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Patterns in Business Models: a Case Survey

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Abstract

The competitive nature of markets changes continuously and with increasing speed requiring systematic strategic planning and progressive advancement to ensure long-term success. In the special case of start-ups, entrepreneurs face the unique task of having to design a strategy from scratch to translate their business idea into practice. The business model – as a unifying analysis approach which depicts the design of transaction content, structure, and governance – is of special importance to a start-up's success because it focuses on value and especially the networked value constellation and thus provides the basis for systematic strategic planning. Business models are not static: Design choices that appear to be fixed when a product or service concept is initially developed often need to be adapted after launch and exposure to market. While the need for business model reinvention is well known, there is a tendency in literature towards examining business models at a single moment in time while disregarding analysis of the business model's development over time. By using a case survey approach with fifty longitudinal case descriptions we are analyzing patterns in business models to show in which stages of the business model life cycle there are similarities and differences between ventures of different industries, size and growth aspiration with regard to the business model components transaction content, structure and governance. The analysis uncovers a number of patterns common to the venture projects under examination. These appear in two forms: patterns of development and patterns of structure.

Keywords: business model, case survey, entrepreneurship, pattern recognition, value creation

1 Introduction

Not all entrepreneurial activity similarly contributes to economic growth.¹ Specifically, the importance of high-growth entrepreneurial activity for job creation is increasingly emphasized. All entrepreneurial activity is important, but high-growth entrepreneurial activity is particularly so. It is remarkable how concentrated the job creation potential is. Even though early-stage entrepreneurs² expecting more than 100 jobs represented less than 2% of all start-ups, they expected to create nearly half of the total jobs. Start-up attempts expecting 50 or more jobs represented nearly 60% of total expected jobs. A well-defined business model which enables systematic strategic planning to ensure long-term success (Wickham 2006) and focuses on the networked value constellation (Tapscott, Ticoll & Lowy 2000) builds often the basis for this success.

The term business model currently is in wide general use; at the same time the concept is only rarely studied systematically in the business literature (Morris et al., 2005). While the concept as such has become quite fashionable, there is still much confusion about what a business model exactly is and what it is useful for. While other authors have recently offered definitions of the term, none appear to be generally accepted. This lack of consensus may in part be attributed to interest in the concept from a wide range of disciplines, all of which have arrived at a different – mostly industry-specific – understanding (e.g. Rajala & Westerlund, 2008).

A business model is not static but existing research work on defining structured methodological approaches for business model evaluation is rather fragmented. Most efforts are applicable only under certain business conditions, they are typically dependent on the codification used for business model components which lacks the potential for generalization, and mostly provide a general framework rather than a stepwise approach that can guide the business model evaluation process. This paper aims to fill this gap by proposing a stepwise methodology allowing for pattern analysis and thus the design of alternative evolution paths for business model development. One important goal is to identify those patterns specific to ventures with high growth expectations, since this has important implications for pro-active business model design, funding and start-up support programs.

As a contribution towards developing such an analysis this paper:

- examines the value creation sources and the business model concept with regard to entrepreneurship and proposes a comprehensive definition;

1 As the GEM we define entrepreneurship as any attempt by individuals to start a new firm, including any attempt for self-employment.

2 A conclusive, comprehensive, and generally accepted definition of the term "entrepreneur" does not exist to date. The approaches to some definitions have previously been enlarged through various research of different authors and contain - among economic - psychological, sociological and anthropological elements as well. The term entrepreneur is used in this paper according to Timmons and Spinelli (2003): An entrepreneur is someone who goes through the process of creating or seizing an opportunity and pursuing it regardless of the resources currently controlled. The entrepreneur will be viewed in this thesis as gender-neutral. Every fundamental consideration also holds for a team of entrepreneurs which however is not examined further in this paper.

- conducts a case survey on 50 existing longitudinal case descriptions by using - the Business Model Dynamics Framework (BMDF) - a multi-method approach for business model design and analysis; and
- analyses in which stages of the business model life cycle there are similarities and differences between ventures of different industries, size and growth aspiration with regard to the business model components transaction content, structure and governance.

This objectives are reflected in the paper structure. We begin the paper with a concise overview of business model literature and research on business model evolution. This will be followed by the introduction to our research model in section 3. Section 4 details our methodology, and section 5 reports on results. Limitations are given in section 6, and section 7 subsumes our conclusions and further research.

