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Towards a Component-based Description of Business Models: A State-of-the-Art Analysis

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ABSTRACT

Since the mid-1990s, in the course of the raising commercial use of modern ICT and the transformation of traditional to digital business, the business model concept has emerged as a promising unit of analysis in business practice that has attracted increasing interest in research. To describe business models, they are usually broken down to single business model components. Unfortunately, no uniform framework of business model components has been established so far. Thus, this paper presents a comprehensive analysis of business model components proposed in literature as well as harmonizes and categorizes them by constructing an overall framework.

Keywords

Business Models, Business Model Components, Framework, Digital Economy, E-Business, State-of-the-Art, Literature Analysis.

INTRODUCTION

Since the mid-1990s, companies' business practices have significantly changed due to the raising commercial use of modern information and communication technologies (ICT) and the underlying Internet infrastructure (Ghaziani and Ventresca, 2005; Sampler, 1998). In the course of this, competitive situations have to be considered increasingly from a global perspective and far beyond traditional industry borders (Bieger and Krys, 2011). Since the latter one became even more and more blurred, the question "What business am I in?" cannot be answered in an easy way anymore (Slywotzky, 1996). Moreover, besides supporting businesses, ICT function frequently as an enabler for entirely new business activities. This led to the implementation of many innovative business ideas forming the "new digital competitive landscape" (Bettis and Hitt, 1995; Stähler, 2001). Even though many of these ventures have failed, others have significantly changed the business landscape (cf. Google and Facebook for two impressive examples).

Based on this shift in the competitive landscape, the question was often raised whether traditional units of analysis of the strategic management domain can adequately depict these changes as well as the competitive advantages of both traditional and digital companies (Sampler, 1998). In research, this question was regularly negated resulting in the search for a new unit of analysis (Bieger, Rüegg-Stürm and von Rohr, 2002). For more than a decade now, the business model concept has prevailed as an appropriate means of analysis; consequently, it has increasingly moved into the interest of scientific research, but also into business practice.

To describe business models, they are typically broken down to single business model components. Unfortunately, no uniform framework of business model components has been established so far (Bieger and Reinhold, 2011; Burkhart, Krumeich, Werth and Loos, 2011). Hence, there exists a huge dissent regarding the constitutive components of business models—even after more than ten years of research. However, a consensus is required for designing, describing and analyzing business models in a consistent way (Al-Debei and Avison, 2010).

Thus, this paper provides a comprehensive analysis on business model components proposed in literature. Further, it harmonizes the heterogeneous naming of components and categorizes them by constructing a broad and holistic framework. Finally, each component is briefly illustrated. Based on this framework, research for tackling further existing research gaps—especially concerning interdependencies between business model components (Burkhart et al., 2011)—can be conducted.

METHODOLOGY

In the first step towards analyzing business model components, a broad foundation of publications was built up. This had been achieved by performing a search on the literature databases EBSCO Business Source Premier, Thomson Reuters Web of Knowledge and Google Scholar using the search term “business model(s)”. Afterwards, literature mainly focusing on business model components and corresponding frameworks have been picked up and screened to find further promising literature in provided references. As a result, far more than 50 papers could be identified.

In order to consider the most relevant ones, the final selection met some criteria. In detail, the literature needs to be

- of high-quality, which was guaranteed by selecting only sources from highly-ranked (at least an “A” according to the Australian Research Council and/or an ISI impact factor > 1.5) journals and conferences;
- highly-considered among scientists reflected in the citation frequency on Google Scholar and Thomson Reuters Web of Knowledge.

However, with this technique some of the most current literature might not have been selected as it does not satisfy the “citation frequency” requirement. To overcome this concern, recent promising, but low-cited papers were manually selected. Furthermore, a small amount of publications from lower-ranked journals and conferences as well as not-ranked textbooks have been chosen, since they seem to represent promising frameworks and thus should be included in a comprehensive analysis. Finally, 34 relevant publications have been selected, of which more than a quarter was published within the last three years. Hence, progress in research within the last years is adequately covered.

To apply the proposed methodology, the remainder of this paper is organized as follows. Section 2 comprises a brief discussion on business model research regarding its origins and the actual definition of business models. Section 3 outlines the methodology for constructing the business model component framework and provides a concise analysis of it. Within section 4, the developed framework and its components are briefly illustrated. Finally, section 5 summarizes the paper and gives an outlook on future business model research.

