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Editorial: The Business Model Eruption and How Game Changing Mind Sets Challenge Existing Nodes of Business

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In justifying the track, the notion that the field of business models had received a vast amount of interest from business, political, technical and academic perspectives in the past decade was highlighted. Despite this rising focus, much progress seems to have been consulting-driven, and research in the field is - if not lacking - then at least behind schedule. As track leaders, we noted that new models of doing business were presenting themselves continuously, but that the academic community was not addressing them accordingly.

New modes of business e.g. based on loosely coupled networks and multisided platforms of value creation and businesses utilizing co-creation and co-opetition oriented structures, potentially pose as threats to the traditional professions as the very structure of organizing and value-realization is altered. Perhaps it can even be argued that management as we know it, will become obsolete in a world of network organizations and social-community based business models, thus posing new conceptions of accountability, control and leadership and ultimately creating new sets of stakeholder tensions. Hence, traditional disciplines such as organization, management, accounting and finance, as we know them, may be in dire straits.

Thus from perspective of managing companies we may need to ask: "How do we produce decision-relevant information, create management structures, ensure leadership, alignment of the organization, and implementation of strategic intent?" And from a value determination perspective we may need to ask: "How do we capture value creation and value realizing transactions of network-based enterprises?" Furthermore, from an auditing and law perspective we may need to ask: "How do we validate information across structures that do not exist per se"? Finally, implications for policy-making bodies need to be evaluated.

Although there may be obvious problems as described above, some reflection on whether this tension between business and academia merely can continue on an "as is-basis" will also become of notable importance. This track welcomed a broad spectrum of contributions, including conceptual, theoretical, empirical and interdisciplinary contributions anchored in the business model

Keywords:
1: Aalborg University
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4: Linköping University

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literature as well as other fields of contemporary research.

The paper by *Ahokangas and Myllykoski* explores a new perspective on business models by looking at them specifically from action research and action learning perspectives. Much of the extant business model literature being conceptualization focused, the paper focuses on business model creation and transformation as practices. The action perspective helps to overcome two major problems the authors want to highlight, namely that of agency, i.e., the role and experience of the individuals dealing with business models, and that of context, i.e., how contextual factors influence business model creation and transformation. The contribution of the paper is in that it roots the action perspective to opportunity and advantage related discussion on business models, and builds a coherent approach or framework to research not only the content but also the process dimension of business models. Ahokangas and Myllykoski want to take a step further from mere business model innovation to seeing business model creation and transformation as exploration and exploitation of opportunities and advantages.

Peyton, Lueg, Khusainova, Iversen and Panti present a case study on business model change in the software industry. The purpose of the paper is to identify elements of a business model in the software industry. Furthermore the purpose was to identify the antecedents that lead to business model change and assess the consequences of this change. As a foundation for analysis they use Rajala *et al.*'s, (2003) concept of the elements of a business model. They also highlight that customers' willingness to pay for advancements in technology is crucial for software business models. In their findings they state that the framework for business models in the software industry that they use reasonably well describes the specific conditions of the industry. They suggest though that this framework should be extended by the element of innovation. They conclude that it is necessary in order to capture and include the influence from emergent strategies and technologies in software companies.

Johansson and Abrahamsson study how business models are used by born global firms when acting upon new business opportunities and how the companies manage their business model innovation over time in order to prosper and grow. They define born global firms as young firms characterized by a rapid international growth and innovativeness from their inception. These kinds of firms have the capacity to identify and act upon novel opportunities due to fast access to international networks, international customers, and international financing. The study is based on three exploratory case studies of born global firms in mobile communication, financial services and digital music distribution. Findings from the case studies are that business model innovations are used as a tool by maturing born global firms to navigate the value chains and achieve international growth. Furthermore, they find that these kinds of firms need the capabilities to balance different business model designs simultaneously and to manage its business model innovation in a timely manner.

In his paper on pricing re business models, *Petri* combines research on price models with Osterwalder and Pigneur's business model canvas. He argues that many business model frameworks lack a detailed description of their embedded price- or revenue models. He proposes the concept of a "price model equalizer", that is a concrete model that can be used to describe and analyze the specifics of a price model. It can be used to make sure that the price model is aligned with – and leverages – the business model. The empirical case in the article describes the biggest Swedish taxi company, Taxi Kurir. Taxi Kurir decided to introduce a new price model, which was in line with the customers' preferences. The new price model changed the value proposition, by offering a "fixed fee"-price model. This new price model was only possible to deliver given Taxi Kurir's existing key resources. The new value proposition (and price model) also required the company to introduce new management processes to assure that the key partners (taxi owners and taxi drivers) delivered according to the new value proposition. Hence, the price model, and processes associated with it, was an essential component in leveraging the company's business model.

Heikkilä addresses the area of networked business models, studying a case of a novel eHealth service. In order for the service to work, doctors, pharmacies, health-concerned individuals, among others, need to find sustainable ways of collaborating. There is thus a

need for a business model for the network, rather than just for a focal firm. To aid in the assessment of the viability of the eHealth services, Heikkilä proposes a networked-business-model-based set of performance indicators. The case serves as an illustration of a generally applicable performance estimation process in multi-party settings, and thus contributes to both the performance measurement and the business model literatures.

Yrjölä sets out to explore how retailers adopt multichannel business models and the challenges they face when they do so. More specifically the paper increase our understanding of how retailer creates customer and firm value by the utilizations of multiple channels such as a combination of brick-and-mortar stores, vending machines, kiosks, mobile devices, online storefronts in their business model. *Yrjölä* has commendably collected rich empirical material from the field. This consist of semi-structured interviews with top executives from different retailing environments that together provides a clear and in-depth picture of the different challenges that they face when they use multiple channels. *Yrjölä* essentially argues that using a multichannel retail business model requires a critical re-assessment of the cornerstones of an organizations value creation. He also elaborates on the challenges and sums them up into a triad: multichannel formats can lead to a mismatch between customer and firm value, retailers face pressures to use their activities to form integrated total offerings to customers, and finally multiple channels might lead to organizational silos with conflicting goals. Overall, *Yrjölä's* paper provides a more complete and richer understanding of how different channels can co-exist in the same business model than earlier research has offered us.

Lund and Nielsen argue that existing frameworks for understanding and analyzing the value propositions and value configuration do not work in the case of network-based business models, i.e. organizations where several companies combine resources and activities in order to lift a certain value proposition to a customer segment. Furthermore, especially in relation to the understanding and configuring of strategic partnerships in relation such network based business models, Lund and Nielsen see abrupt weaknesses in existing methodologies. Trough a longitudinal case study spanning three years the authors illustrate how a network-based business model arises and evolves and how the forces of a network structure impact the development of its partner relationships. The contribution of this study is to understanding how partners positioned around a business model can be organized into a network-based business model that generates additional value for the core business model and for both the partners and the customers and while existing studies of business model evolution are concerned with the dynamics created by interactions between a business model's components, this study adds value by reflecting the dynamics created in the interactions between a business model's strategic partners.

The papers chosen from the 2013 NFF track on business models for this special issue of the Journal of Business Models are currently paving way to new frontiers in business model research. The forthcoming NFF conference in 2015 at Copenhagen Business School, Denmark, will hopefully provide a platform for continuing down this road by focusing both on the emerging topical themes, such as sustainability and scalability of business models, as well as on relevant approaches to doing future research on business models in the first place.