2 Literature review

2.1 What is a business model?

The term 'business model' is a popular yet little-understood buzzword (Magretta 2002; Porter 2001). Business models as a concept are regarded as important in both research and application, but still lack a uniform definition or taxonomy (Lambert 2006; Magretta 2002; Osterwalder 2004; Pateli & Giaglis 2002; Pateli & Giaglis 2004; Timmers 1998). This holds especially for applications in entrepreneurship. The research focus has been on defining business models and identifying the elements of business models (Osterwalder, Pigneur & Tucci 2005; Pateli & Giaglis 2002; Pateli & Giaglis 2004). Consequently, what has emerged is an array of conceptualizations of business models that have been conceived from differentiated views of the problem domain and that are rarely grounded in existing theory (Hedman & Kalling 2003; Porter 2001).

Some definitions are quite abstract and business network focussing (Hamel 2000; Hawkins 2002; Timmers 1998; Weill & Vitale 2001) whilst others are detailed and encompassing of all business functions (Chesbrough & Rosenbloom 2002; Dubosson-Torbay, Osterwalder & Pigneur 2002; Mahadevan 2000). One explanation for this is that the definitions and the attributes of the business model are established according to the business model's intended use. Some researchers require the business model to form the basis of enterprise models and therefore include the internal workings of the organization whereas others require the business model to focus on the relationships with external entities within their domain (Lambert 2003).

In accordance with Patelli and Giaglis (2004) the existing business model literature can be classified into the following eight research sub-domains:

- Definition: Research in this sub-domain concerns defining the purpose, scope, and primary elements of a BM.
- Components: Research in this domain is concerned with analyzing the BM concept to further decompose it into its fundamental constructs.

- Taxonomies: Research in this domain relates to possible categorizations of BMs into a number of typologies based on various criteria.
- Conceptual models: Research focuses on identifying and describing the relationship between these elements in an abstract but rational way.
- Design methods: This domain proposes possible instruments or representational formalisms for visualizing the components of a BM and their interrelationships.
- Adoption factors: It involves research on factors that affect the organizational adoption of business models, as well as research on socio-economic implications of BM innovation.
- Change Methodologies: This domain includes research efforts that focus on formulating guidelines, describing steps, and specifying actions to be taken for changing business models.
- Evaluation Models: This domain is concerned with identifying criteria for either assessing the feasibility and profitability of business models or assessing a business model against alternative or best practice cases.

There is no work that manages to synthesize all sub-domains into a thorough and comprehensive analysis of business models.

This lack of direction and focus in research can be traced to three types of challenge: conceptual, theoretical, and empirical. Conceptually, the business model is of fairly recent origin, popularized during the dot-com boom. As a result there is neither an agreed definition nor a generally accepted framework for capturing a given model. Further, the theoretical foundation for the design and application of business models remains unclear. No single theory captures the varied elements that contribute to a model. Together, these conceptual and theoretical limitations have until now prevented proper empirical work. Specifically, without the ability to describe and quantify a business model, fundamental insights remain elusive – be they the identification of generic business models, the relative importance of model components, the interaction of components, or the dynamics of model evolution.

2.1.1 Theoretical underpinnings of business models

As mentioned issues of theory represent an area receiving until now scant attention. A notable exception can be found in Amit and Zott (2001), who approach the business model construct as a unifying unit of analysis that captures value creation arising from multiple sources as well as Morris et al. (2005), who proposed a three-level framework based on a fundamental analysis. Both argue for a cross-theoretical perspective, concluding that no single theory can fully explain the value creation potential of a venture.

The business model construct builds upon central ideas in business strategy and its associated theoretical traditions. Most directly it builds upon the value chain concept and the extended notions of value systems and strategic positioning (Porter 1985; Porter 1996). In the same way it draws on resource-based theory (Barney, Wright & Ketchen Jr 2001). In terms of the firm's fit within the larger value creation network, the model relates to strategic network theory (Jarillo 1995) and cooperative strategies (Dyer &

Singh 1998). Further, the model involves choices (e. g. vertical integration, competitive strategy) about firm boundaries (Barney 1999) and relates to transaction cost economics (Williamson 1981).

2.2 The BMDF approach

In our view, business models are an abstraction of how organizations create value. The business model construct acts as a unifying unit of analysis that captures value creation arising from multiple sources.