DIGITAL ECONOMY AS THE TRIGGER FOR BUSINESS MODEL RESEARCH

In the mid-1990s, new economic and social situations, which had resulted from the development of modern ICT, caused a drastic change to the overall competitive situation of companies (Sampler, 1998). Even small Internet start-ups were quickly able to act globally and bring real competition to long-established companies. Hence, this shift in the competitive situation is often referred to as the “new digital competitive landscape” (Bettis and Hitt, 1995). Consequently, traditional units of analysis—like the resource or market based view—had been put into question, which led to the search for a new unit of analysis having the capabilities to depict the digital economy (Stähler, 2001).

Eventually, the business model concept has established as the new unit of analysis able to successfully describe the value creation—not only within the digital landscape (Amit and Zott, 2001). As a result, based on business model analyses, it is possible to determine why the competitive position of companies within the digital landscape has decreased and why they were successful at all (McGrath, 2010).

The Emergence of the Term „Business Model“

Terminological examinations of modeling and describing business activities commonly reference DRUCKER (1954). By using the term “logic of business” as early as 1954, he can be seen as a pioneer of business model research (Casadesus-Masanell and Ricart, 2010). A study by GHAZIANI AND VETRESCA (2005) yielded 1975 as the earliest appearance of the term “business model” within scientific papers’ abstracts. However, earlier academic publications using the term in the full text (Bellman, Clark, Craft, Malcolm and Ricciardi, 1957) or in the abstract as well as the title (Jones, 1960) can be identified.

GHAZIANI AND VETRESCA (2005) claim a semantic shift of the term “business model”. The two decades starting from the mid-1970s are characterized by placing the term within the field of business information systems, while the meaning evolved during the late 1990s towards the frames “Value Creation”, “Revenue Model”, “Electronic Commerce”, “Tactic Conception” and “Relationship Management”.

In accordance with the altered meaning, a significant increase in the term usage can be detected (Hedman and Kalling, 2003; Lambert, 2008). A cause can be found in the transition from classical business activities towards e-commerce. To emphasize this Internet orientation and distance digital companies from their conventional competitors, the term “business model” has often been used in a sensationalizing manner (Stähler, 2001). This consequently caused the term to become a buzzword of the Internet boom (Magretta, 2002), which could be spotted ubiquitously (Baden-Fuller and Morgan, 2010).

The hype that was triggered by the so-called dot.com-companies made them appear attractive for investors despite the absence of a particular strategy or even sustainable streams of income (Teece, 2010). The key of their temporary success was the existence of an internet-based business model of any kind (Magretta, 2002). EARLE AND KEEN (2000) phrase this phenomenon as follows: “For a while it looked as if just adding the .com suffix to your business name guaranteed that venture capital firms would rush in to throw investment capital at you.” The result of this short-sighted behavior—the bursting of the dot.com-bubble—is commonly known. However, the concept of business models is not to blame for this disaster of New Economy, but rather its wrongly conceived usage as a strategic unit of analysis (Magretta, 2002; Rappa, 2004).

Since research is often motivated by a lack of knowledge (Bunge, 1967), science picked up on the question whether traditional analysis units were still adequate. In doing so, the research area of business models has been established. To document the increasing importance over time, several authors have chosen the method of querying scientific databases with the term “business model” and analyzing the results. The literature analysis of BURKHART ET AL. (2011) is referred to as a current study in this field.

Considering Business Model Definitions

The frequently quoted statement by PORTER (2001)—“The definition of business model is murky at best”—remains intact to the present day. Despite a multitude of definitions in literature, no consensus can be attested. To the contrary, there are substantial discussions regarding the existent terminological dissent (Al-Debei and Avison, 2010; Zott, Amit and Massa, 2010). This issue can be attributed to several causes. BIEGER AND REINHOLD (2011) identified three main reasons. First of all, the term emerged in several scientific disciplines concurrently. Secondly, the concept employs diverse theories. Thirdly, starting with the “New Economy”, business models are a rather new field of research. This last point is emphasized by ZOTT ET AL. (2011), who believe that any new and promising concept will be subject to definitional and conceptual discrepancies during its emergent phase.