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Mathias Cöster, PhD, is engaged as Assistant Professor at Uppsala University Campus Gotland where he teaches Informatics and Accounting. Cöster's research comprises studies of IT influence on industries and business strategies and his previous work have been carried out on the Swedish Graphic industry. Currently, he is also engaged in research on the relationship between business models and pricing and price models.

Alf Westelius is professor of Economic Information Systems at Linköping University. His research centres on change processes (often, but not exclusively connected with IT) and conditions for attaining sustainable change. Related areas include strategic applications of IT, learning, knowledge management, management of change and project management. The concept Perspectives management - identifying and paying heed to perspective differences among people regarding the phenomenon of interest - is central in his research. As consultant, he works with organisations from the public, private and non-profit sectors. One current research interest is the connection between business ecologies, business models and pricing models.

Einar Iveroth, Dr., is Assistant Professor at Uppsala University. He is an expert on strategic pricing, price models and IT-enabled change. His most recent work includes the co-authored book "Pricing: business ecologies, business models, pricing models" (Studentlitteratur, in Swedish). He has also published extensively in a wide variety of internationally scholarly journals including e.g. Journal of Environment Management, European Management Journal, California Management Review, Health Care Management Review, Journal of Accounting & Organizational Change, and Journal of Change Management. Additional research interests include strategy, management control, innovation and creativity. Prior to academia he worked with organizational change issues within the private and public sector.

Carl-Johan Petri, PhD, holds a ph.d. from Linköping University. His main research interests are within the fields of strategy, management control and pricing. He has written several books about balanced scorecard (for example Making Scorecards Actionable, Wiley 2003, that has been translated into eight languages). During the last years he and his colleagues at the Centre for Advanced Studies of Innovative Price models have published several articles and a book about how to design innovative price models.

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The Practice of Creating and Transforming a Business Model

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Abstract

Purpose: The paper explores the dynamics of business model creation and transformation as practices.

Design/methodology/approach: The paper is conceptual and exploratory in nature and builds on the practice / action learning approach.

Findings: The paper presents an action research based framework for approaching and understanding business model creation and transformation as practices. These practices are rooted in managerial and entrepreneurial experience through the exploration and exploitation of business opportunities and competitive advantages.

Practical implications: From a managerial and entrepreneurial perspective, the findings of the paper highlight the role and dynamism of the business context and of continuous assessment of the business model in business model creation and transformation.

Originality/value: The paper proposes a novel framework for business model creation and transformation and sees them as practices. It also connects business models to opportunity and advantage exploration and exploitation.

Keywords: Business model creation, business model transformation, practices, business opportunities, competitive advantage.
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1. INTRODUCTION

The term business model has become one of the keywords of contemporary business (Zott, Amit, and Massa, 2011; Onetti et al., 2012). The term denotes not only a practical tool but also an object of analysis in research (Zott et al., 2011). However, understanding the dynamic side of business models—especially how they are created or changed in practice—by referring solely to existing research, is problematic from two standpoints. First, while there have been many attempts to define the concept (see Zott et al., 2011 and Onetti et al., 2012) and as many to capture the essence of business models (see Linder and Cantrell 2000; Chesbrough, 2010; McGrath, 2010; Sosna et al., 2010; Osterwalder and Pigneur, 2010), we find a research gap arising from the fact that scholars have paid surprisingly little attention to the processes of creating and transforming business models despite there being an implicit assumption of an underlying process dimension in the business model concept. Second, the dynamics between the business model concept and the relevant business context—sometimes referred to as the business environment—where it is applied appears often rather obscure in the prior research. The business context has in most cases been reduced to customers, channels, partners, and suppliers, focusing on value creation and capture (Osterwalder and Pigneur, 2010; Zott and Amit, 2010). Again, we find a research gap attributable to only a few research papers having systematically considered the dynamics of the development of the business model in its business context (Markides, 2006; Teece, 2010).

Given the above considerations, we argue that there is a need for a research approach that enables the contextual unfolding of the dynamics of business model creation and transformation. We want to emphasize the ways in which managers and entrepreneurs perceive the situations in which business models are created and transformed, and the processes involved. In this paper, we adopt the experiential learning perspective, which offers a new way of looking at business model creation and transformation as parallel *practices* of visioning, strategizing, performing, and assessing (Torbert, 1991; Meyer, 2003; Torbert 2004). These parallel practices build upon the territories of experience—the outside world, self-sensed behaviors and feelings, the realm of thought, and the realm of vision/attention/intention (Torbert and Taylor, 2008)—that influence managers and entrepreneurs when they make judgments concerning action. Scholars have noted that it can be difficult to learn from action without a continual shifting of awareness between and among these territories (Fisher and Torbert, 1995; Meyer, 2003). Further, the practice-oriented thinking applied in this paper introduces a fresh view on what is meant by the business context, as it highlights the focal actors' knowledge and experience relevant to action, and indeed, experience and knowledge are rooted in action.

By referring to both the creation and transformation of business models, we want to highlight that there is an experiential and time difference between the original creation of the business model and its subsequent transformation or change—even though the basic idea of the business model as a concept remains the same. The practices of visioning, strategizing, performing, and assessing involve the territories of managerial/entrepreneurial experience, and through these practices the business model can lead the company to competitive advantage when exploiting a business opportunity in a business context. Reflecting this processual approach, we adopt a strong orientation toward practices, where action (Tikkanen et al., 2005), business context (Teece, 2010), and experiential learning (Sosna et al., 2010) all play an important role when researching business models and, especially, when researching the dynamics of creating and transforming business models.

From these starting points, this conceptual paper seeks to explore the following question: *How can business model creation and transformation be approached as practices?* The term practice can itself be approached from several standpoints. In this paper we build mostly on the practice-based perspective (Sole and Edmondson, 2002; Swan et al., 2007, Corradi et al., 2010), which emphasizes the collective, situated, and provisional nature of knowledge, connotes doing, and involves the awareness and application of both explicit (e.g., theories, concepts, tools, procedures) and tacit (e.g., rules of thumb, shared worldviews, capabilities) elements of knowledge in the social, historical, and structural contexts in which action takes place. Thus, we assume that business models are seldom the creations of, or transformed by, single individuals but are instead created and transformed by a group of

individuals, since they require doing, i.e., action, and are rooted in the experience and knowledge of the focal actors.

This paper aims to contribute by specifically discussing business models from the creation/transformation point of view, and by rooting that discussion in the fields of strategy and entrepreneurship. We begin by reviewing the business model literature from three standpoints by looking at how the business model concept has been approached in earlier research, how business models have been seen from a processual perspective, and how the context of business models has been understood. We continue by connecting the business model to the concepts of business opportunity and competitive advantage by paying particular attention to the exploration and exploitation of both opportunity and competitive advantage as the key elements of business model creation and transformation. We propose a framework for approaching business model creation and transformation as a *managerial* or *entrepreneurial* practice. The proposed framework relates business model creation and transformation practices to the exploration and exploitation of business opportunities and competitive advantages. We conclude by discussing the theoretical and managerial implications and the limitations of our research.

