5

Profit formula

Revenue – (AGR unit costs + manure administration costs) = profit

Business Model from Manure Transporter Perspective

Value proposition

- Manure transportation
- No hassle paperwork
- Network with manure providers/receivers

Target customers

- Manure provider
- Manure receiver
- Authorities

Value chain

- Inbound
 - Manure from manure providers
 - Data from infrastructure provider
 - Data from Administrator
- Operations
 - Obtain and deliver manure sample to laboratory
 - Manure transportation
 - Produce paper work for manure provider and receiver
- Outbound
 - o Manure trailer
 - Digital media for manure transportation documentation (email?)

Competences

- Network with manure providers receivers
- Knowledge in manure transportation regulations
- Equipment for manure transportation
- Manure paper work administration

Network

- Infrastructure provider
- Authorities
- Laboratory
- Manure receiver
- Manure provider
- Administrator

Relations

- Authorities
- Laboratory
- Infrastructure provider
- Administration
- Manure receiver
- Manure provider

Profit formula

Income – (Transportation costs + Infrastructure lease costs + administration costs) = profit



Appendix 5 Manure Transportation Relations