Induced by the heterogeneous original disciplines, the concept pursues different objectives. Consequently, this leads to different definitions (cf. in the following (Zott et al., 2010)). From a business information systems perspective, business models are utilized to explain the meaning of e-business as well as the employment of information and communication systems. Another reason for the fuzzy comprehension of the term is the lack of explicit definitions within publications in this area, which implicitly assume a common understanding of the term. The number of such publications is estimated to be more than one third. A reference to previous definitions is also missing in most cases. ZOTT ET AL. (2010) identified this approach in only 20 % of the considered literature.

Apart from explicit textual definitions, the concept of business models is frequently also defined by its constituent components of which a wide variety is discussed in literature (Onetti, Zucchella, Jones and McDougall-Covin, 2010). However, no consistent descriptive pattern with dimensions has become prevalent (Bieger and Reinhold, 2011). Consequently, no consensus about the constituent components of a business model exists in the current research environment (Burkhart et al., 2011), which leads to the need for a unified business model component framework, based on which business models can be described, analyzed and compared in a consistent manner. Thus, this paper tackles this research gap by proposing a unified component framework, which aims at capturing as many components of business models discussed in literature as possible.

TOWARDS THE DEVELOPEMENT OF A BUSINESS MODEL COMPONENT FRAMEWORK

Methodology

Figure 1 depicts the methodology for constructing the business model component framework.