2. CREATING AND TRANSFORMING BUSINESS MODELS IN EXTANT RESEARCH

Business models in current literature

Among the vast number of different definitions of the business model concept (Zott et al., 2011 and Onetti et al., 2012), two central issues appear repeatedly: the business model as a representation of the logic of value creation and capture (Shafer et al., 2005; Teece, 2010), and the structure, architecture, or framework of the business (Teece, 2010; George and Bock, 2011; Mason and Palo, 2012). These two areas aspects enable the business model concept to connect abstract-level strategy (i.e., theoretical thinking) to its implementation on a practical level (i.e., action) (Osterwalder and Pigneur, 2002; Richardson, 2008).

The reason the concept of the business model has attracted such attention among practitioners and academics is down to its impact on a firm's competitive advantage; especially in today's turbulent, global business environment (Richardson 2008; McGrath 2010; Teece 2010). A business model connects the firm and its external business environment, customers, competitors, and society (Teece, 2010). A business model can act as a pathway to competitive advantage (Teece, 2010; Zott et al., 2011) built upon a business opportunity. For example, Zott and Amit (2010) see the exploitation of a business opportunity as the overall objective of the firm's business model. In the opportunity landscape, a business model can be viewed as the cognitive link between an entrepreneurial appraisal of the opportunity and its exploitation (Fiet and Patel, 2008).

Since the emergence of the business model concept within the e-business context (see Timmers 1998; Amit and Zott, 2001; Osterwalder 2004; Wirtz, Schilke and Ullrich, 2010), the business model literature has generally been focused on identifying the central elements of the business model construct (see for example, Onetti et al., 2012; Shafer et al., 2005; Richardson, 2008; Osterwalder and Pigneur, 2010; Zott and Amit, 2010; Mason and Spring, 2011). Owing to the amount of attention paid to business model elements, business models have usually been regarded as static descriptions. However, a more dynamic and processual approach to the business model is needed to match today's complex, turbulent, and uncertain business environment (Kagermann, Osterle and Jordan, 2011). An important notion by Morris et al. (2005) is that the business model is never static but develops continuously through specification, refinement, adaptation, revision, and reformulation. Thus, when adopting or building a view of the business model, not only the content (i.e., the "what"), but also the process (i.e., the "how") aspects of the business become important (Zott et al., 2011).

Business model creation and transformation processes

A processual approach calls for a closer examination of the business model creation and transformation

processes. Business model *creation* has usually been regarded as a complex and dynamic process characterized by uncertainty, experimentation, and learning (Chesbrough, 2010; McGrath, 2010; Teece, 2010). For new businesses, the business model can be fairly informal and implicit, but it evolves gradually through trial and error (Morris et al., 2005). In their case study, Sosna et al. (2010) divided the evolution of a business model into two phases: The first involves experimentation and exploration, and the second is the exploitation phase. Both are closely connected to, and shaped by, experiential learning. For established businesses, the transformation of an existing business model brings special challenges to the creation stage of a new business model. For example, an organization will often be forced to deal with conflicts (e.g., relationship conflicts) and trade-offs between the old and new ways of doing business (Markides, 2006). The new business model may even demand that existing businesses be cannibalized in the course of the transformation process (Teece, 2010). *Transforming* the business model means changing the organization as well (Linder and Cantrell, 2000), and the activities and logic related to the new business model can be incompatible with the status quo (Markides, 2006; Chesbrough, 2010). Owing to such difficulties, established organizations have favored an incremental form of business model transformation (Linder and Cantrel, 2000) in which, once again, experimentation and learning are crucial (McGrath, 2010; Sosna et al., 2010). As an alternative, firms have also been found to trial multiple business models at the same time (Brown and Gioia, 2002). Thus, for both new and established businesses the need to evaluate the suitability of the business model means that it has to be evaluated against the business context and further calibrated in order to find an optimal fit with the environment (Teece, 2010). It appears evident that the business context has a major impact on both business model creation and transformation.

Table 1 summarizes the current literature on the creation and transformation of a business model, building on the three elements of change proposed by Pettigrew (1990): content, process, and context. When analyzing the business model literature through these elements, an interesting finding that arises is that the meaning of the context to business models has rarely been discussed, as the major part of the literature has focused on the content aspects to the extent that the process aspects of the business model remain relatively underexplored.

Business model: from opportunity to competitive advantage

The processes through which new business models are created, and existing ones transformed, take place in a business context. The contemporary business model literature provides two concepts relating business models with the external business context, i.e., competitive advantage and business opportunity. As discussed, a business model can act as a pathway to competitive advantage (Teece 2010; McGrath 2010; Zott et al. 2011) built upon a business opportunity. Second, Zott and Amit (2010) see the exploitation of a business opportunity as the overall objective of the firm's business model. Consequently, more detailed discussion of the business model, and these two key concepts, business opportunity and competitive advantage, is merited. The business opportunity and competitive advantage are the key constructs to connect the business model to the dynamics of the business context when we are discussing business model creation and transformation as managerial or entrepreneurial practices.

The opportunity-seeking behavior and processes are described in the field of entrepreneurship (Alvarez and Barney, 2007 and 2010; Shane and Venkataraman, 2000). Eckhardt and Shane (2003: 336) define entrepreneurial opportunities as "situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships." The discussion around opportunities has largely focused on the ways in which entrepreneurs become involved with new opportunities (whether they are discovered or created), but what happens afterwards has rarely been discussed. Identifying an opportunity is not enough since the opportunity must then be realized (Mainela and Puhakka, 2009).

Ardichivili et al. (2003) are among the few scholars to have discussed opportunity identification and development as a process. Their basic argument is that elements of opportunities are recognized, but

Table 1. Business model creation and transformation.

	Business model creation	Business model transformation
Content	**Business model conceptualizations:** • an "architecture" (e.g. Timmers, 1998; Teece, 2010), a "recipe" (e.g. Baden-Fuller and Morgan, 2010; Sabatier et al., 2010), a "narrative" (Magretta, 2002; George and Bock, 2011), "cognitive map" (Chesbrough, 2010), a "design" (Smith, Binns and Tushman, 2010) or "actualization of decisions and actions" (Tikkanen et al., 2005) for competitive advantage. **Business model definitions:** • "A business model defines how the enterprise creates and delivers value to customers, and then converts payment received to profits" (Teece, 2010; 173). • "...a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network" (Shafer *et.al.*, 2005: 202). • "...the design of organizational structures to enact a commercial opportunity" (George and Bock 2011: 99). **Business model elements:** • Strategic choices, Value Network, Create value, Capture value (Shafer *et al.*, 2005) • Value proposition, The value creation and delivery system, value capture (Richardson, 2008) • Focus (what?), modus (how?), locus (where?) (Onetti *et al*, 2012)	
	• No internal limitations to business model content • Linked with external opportunity • Innovativeness, novelty, efficiency, inimitability (e.g. Teece, 2010; Zott and Amit, 2010; George and Bock, 2011)	• Possible conflict with existing and new BM content → cognitive barrier for inventing new BM (e.g. Markides, 2006; Chesbrough, 2010)
Process	• Adapting / reacting to emergent changes in environment (Wirtz *et al*. 2010) vs. Proactively leading the industry evolution (Demil and Lecocq, 2010). • Sequential, continuous process: specification, refinement, adaptation, revision, and reformulation (Morris *et a*l., 2005), exploration – exploitation duality (Sosna *et al*., 2010). • Experimenting, learning and managerial cognition shape the process (Sosna *et al*., 2010)	
	• Design elements: content, structure and governance • Breaking down the existing logic within the market • Implementation as important as the content • Uncertainty shape the process (e.g. Chesbrough, 2010; Teece, 2010; Zott and Amit, 2010)	• Change of cognitive frames needed • Cannibalization of the existing BM • Timing important • Incremental vs. radical change • Continuous process (e.g. Shafer *et al*., 2005; Chesbrough, 2010; McGrath, 2010; Teece, 2010; Hacklin and Wallnöfer, 2012).