The business model depicts the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities.

Transaction content refers to the goods or information being exchanged and to the resources and capabilities that are required to enable the exchange. Transaction structure refers to the parties that participate in the exchange and the ways in which these parties are linked. Transaction structure also includes the order in which exchanges take place and the adopted exchange mechanism for enabling transactions. The choice of transaction structure influences the flexibility, adaptability, and scalability of the actual transaction. Finally, transaction governance refers to the ways in which flows of information, resources, and goods are controlled by the relevant parties.

2.3 Business model evolution

With a few exceptions (Andries, et al., 2006, MacInnes, 2005, Vaccaro and Cohn, 2004), most literature has taken a static perspective on business models, implicitly assuming them to remain stable over time. However, in reality organizations often have to reinvent their business model continuously to keep aligned with fast-changing environments in some sectors (Afuah and Tucci, 2003). As a result, business models have to be balanced during all phases from development to exploitation. Instantiations of business model dynamics may be found in any component of the business model, such as redefining or extending the service concept, adding or removing partners from the value network, replacing technologies, or adapting financial arrangements.

The business model is not static. Start-ups as well as existing businesses must revise their business model over time to keep up i.e. with changing technology, market and regulatory conditions. Design choices that appear to be fixed when a product or service concept is initially developed often need to be adapted after launch and for market exposure. The same holds for fast growing start-ups which need to adapt their business model to new circumstances. While researchers do not necessarily always use the same terms to denote the transition from a current to a future business model, relevant approaches can be found under terms such as business model 'transformation', 'augmentation', 'extension', and 'evolution' (Pateli 2002). While the need for business model reinvention is well known (Andries, Debackere & Looby 2006; MacInnes 2005; Osterwalder 2004), there is a tendency in the literature towards examining business models at a single moment in time – mostly ex-post at the finished stage – while disregarding analysis of the business model's development and its specifics. In other words, the existing literature concentrates on describing the static constructs of a

business model instead of depicting the dynamic nature and evolution of a business model.

2.3.1 Business model life cycle

In the end, the starting point for every start-up is a convincing business idea. The development process from business idea to established business can be divided in different phases. Phasing models help to understand the evolution of the competitive landscape following an innovation or change, as well as the impact of an innovation or change on firm strategies and business models. These phases are conceptualized in several disciplines. We have shortly examined phasing from four perspectives: technical service development, entrepreneurial and business planning, innovation adoption and diffusion, and marketing respectively. When we compare the phases as distinguished in these perspectives, one can broadly speak from three main phases: opportunity recognition phase, the venture creation phase, and the market phase consisting of the sub phases market offering, maturity, and decline. These three main phases will be the basis for our case study analysis.

In the opportunity recognition phase the entrepreneur typically focuses on technology, investments, and the development of service concepts. The shift from the first to the second phase is characterized by testing of service concepts, field experiments, first introduction and small scale roll-out of services. The service, its business model, and its supporting technology are mostly not yet totally developed and still open to changes and reconfiguration. Besides, there may be a possible shifts, which may have implications for involved partners. The shift from the second to the third phase is characterized by a shift to commercial exploitation, after market experiments proved to be successful. The the third phase company to find customers, become profitable, and get the next version of the offering to market. Because different actors, resources and capabilities are needed in each of these phases, the components of the business models are subject to change.

Important critics are that in reality phases aren't fixed. Instead, there is variability in shape and duration. Besides, life cycles need not to be linear and sequential in practice. Having a non sequential, iterative view instead of a linear view of life cycles may prove to be valuable: by versioning or repositioning products or services, the actual life time of the business model can be extended.

3 Research Model

Because there are very few studies on business model development, we cannot rely on existing approaches, models or hypotheses. As the business model life cycle introduced above explicitly proposes links between each phase and has not yet been tested with quantitative data, it is usable for our research purposes.

We outline the following hypotheses:

H1: There are common patterns to high-expectation enterprises which differentiates them towards normal enterprises (structure).

H2: There are common patterns across industries (structure).

H3: There are common patterns across business model life cycle stages (development).