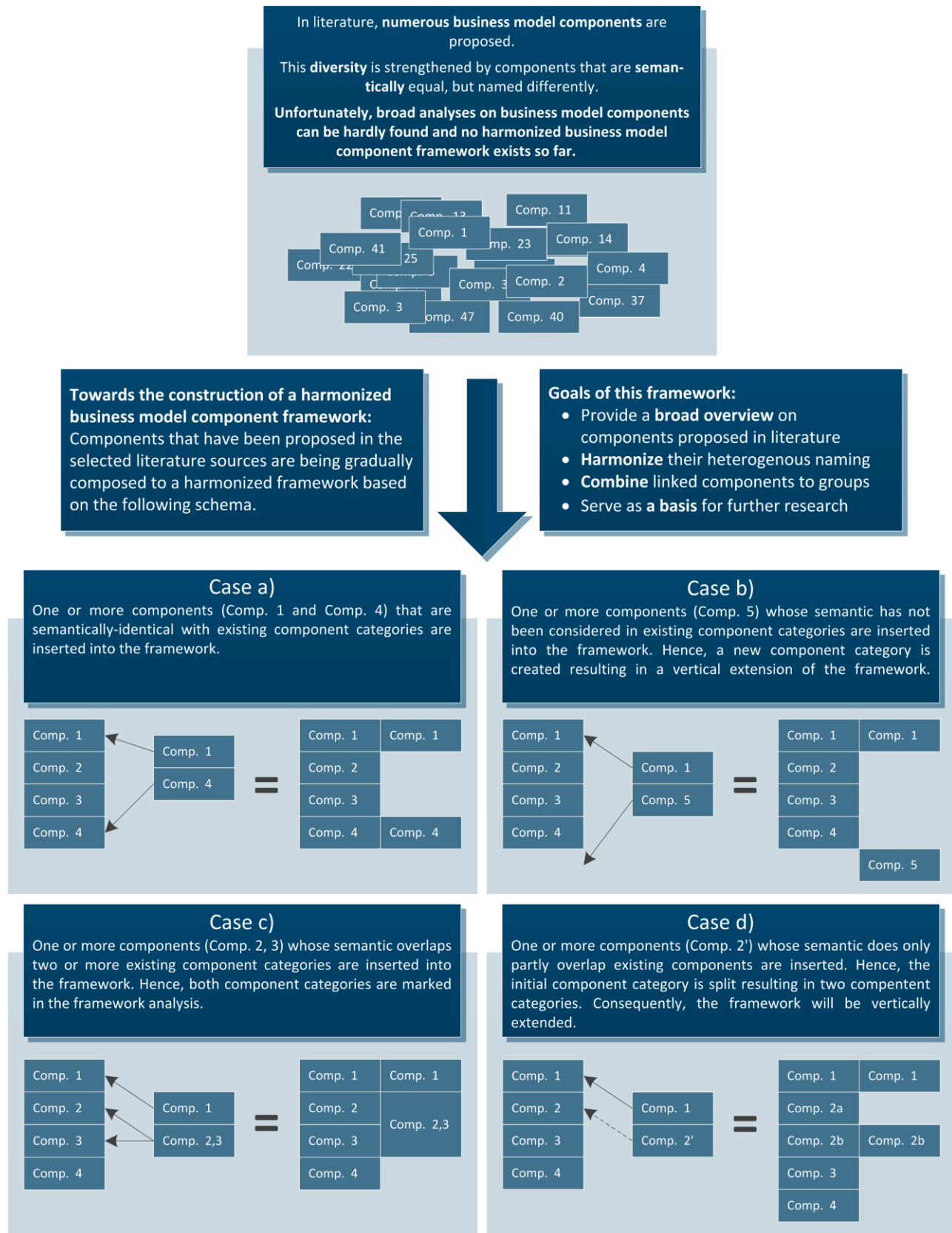


Figure 1. Methodology to Develop a Business Model Component Framework

Framework Classification and Analysis

As a result of classifying all components proposed in the 34 selected literature sources, the final framework consists of 20 components. These components have been grouped to five categories, all of which include semantically-linked components: Value Offering Model, Value Capturing Model, Value Creation Model, Cooperation Model and Financial Model.