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Table 1. Business model creation and transformation.

Context	• Uncertain, turbulent, dynamic with increased power in business networks / ecosystems (Kagermann *et al*., 2011), competitive advantage being temporary (D'Aveni *et al.*, 2010). • Business models are calibrated in context (Teece, 2010) and developed in interaction with their social context including the society, competitors and customers (Tikkanen *et al.*, 2005)	
	• Possibility of disrupting the current market with a new BM (e.g. Chesbrough, 2010; Teece, 2010)	• Threat of newcomers with novel BMs • Possible channel conflicts (e.g., Chesbrough, 2010; McGrath, 2010; Teece, 2010)

the actual opportunities are made, not found. This in turn is based on a cyclical and iterative process that involves the recognition, evaluation, and development of opportunity. Ardichivili and colleagues describe how initially opportunities are just simple concepts, but are elaborated as the development process proceeds. Through a more precise definition of market needs, customer benefits, users, and resources, the opportunity progresses first to become a *business concept,* and then ultimately matures into a *business model*. The key strength of their approach is that it goes beyond the first stage of the process, the discovery of the opportunity (see Shane and Venkataraman, 2000), and examines how that opportunity is developed into a real, established business. The important notion is that realizing the opportunity involves designing and implementing a business model (George and Bock, 2011).

However, success in the implementation of the business model is not enough to create a competitive advantage: The business model itself has to meet customer needs and be non-inimitable, as successful business models tend to be imitated rather quickly (Teece, 2010). Thus, if a firm is to establish a competitive advantage based upon an opportunity, its business model has to be differentiated, effective, and efficient. Furthermore, the elements of the business model have to work as a system (Teece, 2010), one that extends beyond organizational boundaries and involves the exchange partners of the focal firm (Zott and Amit, 2010; Nielsen and Bukh, 2011).

The business model concept fosters a new, dynamic approach within strategic management in terms of competitive advantage. McGrath (2010) discussed two traditionally recognized views of competitive advantage: industry positioning and the resource-based or dynamic capability views. She argued that in today's economy, competitive advantages are rarely sustainable and therefore continuous engagement with changing customer value creation, as well as experimentation with new business models (Chesbrough, 2010), are necessary to complement the long-term development of an industry position, resources, and capabilities. The business model as a concept is closer to action, and therefore working on the business model improves the conditions managers work under when making decisions during the ongoing search for temporary competitive advantage in turbulent environments (McGrath, 2010).

In this field of opportunities and competitive advantage, it is important to address the processual dynamics of organizational development through the concepts of exploration and exploitation originating from March's seminal work on organizational learning and adaptation (1991 and 2006). We argue that the tension between exploration and exploitation can improve our understanding and descriptions of the processes

of business model creation and transformation. Exploration refers to the pursuit of what might come to be known through creativity, experimentation, and learning. Exploration is characterized by activities intended to recognize new ideas and opportunities that could become the foundation of future sources of competitive advantage. In contrast, exploitation is defined as the "application of established competence to problems" (March 2006: 205), which is centered on the refinement, focusing, and efficiency-based routines that are the foundation of the current competitive advantage (March, 1991). Operating in an environment that is unfamiliar and ever changing requires both exploration and exploitation, but owing to limited resources within organizations there is a tension between the two and it is hard to find a balance between them (March, 1991 and 2006).

Exploration and exploitation can be seen as two interconnected processes running during the creation or transformation of the business model, where exploration leads to exploitation through learning, experimentation, and an explicit exploitation decision. Thus, exploration can be seen as a "seeking" process and exploitation as a "doing" process (see Shindehutte and Morris, 2009). In this paper, we propose to connect the processes to the interplay between business opportunities and competitive advantage. Following this, the seeking of opportunities (i.e., exploration) follows a decision to exploit those opportunities (see Choi and Shepherd, 2004). Similarly, we argue that the creation of competitive advantage can be divided into exploration and exploitation phases, in other words, exploration of the competitive advantage leads to exploitation through experimentation, learning, and an exploitation decision. Thus, we identify the exploration and exploitation of opportunity, and of advantage, as processes running in parallel with the creation and transformation of a business model.

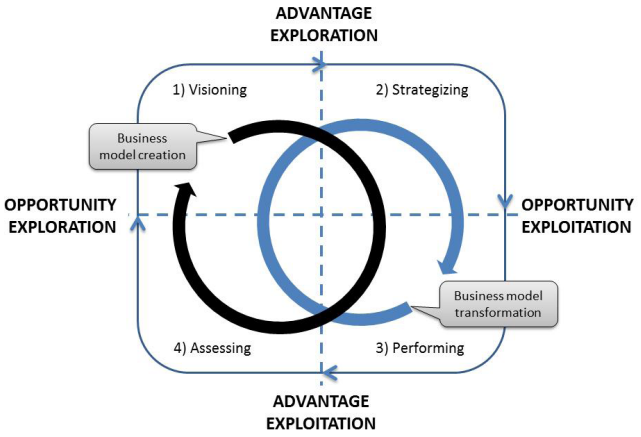
3. BUSINESS MODEL CREATION AND TRANSFORMATION AS PRACTICES

As in all organizational action, it is important to note that in reality there can be fundamental differences in business model creation and transformation, both between firms and within firms over time. We argue that the business model becomes fully comprehensible only by attaching it conceptually to action in its business context. This can be seen as one of the primary reasons why there is no consensus over the definition of a business model in the earlier research because without a contextual understanding, the definition of the concept inevitably remains vague.

The territories of experience approach elaborated by Torbert (1991 and 2004) and Meyer (2003) offers a novel way to systematically approach business model creation and transformation as an organizational practice; visioning, strategizing, performing, and assessing business models in context. In this context, *visioning* is concerned with the long-term intentions, futures, purposes, and aims of the business; *strategizing* with planning and implementing the content and process of the business model; *performing* with doing business with the business model; and *assessing* with the observed consequences and effects of action. Managers' and entrepreneurs' specific experiences of applying and developing business models (action) can be expected to stimulate reflection upon experience (Kolb, 1984; Saunders, 1997; Meyer, 2003), thus leading to a refined understanding of business models, their conceptualizations, and the contexts of the businesses in question.

Any attempt to better understand business model creation and transformation means relating them to the practices–visioning, strategizing, performing, and assessing–that illuminate the exploration and exploitation of the opportunities and advantages of the business. Figure 1 below depicts a conceptual framework for approaching business model creation and transformation as practices. We argue that from a practical (managerial or entrepreneurial) point of view, business model visioning is related to the exploration of opportunity and advantage; business model strategizing to the exploration of advantage and exploitation of opportunity; business model performing to the exploitation of opportunity and advantage; and business model assessing to the exploitation of advantage and exploration of opportunity. In addition, we argue that business model creation as a practice starts and ends with visioning, whereas the practice of business model transformation starts and ends with

performing. These practices are examined in more detail below.