4 Research design and approach

As Yin and Heald (1975) argue, case surveys are particularly suitable when a heterogeneous collection of case studies does exist and researchers are interested in their characteristics rather than the conclusion of the authors. It is an approach that combines the advantages of survey research, i.e., dealing with a large number of observations based on individual depth, and qualitative cases. Case surveys allow for quantitative analyses and statistical generalization, while capitalizing on the richness of case material (Larsson, 1993).

4.1 Case selection

We selected 50 case descriptions involving the business model studies from existing companies, as well as written project reports from start-ups in spin-off support programs at our university (see tab. 1). These ventures are from all industry sectors and involve cases from 1998 to 2009. For each company one reference model and between one and three business model development snapshots were designed emerging patterns analyzed. To deal with the heterogeneity we encountered in the cases, we decided to look at each combination of business models separately, which resulted in 135 units of analysis.

Variable	Category	Number of cases
Industry sector	Technology	14
	Retail	9
	Medical	5
	Finance	2
	Information	4
	Entertainment	6
	Education	2
	Logistics / Transportation	5
	Energy	2
	Advertisement	1
Company age	Start-up	23
	Established	27
Growth	Normal	16

	High-expectation ³	34
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Table 1: Case characteristics

4.2 Business Model Dynamics Framework

To structure the information gained from the case studies and project reports we use the Business Model Dynamics Framework (BMDF). This framework is a multi-method approach to business model design which utilizes object-oriented and system dynamics analysis and was developed for application in our daily work with start-ups as well as in research projects concerned with business model design. It is based on a systematic review of the sources of value creation in the entrepreneurship and strategic management literature: specifically, how value creation is handled in the views of the value chain framework (Porter, 1985), Schumpeter's theory of creative destruction (Schumpeter, 1936), the resource-based view of the firm (e. g. Barney, 1991; Barney, 2001), the strategic network theory (e. g. Dyer and Singh, 1998) and transaction costs economics (Williamson, 1975). Elements of the BMDF are a visualization method, a manual explaining the approach, a set of guidelines for application and analysis, and interfaces to conventional planning tools and the business plan. We are using the visualization method of the BMDF because graphs are a suitable formalization, since they can capture both: structure and behavior, and also allow abstractions such as patterns to be related to architectures.

Analyzing the case study data we first looked at the reference business model in the venture creation phase. We use the following sequence for each reference business model:

1. *Actor identification:* An actor is an independent economic (and often also legal) entity. The first actor is the venture itself. The venture itself is represented by its core competencies. Next are suppliers, customers, and consumers. It is important to distinguish between customers and consumers, and this for several reasons: First, the business opportunity may only be visible in the business model if the consumer, not just the customer, is taken into account. Second, a firm often has direct contact only to its customers, while the actual consumers are excluded from direct contact. This can lead to misunderstandings regarding customer and consumer preferences about the value proposition of the product or service. Third, while frequently a customer might simply exchange a product for money, there are many cases where the connections are more complex and involve a network of multiple actors connected in a non-linear way. All actors are modeled as a combination of *entity* and *role*. Actor entities can be single persons, other companies or organizations, or collections of these. Single entities can play multiple roles.
2. *Defining relationships:* Actors are the main providers and controllers of resources. We model these relationships in two forms: *flows* and *influences*. Flows depict the transfer of a good, service, information, attention, or money from one actor to another. These relationships between actors in the business model determine relative positioning of the actors in the value chain. Influence depicts a situation

³ A nascent or new entrepreneur who expects to employ at least 20 employees within five years' time.

where one entity reduces or increases the range of options for another entity. Examples for influences are laws, licenses, and advertising.

3. *Quantification*: By quantifying product, service and money flows in the business model, we can perform a "back of the envelope" calculation of the venture's profit potential as a last step.

The second phase is concerned with the design and the visualization of the business models of the venture creation and market exploitation phase. In the third phase differences are analyzed. This includes the description of similarities and differences with regard to the business model core elements (transaction content, structure and governance), structural changes as well as the extend of change.

4.3 Coding the cases

Because using several coders is essential in ensuring reliable case survey research (Larsson 1993; Yin & Heald 1975), we used four coders to analyze the cases. Each case was assigned at random to two of the four coders. The first step in coding the cases involved reading the material and deciding on the start and end dates of the phases for the individual cases. The coders compared and discussed the phases, to make sure that both coders would use the same material in relation to the specific evolution phases. Finally, the coders coded the variables of the protocol individually. After all the cases had been coded, we recoded the gained information in BMDF language.