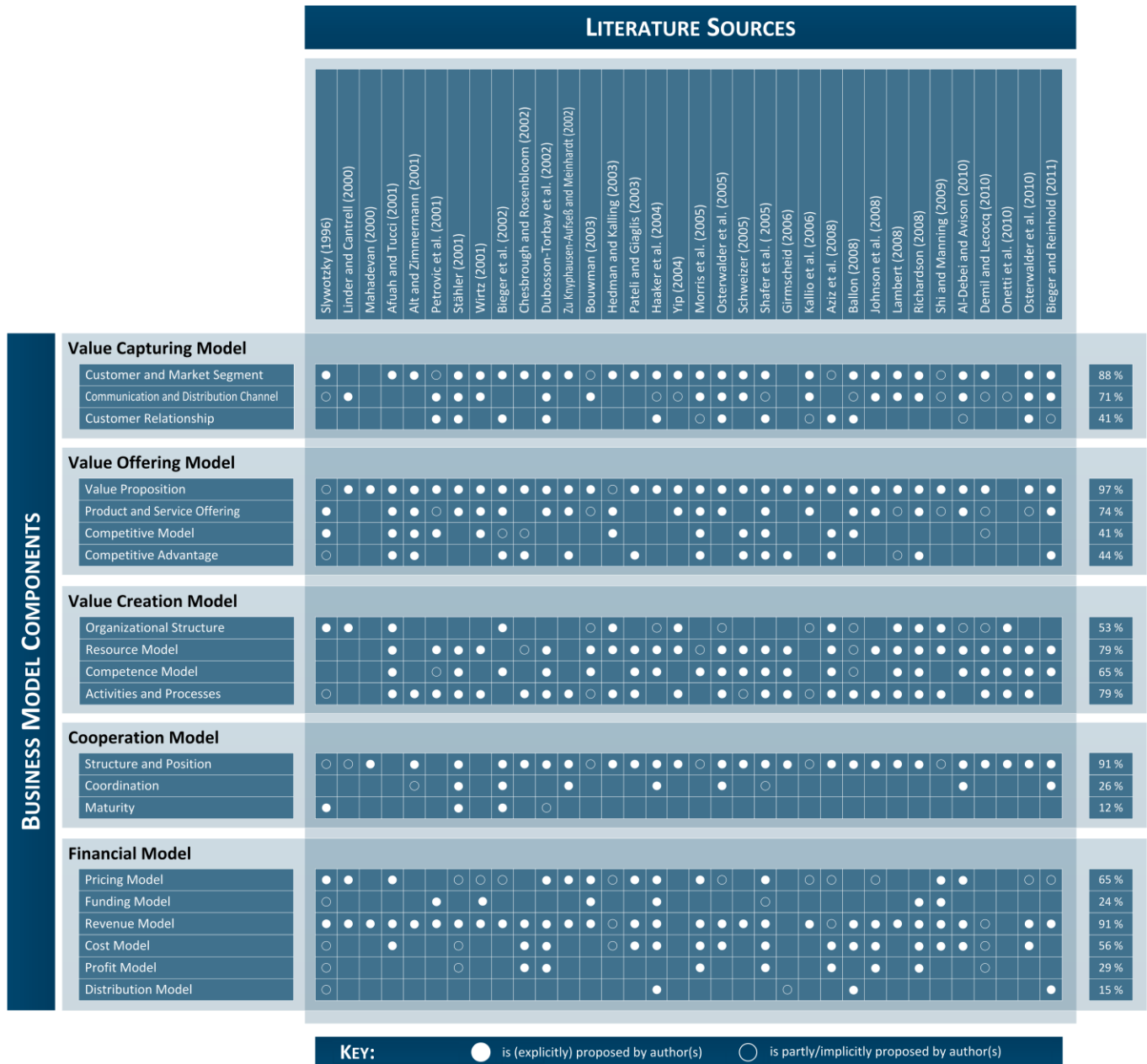


Figure 2. Business Model Component Analysis

An analysis of the framework (cf. Figure 2) reveals a heterogeneous distribution of the component's occurrence frequencies. On average, regardless of Figure 2, each literature source proposes six business model components—with a minimum number of three and a maximum number of twenty (since Figure 2 provides a harmonized view on all considered components, their initial naming as well as the actual amount of components in each source is not visible).

In more than 88 % of the analyzed literature sources, the components Value Proposition, Customer and Market Segment, Structure and Position and Revenue Model can be found; consequently, they build the foundation of the business model component framework. This is underlined since they are the key components within four of the five component categories.

Even though the Value Creation Model does not consist of a component with an occurrence rate greater than 88 %, two out of its four components have been proposed by almost 80 % of the selected literature sources.

The components Product and Service Offering, Communication and Distribution Channel, Organizational Structure, Competence Model, Pricing Model and Cost Model are considered in more than 50 % of the chosen literature sources. The remaining eight components are only occasionally proposed in literature. Thus, they rather serve for further detailing the framework.

BUSINESS MODEL COMPONENT FRAMEWORK

Figure 3 shows the developed business model component framework. Within the following subsections, each component will be illustrated in a concise manner.

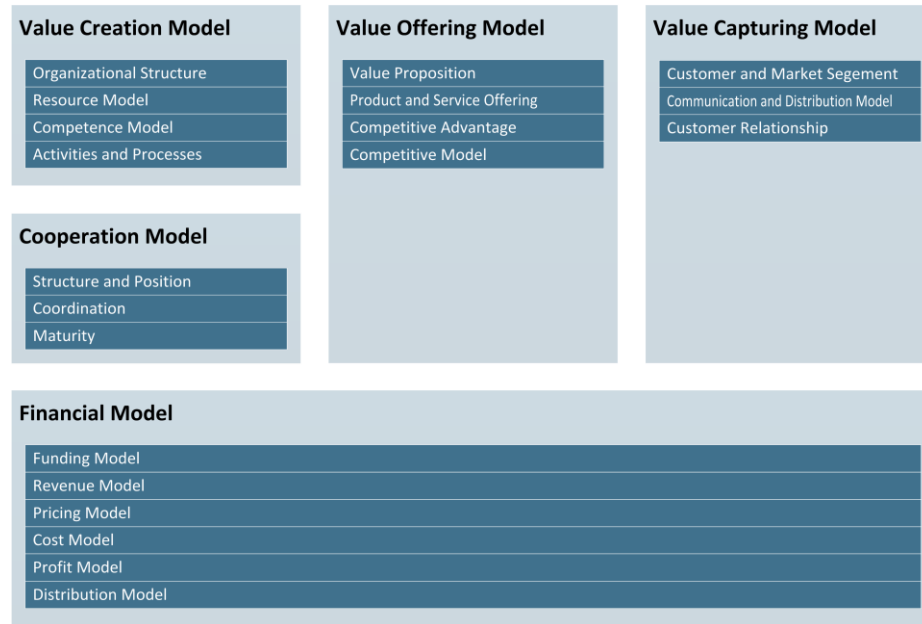


Figure 3. Business Model Component Framework

Value Offering Model

Components belonging to the Value Offering Model are strongly connected with each other. As a result, several literature sources put some of them together to a single component. In particular, the Product and Service Offering is often considered as part of the Value Proposition. Nevertheless, since they are strongly linked, but still distinct components, the framework developed in this article breaks down the components as much as possible in order to draw a clear picture on existing business model components.