Picture 1. Business model creation and transformation as practices.

To start with visioning, business model creation as a practice can be seen to be concerned with the future (McGrath, 2010) as it is about creating something new. It requires questioning whether the organization or the team has the opportunity and the advantages required to do business. The embryonic business model needs to be framed collectively by those involved in the possible future events envisioned (Mayer, 2003) and that frame can then used to explore the opportunity and possible advantages needed or at hand. Potentially there can be numerous opportunity–advantage combinations to be considered as possible options for doing business. During strategizing, the opportunity is shaped into a real business model description (Ardichivili et al., 2003) once the business opportunity to be exploited has been chosen, but the advantages required to make doing business viable may not be evident. The focal actors' lack of experience of the situation may thus strongly influence business model creation. Only in the act of performing is the chosen business model tested against the exploited business opportunity and advantages at hand (Sosna et al., 2010). During performing, the feedback from action can lead to a change of any of the practices related to the business model, be that a change of the business model, the strategy in question, or a change of emphasis in terms of what is important to those involved (Torbert and Taylor, 2008).

In the assessing phase, the consequences of action based on the business model and the competitive advantages exploited are evaluated against business opportunities in a wider sense, not only against the exploited opportunity but also against possible alternative opportunities. During this process, the boundary between assessing and visioning practices may become blurred since all meaningful assessment of a business model should be made with an eye to the future, too.

Starting with performing, the practice of business model transformation is concerned with the organizational liabilities stemming from doing business with an existing business model (Markides, 2006) that exploits the earlier chosen business opportunity with existing advantages. The pressures to change the practices related to the business model, to change the business model or strategy itself, or the attention of those involved are determined by the type and quality of feedback (Torbert and Taylor, 2008) available. Assessing can be seen as a crucial element of business model transformation (Teece, 2010), as the scope and scale of the re-explored business opportunities, the respective business model, and exploited advantages may exhibit planned or emergent systemic resistance. Moreover, the business context, boundaries, and properties of the business model system may be difficult to change due to their complexity and dependencies, especially in uncertain and dynamic business contexts. In the visioning process, the concern with the future of the business model may vary across its different elements. In addition, there may be conflicting views on the future scale and scope of the re-explored business opportunities and advantages held by the firm, all stemming from prior action. In a similar manner, strategizing can be dependent on prior action and experience, leading to a more limited set of options for planning the implementation or for doing business. Thus, the border between strategizing and performing may become blurred for those charged with ending the cycle of business model transformation.

To summarize, we argue that the creation of a business model as a practice differs from the transformation of a business model as a practice. The practice of business model creation exists in a business context that may not be well known by those involved with that practice,

therefore the opportunity and the advantages for business model creation may remain elusive and undiscovered for some time. In the practice of business model transformation, the liabilities stemming from the existing business model may provide a business context that is too constrained for those involved, and the business opportunities and advantages may be considered fixed. In addition, the business model creation and transformation practices have different starting and end points. In one sense, business model creation can be regarded as conceptually closer to entrepreneurial behavior, since it starts with opportunity-seeking behavior in the form of visioning. On the other hand, business model transformation resembles the traditional view of experiential learning in an organizational business context, where the cycle is started by performing (with the existing business model) and continues with assessing, visioning, and strategizing (Meyer, 2003; Mead, 2008). In sum, the key difference between the two practices is rooted in the managerial and entrepreneurial experience rooted in action in a business context.

4. DISCUSSION AND CONCLUSIONS

This study discusses business model creation and transformation as practices, and presents a framework for approaching and understanding business models from the perspective of action. We relate business model creation and transformation as practices to the exploration and exploitation of both business opportunity and competitive advantage in firms, and argue that the business model as a concept becomes fully comprehensible only through action in the business context where it is created. We see business model creation and transformation practices as comprising visioning, strategizing, performing, and assessing with the goal of reaching a competitive advantage regarding a business opportunity. In addition, we relate visioning, strategizing, performing, and assessing to opportunity exploration and exploitation as well as to advantage exploration and exploitation in a specific business context.

The exploration and exploitation of opportunities and advantages contribute to the evolution of the business model in a unique way. In practice, they help us to understand why business model transformation is so complex for established companies. Ensuring balance and creating a fit between business opportunities and competitive advantage, as well as fostering both exploration and exploitation, present major challenges for companies. Furthermore, neither business opportunities nor competitive advantages remain static, meaning that exploration and exploitation are continuous and involve uncertainties for managers and entrepreneurs. We argue that the complexity and uncertainty inherent in today's business environment (yet which are largely absent from current business model conceptualizations) may be revealed by the framework presented in this paper. In addition, we believe that the framework will help researchers to capture the difference between business model creation and transformation processes as the creation of a new business model is free of the burden of the exploitation of current or previous advantages. We suggest this is a step forward from addressing only business model innovation.

The visioning, strategizing, performing, and assessing processes bring a much needed action perspective to business-model-related processes. The driver of these practices that eventually shapes business model creation and transformation is experiential learning. Learning and unlearning make the processes continuous; they foster the modification of the existing business model and also create the basis for the exploitation of opportunities and advantages, as well as further exploration related to possible new (or yet to be transformed) business models (Sosna et al., 2010).

To conclude, the ramifications of the practice-based approach to business model creation and transformation that we have presented include at least three interconnected notions for future research. First, we find a need to define the concept of the business model from a new perspective, that of action. We argue that business models have, in earlier research, often been presented as static and fixed even though the dynamism of all business has been recognized. We see that the contributions of Chesbrough (2010), Demil and Lecocq (2010), Zott et al. (2011), Onetti et al. (2012), and Sosna (2012) have paved the way to seeing business model creation and transformation as processes of experimentation and action, but the practice-based conceptualization of the business

model is still in its infancy. Second, with the adoption of the practice-based approach, a longitudinal, systemic, and systematic view of business model creation and transformation is unfolding. Chesbrough (2010) argued that business models are often far from clear to managers; they typically involve trial and error and require experimentation. This highlights our third interconnected notion, the role of the business context where the business model is created or transformed and the experience of the managers and entrepreneurs involved. Discussing opportunities, Ardichivili et al. (2003) conceptualized business concepts as maturing into business models in a business context. Similarly, Teece's (2010) argument that business models need to be calibrated illustrates the important role played by context, but to date no coherent contextual model or perspective has been presented within business model research.

From the managerial or entrepreneurial viewpoint, this paper has several implications. First, it is important to note that the relationship between a firm's business model and the business context is dynamic and, therefore, that all business models require continuous assessment against the business context and subsequent adjustment or improvement to retain competitiveness. Second, the conceptual model presented in this paper reveals the difficulties related to business model creation and transformation, which in turn can help managers and entrepreneurs to better understand the threats and barriers to doing business. Finally, the visioning, strategizing, performing, and assessing practices utilized in the framework highlight the importance of managerial action and experiential learning.

The limitation of this research is that it presents a conceptual model of business model creation and transformation and does not present empirical data. Empirical, longitudinal research on the business model creation and transformation processes would increase our understanding of those practices. We find that the concept of the business model in the context of understanding organizational dynamics remains promising, especially when combined with organizational action, business context, and experimental learning. Adopting an action-oriented and practice-based approach to business model conceptualization opens up a processual dimension and brings the concept closer to managerial and entrepreneurial practice. Furthermore, when viewed as encompassing the concepts of business opportunity and competitive advantage, the business model clearly has potential to advance our knowledge of contemporary business practices.