5 Results

Analysis shows a number of patterns common to the analyzed venture projects. These refer to several parameters – complexity, level of change and growth paths and appear in two forms: *patterns of development* and *patterns of structure*. Patterns of development denote similarities between different projects in the manner in which a business model evolves over time. Patterns of structure indicate parallels in certain elements and parts of business models at specific points in time and common to several fields of business.

5.1 Patterns of development

We have identified three basic types of change models used by the firms we studied: realization models, extension models, and reemerging models (comparable with Linder & Cantrell, 2000).

A change model is the core logic how a ventures business model changes over time to remain profitable in a dynamic environment. Companies use realization models to maximize the returns from their existing operating logic. They exploit the potential of their current business model in order to grow and profit. Of all the change models, it represents the least actual change. Through visualization it can be seen by an anticipated geographical expansion and growth in the customer base, but no sustainable changes in the operating business model and network itself. Extension models expand businesses to cover new ground – including new markets, value chain functions as well as product

and service lines to add to existing operations. Extension models frequently involve forward or backward integration which results in new definitions of customers and consumers, additional core competencies and new influence patterns. The reemerging model provides a company with a new business model. The company moves deliberately and purposefully to a new operating model. Globalization, migration up-market and down-market – from price competition to brand or service-based preferences or vice versa are often reasons for this kind of change.

Furthermore, we investigated that in the technology phase and implementation phase, research institutes and venture capitalists play an important role. In the market offering phase big companies acting as partners become more important.

5.2 Patterns of structure

With regard to complexity, we could identify a “complexity curve”: the first version of the business model often is simple (venture creation phase); the next version tends to become quite complex; and recognition of difficulties with parts of the model then results in simplification again. Going in line with the complexity curve is the successive discovery of layers of important but non-obvious actors as well as redundant elements.

5.3 Growth specific patterns

The analysis of patterns of development is interesting in the context of high-growth ventures, since for this type of venture it is vitally important to design a strategy that allows for possible growth paths. This requires either a fit for scaling business model – that is, a structure capable of generating and handling high growth in itself – or modifications in the business model after market entry and new product releases. Our analysis shows that high-expectation ventures rather use a well-scalable business model (evolution model) and use the existing realization potential rather than change their business model fundamentally (reemerging model).

6 Limitations

As with any case survey research, our findings are constrained by the quality of the original case descriptions (Yin & Heald 1975). The case material was originally collected for other purposes, and may have focused on specific fields of interest or educational purposes.

Business cases that are used for educational purposes may be oversimplified, ignoring the complexity of the business models involved. However, a positive effect of this oversimplification may be that the relevant issues are made more explicit. Another limitation of using existing cases is that the cases are related to different markets and industry sectors and that time schemes can be intransparent.

Because data collection always involved the risk of interpretation and bias, using existing cases from different authors reduces risk of personal bias. Future case survey research may be improved by combining several types of case descriptions, i.e. both teaching cases and research cases, or by validating the coding results with company stakeholders (Larsson 1993).

Although we instructed our coders to limit themselves to the information contained in the cases, we often found that common sense and common knowledge would dictate that certain business model components are actually changing, even though that was not mentioned explicitly in the case descriptions.

7 Conclusion

The business model can be a central construct in entrepreneurship research. This article has sought to provide direction in addressing some of the more vexing questions surrounding models.

Right now business model pattern identification is a human-performed activity. Our future plans include the provision of techniques that support entrepreneurs as well as venture capitalists with algorithms to (semi-)automate the identification, modification, evaluation and comparison of business models.

Alexander et al. (1977) and Gamma et al. (1995) emphasize that patterns are not simple building blocks that are ready to use, but rather more abstract: in application, users have to build their own specific solution based on a given pattern or network of patterns. Therefore, we aim at searching for, identifying, and describing patterns in business models in order to lay the foundation for a pattern language of business model design.

Areas requiring further investigation include the ability of entrepreneurs and others to assess the quality of the business model. Systematic approaches for assessing model viability are needed. This could be done by combining critical success factors (CSFs) and business model life cycle stages. The results are likely to be useful for the venture capitalists and entrepreneurs in planning and making decisions regarding the long-term scenarios for business models success. Methods are also required for appraising the model's fit with changing environmental conditions; just as critical are issues surrounding model implementation.

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