Value Proposition

The Value Proposition is considered to be the key component of business models. Several literature sources express this central role by recommending to start a business model development based on this component (Chesbrough and Rosenbloom, 2002; Johnson, Christensen and Kagermann, 2008). In this regard, the Value Proposition describes which benefits business models provide their customers—of course, this need not be equal to the benefits customers will actually receive. In addition, the Value Proposition not only expresses the benefits customers will receive, but also the value-adding partners participating in the business model (Stähler, 2001).

Product and Service Offering

As mentioned, the Product and Service Offering is closely intertwined with the Value Proposition, since it expresses which product and service offering actually realizes the Value Proposition (Afuah and Tucci, 2003). The fact that companies can achieve the same Value Proposition by offering different products and services demonstrates the strong linkage of both components (cf. JOHNSON ET AL. (2008) for an illustrative example on its differentiation).

Competitive Advantage

Besides specifying a Value Proposition and its realizing Product and Service Offering, the long-term sustainability, i.e. the Competitive Advantage, of a business model's value offering has to be assured. Hence, this component serves for formulating to what extent a business model is different—from a positive point of view—to competing ones (Slywotzky, 1996) and how its competitive advantage will be maintained (Afuah and Tucci, 2003). Moreover, strategic growth decisions—as future directions of the business model in contrast to its current operation based on the Value Capturing Model—should be captured within this component, i.e. for instance whether a company should rather continue to grow in its current market or whether it should enter new market places (Bieger et al., 2002).

Competitive Model

In order to identify a business model's competitive advantage and to derive actions how to maintain it, the Competitive Model depicts the competitive environment of a business model (Wirtz, 2001). Thus, the Competitive Model reflects competing business models and highlights potential risks for the own business model.

Value Capturing Model

The Value Capturing Model is closely related to the Value Offering Model, since it determines which customer and market segments are being addressed, on which ways and how these relationships are organized.

Customer and Market Segment

In order to successfully implement the Value Offering Model, it must be adapted to its targeted customer and market segments. In this context, customer and market segments can be differentiated by a variety of criteria. The stronger the segmentation, the stronger a business model addresses niche markets instead of mass markets (Osterwalder and Pigneur, 2010). Modern ICT pave the way towards a goal-oriented and detailed clustering of both customers and markets. However, since they also facilitate a business model's geographic expansion—even for small companies—, differentiating customers and markets is becoming increasingly vital for business model's success (Dubosson-Torbay, Osterwalder and Pigneur, 2002).

Communication and Distribution Channel

Besides specifying the Customer and Market Segment, choosing appropriate channels to distribute and communicate with them is critical for success (Al-Debei and Avison, 2010). Channels can be distinguished in own and partner channels, both of which can be further differentiated in direct and indirect channels (Osterwalder and Pigneur, 2010). Modern ICT enable a communicative integration of customers into the value creation process aiming at developing the Value Proposition in accordance to segment or even customer-specific needs (Bieger and Reinhold, 2011).

Customer Relationship

Even though Customer Relationship is an essential component for business models, it is only less considered in literature (cf. DUBOSSON-TORBAY ET AL. (2002) and the occurrence frequency of 41 %). The importance of (long-lasting) customer relationships results in high costs occurring from one-off transactions. Hence, customer relationships should be formed adequately considering the Customer and Market Segment. This will induce new customers, maintain existing ones and increase their share of wallet. In doing so, the classification of customer relationships can range from self-services to co-creation (Osterwalder and Pigneur, 2010). The latter one reflects the growing direct involvement of customers into the development and decision-making process for creating the Value Proposition, which can be improved by using modern ICT (Dubosson-Torbay et al., 2002).

Value Creation Model

While the Value Offering Model and Value Capturing Model describe which values are distributed and to whom, the Value Creation Model describes aspects regarding the actual value creation within companies.