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Charging Customers or Making Profit? Business Model Change in the Software Industry

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Abstract

Purpose: Advancements in technology, changing customer demands or new market entrants are often seen as a necessary condition to trigger the creation of new Business Models, or disruptive change in existing ones. Yet, the sufficient condition is often determined by pricing and how customers are willing to pay for the technology (Chesbrough and Rosenbloom, 2002). As a consequence, much research on Business Models has focused on innovation and technology management (Rajala et al., 2012; Zott et al., 2011), and software-specific frameworks for Business Models have emerged (Popp, 2011; Rajala et al., 2003; Rajala et al., 2004; Stahl, 2004). This paper attempts to illustrate Business Model change in the software industry.

Design: Drawing on Rajala et al. (2003), this case study explores the (1) antecedents and (2) consequences of a Business Model-change in a logistics software company. The company decided to abolish their profitable fee-based licensing for an internet-based version of its core product and to offer it as freeware including unlimited service.

Findings: Firstly, we illustrate how external developments in technology and customer demands (pricing), as well as the desire for a sustainable Business Model, have led to this drastic change. Secondly, we initially find that much of the company's new Business Model is congruent with the company-focused framework of Rajala et al. (2003) [product strategy; distribution model, services and implementation; revenue logic].

Value: The existing frameworks for Business Models in the software industry cannot fully explain the disruptive change in the Business Model. Therefore, we suggest extending the framework by the element of *'innovation'*.

Keywords: Business Model change; software; innovation; freeware; logistics; lock-in.
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Introduction

During the last two decades, Business Models have attracted considerable attention both from research and practice. A major focus has been on innovation and technology management (Chesbrough and Rosenbloom, 2002; Rajala et al., 2012; Zott et al., 2011). Rajala et al. (2003) emphasize that most research in the software industry has focused on product development, financing, and product life cycles or the industry as a whole or within defined Business Models. Some authors argue that the Business Model of the company should be revisited regularly (Johnson et al., 2008) and that its operative tactics have to be adapted to changing environmental conditions (Casadesus-Masanell and Ricart, 2010; Rajala et al., 2012).

However, the definition of a Business Model in the software industry, as well as its exact pattern of changes are puzzling issues for both practitioners and academics, and there are only few attempts to address this particular topic. Popp (2011) seeks to explain some software companies successes by applying hybrid Business Models where the software company is acting both as an inventor and as an lessor. Rajala et al (2012) study the effects of applying open innovation to the software Business Model. Open innovation is here defined as shared internal and external (customers) innovation. Advancements in technology, changing customer demands or new market entrants are often seen as a necessary condition to trigger the creation of new business models (Business Models) or disruptive change in existing ones. Yet, the sufficient condition is often determined by pricing and customers' willingness to pay for the technology (Chesbrough and Rosenbloom, 2002) which is identified through an increased tendency of freeware strategies (Haruvy and Prasad, 2005; Riehle, 2012). As a consequence, much research on Business Models has focused on innovation and technology management (Zott et al., 2011), and software-specific frameworks for Business Models have emerged (Rajala et al., 2003). Building on this previous evidence (esp. Rajala et al., 2003; Rajala and Westerlund, 2007), the focus of this paper is twofold. First, we attempt to further identify the elements of a Business Model in the software industry. Second, we aim at identifying the antecedents that lead to a Business Model change and then assess the consequences of this change. We pose the overall research question: *"What are elements of a Business Model in the software industry, and what are the antecedents and consequences of a Business Model change in the software industry?"*

To investigate this question, we conduct a case study at the Danish division of a small Norwegian company (APOLLON) specialized in outbound logistics software. We want to explain how the Business Model of the software company has evolved over APOLLON's life span, what caused the recent changes in the Business Model, and what the consequences and future opportunities are. Drawing on Rajala et al. (2003), this case study explores the (1) antecedents and (2) consequences of a Business Model-change in a logistics software company. The company decided to abolish their profitable fee-based licensing for an internet-based version of its core product and to offer it as freeware including unlimited service.

Firstly, we illustrate how external developments in technology and customer demands (pricing), as well as the desire for sustainability of the Business Model, have led to this drastic change. Secondly, we initially find that much of the company's new Business Model is congruent with the company-focused framework of Rajala et al. (2003) [product strategy; distribution model, services and implementation; revenue logic]. Nevertheless, the framework cannot fully explain the disruptive change in the Business Model. Constantly changing market conditions forces software companies to continuously rethink their Business Model. Therefore, we argue in line with Zott et al. (2011) to extend the framework of Rajala et al. (2003) by the element of *'innovation'* (also see the more recent source of Rajala et al., 2012).

The remainder of the paper is structured as follows: section 2 depicts the theoretical background of Business Models in the software industry. Section 3 explains the advantages and limitations of our chosen methodology, i.e., a case study. Section 4 presents our findings. We critically assess the case in section 5, and also emphasize our contributions and avenues for future research.

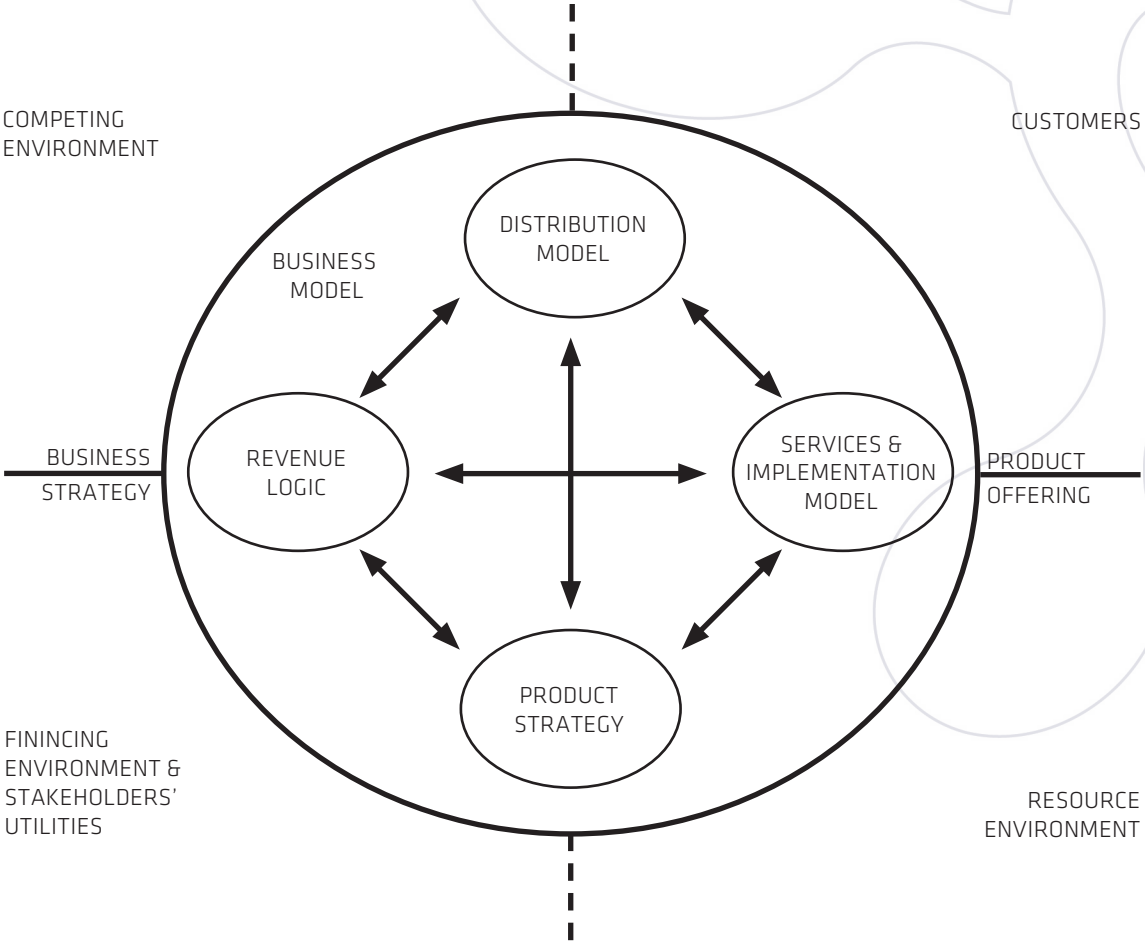

Figure 1: Elements of a Business Model (Rajala et al., 2003)

Business Models in the software industry

The literature offers a wide range of definitions for a Business Model (e.g., Chesbrough and Rosenbloom, 2002; Magretta, 2002; Osterwalder and Pigneur, 2005). Zott et al. (2011) structure this literature on Business Models since the first appearance of the concept in the 1990s. They find that three fields of research have emerged, which are (1) innovation in Business Models, (2) strategic aspects and performance management, and (3) e-business including information technology. As a finding across all three fields, they summarize that Business Models are individually tailored to companies and the environment in which they operate. Despite the importance of Business Models in connection with information technology, conceptualizations of Business Models in the software industry are so far non-existing. A notable exception are Rajala et al. (2003) who build theory from five case studies they conducted in the software industry (Glaser and Strauss, 1967; Strauss and Corbin, 1990). Based on their empirical findings, they suggest that a Business Model in the software industry comprises the interdependent elements of a product strategy; a revenue logic; a distribution model; and a service and implementation model. Competitors, resources, shareholders and customers are seen as direct stakeholders, who—however—operate outside the company's business model. We will apply this framework to APOLLON, see Figure 1 for details.

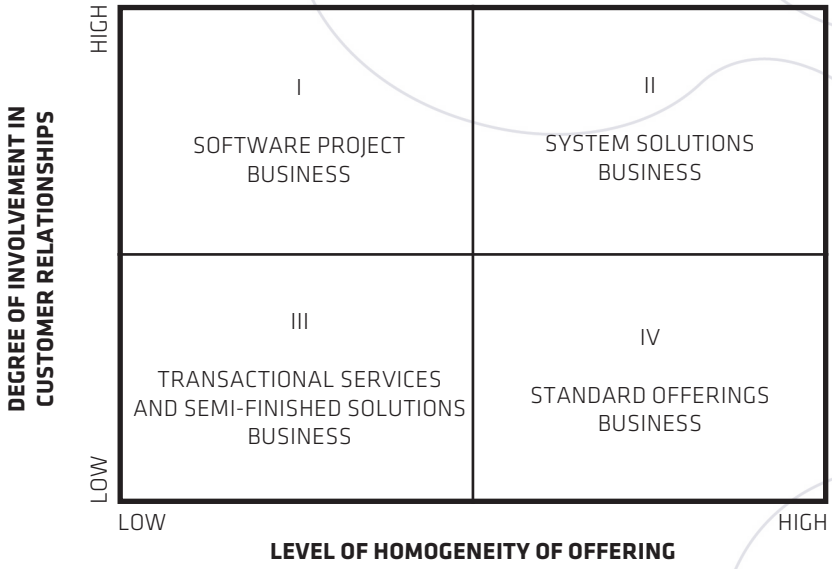

Figure 2 Classification of different types of business models in the software industry (Rajala and Westerlund, 2007; Rajala et al., 2004)

Rajala and Westerlund (2007) suggest that these four elements of a Business Models can be combined differently and thereby select a space along the two continua of *Degree of involvement of customer relationships* and the *level of the homogeneity of the offering*. The resulting four high/low combinations indicate four feasible Business Models in the software industry. These include *Software project businesses* (Type I) with high level of product customization and close client-company relationships; *System solutions businesses* (Type II) with high level of customer involvement combined with a highly standardized product; *Transactional services and semi-finished solutions* (Type III), which normally serve as a platform for a bigger value creation framework to a small number of clients and typically as a part of a network; and last, *Standard offerings* (Type IV), with low involvement in a customer relationships and economies of scale due to homogeneity. We will classify APOLLON in this framework and depict the four Business Models in Figure 2.

Methodology

Research Method

We opted to conduct an explanatory case study in a single company, which allows us to understand the phenomenon of Business Models in its real-life context (Burns and Scapens, 2000; Scapens, 1990). It is our goal to understand how exactly the elements of a Business Model work together in the software industry, and to illustrate practices from the field (Ryan et al., 2002). Thereby, we are open for interpretations that would lead us to adjust or further contribute to the theories that explain the phenomena under investigation (Arbnor and Bjerke, 2008; Lukka and Modell, 2010).

Data collection

We draw on three sources of data to illustrate our case: interviews, observations and archival data. Our first and primary sources are two interviews with carefully selected key informants. The first interview was conducted with the CEO of APOLLON's Danish division. We selected him for his thorough understanding of the international software market, his long experience, and his holistic overview of all operations in the company. Additionally, we conducted a phone interview with a sales representative in order to gain a better understanding of the direct interactions with customers (Ryan et al., 2002). By selecting key informants from different hierarches within the company, we also follow the call of Morgeson et al. (2010) for more multi-level case study research that provides a deeper understanding of the researched

phenomena. Interviews included mostly open-ended questions, and were semi-structured where we asked elaborating questions when appropriate. Interviews were originally conducted in Danish and lasted approximately one hour each. They were tape-recorded, transcribed and analyzed for patterns. Quotes in the text are our own translations into English (Bouchard, 1976; Brislin et al., 1973; Oppenheim, 1992). We did not predetermine the number of interviews but stopped when we felt saturated (Flick, 2002; Glaser and Strauss, 1967). Our first hint toward saturation was that the key informants started to only reinforce what we had found out through external analysis of the company beforehand. Second, we did not notice any contradicting evidence during our observations, which lent validity to the data. Third, we carefully selected the most knowledgeable key informants in the company such as the CEO; it is highly unlikely that there are other informants that would be more knowledgeable on a topic like APOLLON's Business Model.

Second, we use observations as a source of data that were gathered during our visits at the company site. These data sources include our general impressions of the research site; participation in diverse meetings; interaction of employees; the times that employees needed to perform tasks; the location and conditions of the building; work space arrangements and furnishing of offices; observations on the technology products of the company and the presentation on products given by APOLLON's managers. This data is very fuzzy, and we analyzed them by identifying patterns through discussions in our research group (Yin, 2009).