Resource Model

To operate a business model, companies need to have certain resources (Osterwalder and Pigneur, 2010) that can be distinguished (Afuah and Tucci, 2003; Grant, 2010) into tangible, intangible and human resources. All of them can either be created in-house or sourced from external partners (Lambert, 2008). Hence, resources have the characteristics of being tradable and not company-specific (Bieger and Reinhold, 2011).

Competence Model

However, resources are not sufficient to create value in terms of the Value Proposition (Afuah and Tucci, 2003; Grant, 2010). Thus, it is vital to have abilities enabling the usage of resources as well as their transformation to new combinations of resources which are—according to the concept of core competencies—rare, valuable, costly to imitate and non-substitutable (Afuah and Tucci, 2003; Ballon, 2007). These abilities are referred to as competencies and contribute significantly to a business model's success. In contrast to resources, competencies are both non-tradable and company-specific.

Activities and Processes

As mentioned, to successfully implement business models, competencies are needed to carry out activities and processes that finally culminate in the provision of the Value Proposition (Lambert, 2008; Osterwalder and Pigneur, 2010). Hence, companies have to determine how to create the Value Proposition by answering two questions: which are the key activities and processes that have to be done internally and which ones by cooperating partners. In literature, four major types are distinguished (Bieger and Reinhold, 2011): Layer Player, companies covering one specific value creation stage for several value chains; Integrators, companies covering every stage within a value chain; Market Maker, companies mediating between different value adding processes; and Orchestrators, companies covering large parts of the value creation, but outsource specific parts to partners.

Organizational Structure

The component Organizational Structure is used to define a business model's roles and responsibilities (Shi and Manning, 2009; Stähler, 2001) for allowing a goal-oriented implementation of the Activities and Processes as well as their underlying Resource Model and Competence Model (Afuah and Tucci, 2003). In doing so, it is crucial to determine the adaptability of a company's organizational structure in order to react dynamically to changes in its environment (Shi and Manning, 2009). Hence, the Organizational Structure is important and has to be aligned with the overall business model (Slywotzky, 1996).

Cooperation Model

Besides considering the value creation within a company, the network of cooperation outlined by the Cooperation Model has to be addressed in a business model.

Structure and Position

Business models are often enabled by corporative relationships (Osterwalder and Pigneur, 2010), in which external economic parties take over parts of the value creation in order to cooperatively provide the Value Proposition (Stähler, 2001). Consequently, building cooperation networks pursues the goal to optimize a business model and finally its Value Proposition (Dubosson-Torbay et al., 2002; Osterwalder and Pigneur, 2010). This is achieved by focusing on activities that can be done with internal resources and core-competencies, while sourcing other parts out to partners. It is of strategic importance to determine whether a business model should focus on many smaller or rather less, but strong cooperation partners (high transaction costs vs. risk of a dominating partner) (Bieger et al., 2002). Hence, while the Value Creation Model—based on the Resource/Competence Model as well as the Activities and Process component—depicts which resources and processes are internally and externally provided to successfully operate a business model, the Structure and Position component strongly focuses on the external partners providing these aforementioned aspects, how they are interrelated to fulfill the business model's goal as well as which is the focal company's position within this network of partners.

Coordination

In order to successfully operate the Cooperation Model, appropriate communication channels and coordination mechanisms need to be defined as well as rules of the partnerships to be negotiated (Stähler, 2001). In the course of this, it is important not to generate exuberant transaction costs (Bieger et al., 2002). Coordination concepts can reach from using pure market forces on the basis of individual transactions, to implicit and explicit cooperation agreements, and finally to the establishment of coordination hierarchies or even the fusion of companies (Bieger and Reinhold, 2011; Bieger et al., 2002).

Maturity

Operating a Cooperation Model is accompanied by a certain maturity of its cooperation relationships. Since it is strategically important to determine the maturity, this aspect is concentrated in a separate component. It must therefore be outlined, if the cooperation is established on a strong, long-term basis aiming to increase its efficiency based on the usage of joined standards or on a dynamic basis, but with less risk of being dependent on partners (Bieger et al., 2002; Slywotzky, 1996; Stähler, 2001).

Financial Model

Financial-based components play a central role in business models because they determine whether a business model is reasonable from an economic point of view.

Funding Model

The Funding Model provides information on the sources from which a company receives capital to operate its business model (Wirtz, 2001). In the course of this, the choice of a company's legal form can already have strong impact on its funding possibilities. This is particularly important during the start-up phase, since initial operating cash flow might not be sufficient to fully operate the business model.

Revenue Model

The existence of a profit-yielding revenue structure is important for a business model's success, since costs resulting from creating and offering the Value Proposition need to be overcompensated (Stähler, 2001). A poor design or even the lack of a revenue structure was the main reason why many start-ups had failed in the New Economy (Alt and Zimmermann, 2001). Ideally, a network of revenues exists. This should be optimized depending on the targeted market, since this determines whether the price or the volume of the Value Proposition needs a stronger consideration (mass market vs. niche market).

Pricing Model

Additionally, the pricing of the Product and Service Offering is essential for a business model's financial success (Afuah and Tucci, 2003; Linder and Cantrell, 2000). In order to gain maximum profits contributing to the sustainability of business models, the pricing must be optimized from two points of views. While the sales volume must not suffer from an unacceptable price, a price arbitrage must not be wasted without resulting in an increase of sales volume (Aziz, Fitzsimmons and Douglas, 2008; Dubosson-Torbay et al., 2002). Based on modern ICT, novel and more focused pricing mechanisms can be realized (Dubosson-Torbay et al., 2002).

Cost Model

The Revenue Model and Pricing Model are not the only components which need to be determined to achieve a financially successful business model; the other side of the coin—in form of the Cost Model—does also have to be considered. This component should reveal the major cost-incurring activities of a business model with the overall goal to minimize the costs in achieving the Value Proposition. However, the minimization varies extremely on the Value Proposition's chosen strategy (cf. OSTERWALDER AND PIGNEUR (2010) for cost-driven vs. value driven strategy) (Afuah and Tucci, 2003).

Profit Model

Based on the previous components, a business model's margin structure can be derived that outlines the financial value for its owners. Based on determining a desired profit, the resulting margin, which is needed for each transaction within a business model, can be derived (Johnson et al., 2008).

Distribution Model

Due to the raising number of cooperation relationships in the course of the Digital Economy, the Distribution Model of a business model becomes increasingly important. This component indicates how all investments, costs and revenues are shared among participants in order to assure the sustainable financing of the cooperative value creation (Ballon, 2007; Slywotzky, 1996). Based on the former mobile service platform i-mode, the importance of a sophisticated Distribution Model is outlined by LINDMARK ET AL. (2004). Another good example is the one of Apple's Distribution Model, in particular regarding how revenues are shared among Apple and developers of mobile applications (Ballon, 2007).

CONCLUSION AND OUTLOOK

Since the mid-1990s, in the course of the raising commercial use of modern ICT and the transformation of traditional to digital business, the business model concept emerged as a promising unit of analysis in business practice that has attracted increasing interest in research. To describe business models, they are typically broken down to single business model components. Unfortunately, no uniform framework of business model components has been established so far (Bieger and Reinhold, 2011; Burkhart et al., 2011). Thus, this paper provides a comprehensive analysis of business model components, harmonizes and categorizes them by constructing an overall framework, based on which business models can be consistently

designed, described and analyzed. Since this paper is basically the first approach in doing so, it shall also serve to the business model research community as a basis for discussions helping to further refine the framework. The future goal is to establish the framework as a common, solid foundation in research and practical usage of the business model concept.

Hence, further research to tackle existing business model research gaps can be conducted based on it. One major gap lies in the insufficient knowledge on interdependencies between business model components (Burkhart et al., 2011). Obviously, to tackle this gap a harmonized framework of components is needed based on which interdependencies can be depicted. Thus, based on the framework presented in this paper, the authors are working on deriving interdependencies.



Figure 4. Business Model Wizard

Furthermore, since the presented framework is generally applicable and does not focus on a specific industry, it can be the basis for developing industry-specific frameworks that put more emphasis on components that are particular important for a chosen industry. Hence, the authors are also working on specializing the general framework in order to address the particularities of the software industry. To allow an easy design of business models, a business model wizard—serving as a computer-based modeling tool—is also currently under development (cf. Figure 4).

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