Third, we collected archival data on the company to corroborate our interviews and observations. We did this by asking APOLLON's management for documentation, and we also searched what was publicly available on the internet. These archival sources include internal documents, brochures, bulletins, annual report, reviews, presentation materials, and APOLLON's website. Again, we analyzed the data through pattern matching in group discussions (Yin, 2009). They support our understanding of APOLLONs specific situation.

Limitations

This study has limitations that need to be considered. As this is a single company case study, it might not be generalizable beyond the specific parameters of its context, such as its industry, the company size, or the competitive situation in which this Business Model has emerged. Moreover, we only investigated the Danish division of APOLLON. Though the research and development department is situated in Romania, the small size of the company and the fluent and transversal communication existing across the national departments enables us to identify and discuss the company's product development processes which are essential for the Business Model understanding. Last, this study mainly focuses on the Business Model. Future studies could focus more on the external, competitive environment.

Despite the limitations, we aim for sufficient validity and reliability (Ryan et al., 2002): We ensure construct validity by using established frameworks and definitions on Business Models to reason for our results. Internal validity is increased by corroborating diverse sources of data. As to external validity, we already alerted that this study has an explanatory, illustrative character and ask for careful consideration when generalizing our conclusion. Last, we consider reliability by depicting our research protocol.

Findings

The software company APOLLON[1] was founded in Norway in 1997 and expanded with national divisions to Denmark (2002), Sweden (2008) and Finland (2011). National divisions are in charge of selling, marketing and supporting APOLLON's main product, DISPATCH. DISPATCH tracks consignments. We will elaborate on the products in section 4.1. The Danish division employs 20 people. The programming department, where a majority of the coding and product development is done, is located in Romania and has 23 employees.

APOLLON operates in a niche market for outbound-logistics software. It has approximately 8,000 customers of which 1,600 are located in Denmark. APOLLON has only small and insignificant competitors in Denmark that have about 100 customers' altogether. Yet, APOLLON estimates that it just has 15% of the total possible market. Supposedly, there are still about 9,000 Danish

1 We changed the name of the company and its products to offer more anonymity.

companies who could switch from their in-house software solution to the DISPATCH product family.

Product strategy

The Product Strategy of APOLLON revolves around a product family, of which DISPATCH is the core. DISPATCH helps companies to manage their outbound logistics. All other products are built on it or are complementary. We also describe the recent changes to the product strategy. *DISPATCH* targets large company as customers who run an ERP-system, where DISPATCH gets invisibly integrated. The software accesses the widely different IT-systems of the customer's carriers. It is pre-programed to automatically comply with the varying demands of known carriers, such as their complex printing formats. Thereby, DISPATCH decreases human errors, lowers the risk of delays and saves time by automatic compliance, avoidance of entering data twice, and one integrated ERP-system. As a recent change, APOLLON added the 'DISPATCH Portal' feature, which enables senders and receivers to trac the consignment via an online portal. Another recently added feature is DISPATCH FileDrop. FileDrop enables customers to 'drag and drop' files created by the ERP-system and to use them DISPATCH. This is the simplest solution as no integration with the ERP-system is necessary.

APOLLON has recently introduced several new products: The recently added products '*DISPATCH ONLINE*', '*DISPATCH MOBILE*', and '*DISPATCH ScanApp*' focus on a different customer group. ONLINE has the exact same features as the parallel existing product DISPATCH, the only difference being that it runs fully online. Thereby, it targets a new customer base that does not have an ERP-system, especially small, newly started companies, often web-shops.

MOBILE has also been recently added to the product group. It targets the completely new customer segments that lack the financial strength to afford their own system: small carriers, i.e., the companies that APOLLON's current customers work with to ship their own products. By establishing business relations with them, APOLLON locks them in and thereby protects its Business Model against potential new entrants. ScanApp is the online version of MOBILE and also targets small carriers. Thereby, APOLLONs product strategy is gradually changing from a traditional product approach aiming at a well-established customer segment to a diversified product approach aiming at a different customer segment with new types of products.

Revenue logic

As APOLLON has currently no competitor in Denmark except for in-house solutions for outbound-logistics software, it has relatively high discretion in pricing. APOLLON's sources of revenues are one-time installations as well as monthly fees from customers using DISPATCH. The cost installation for DISPATCH varies according to the number of days APOLLON employees are at the customer's site, the hourly rate for external consultants, the number of printers, and the sophistication of desired integration (FileDrop, SQL or API). The monthly fee paid for DISPATCH varies with the number of consignments per year. Licenses range from up to 2,000 until 50,000 consignments per year. Each license covers one location and an unlimited number of users, along with unlimited service and support on phone or email.

APOLLON operates profitably and its revenues exceed its costs by far. The costs structure has three main categories: First, there are development costs. A software product is the fact that it requires large investments in the development of software, and low or non-existent marginal cost afterwards (Shapiro and Varian, 1998). Despite the fact that DISPATCH was initially developed by the division in Romania, the Danish division contributed substantially to the developments of ONLINE, PORTAL and ScanApp. A second major cost category is the helpdesk to which all customers have unlimited access to foster high loyalty. The third cost category is the administrative expenses, including office rent, traveling, salaries, marketing material, and PR related expenses.

It is highly noteworthy that—to get access to new customer segment of smaller companies—APOLLON made a radical rupture in its Business Model. Now, it gives away a newer, more modern version (ONLINE) of its highly profitable older core product (DISPATCH) for free. Astonishingly, APOLLON also grants the same, free service and maintenance to all of these non-paying customers. This try-before-you-buy has been a fundamentally new paradigm for APOLLON. The decision to create this online version of the product was

associated with the decision to target new customer segments, i.e. to cover small and medium size companies in addition to large businesses they used to have as clients. Among others, the differences between the two solutions are the lack integration into customers' ERP system and easy access to the system via the internet. Moreover, online version does not require manpower to install the system and train the staff. As for the try-before-you-buy option, it was not offered for the APOLLON users, and it is not available to everyone, but rather to small newly established businesses, who might become their potential clients. This is a major difference to similar Business Models like Gillette, where the product (razor) is free but customers are charged for the maintenance (blades) (Johnson et al., 2008; Zott and Amit, 2010). However, by offering the product and service for free for smaller companies, APOLLON thereby create sustainable value for these companies, as said by the CEO:

> *"The idea is to capture the small customers who are just starting their businesses. They don't have any capital, so we have a Business Model that can assist in that particular situation."*

ONLINE is already popular in Norway, and the Danish market is expected to pick up. From the limited data available, it seems as if approximately 90% of ONLINE-customers default within one year. While the marginal cost of the product is irrelevant, APOLLON never recovers the incurred costs of service and maintenance. APOLLON tries to retain the remaining 10% of surviving customers. As they grow, APOLLON charges them as soon as they reach a certain number of consignments. APOLLON anticipates that customers—who felt well-treated in the past by having access to all features for free as well as unlimited service—will stick to APOLLON's products later. The network effect as well as switching costs would suggest this opportunity. Having introduced new products to new customer segments, APOLLON has switched its marketing strategy from concentrated to diversification integrated new products in new markets (Ansoff, 1958). This exact phenomenon is closely linked to that of innovation (Ansoff, 1968). Accessing a new market (i.e. the small companies) through a new channel (the internet) using a different strategy (freeware) is increasingly common among software suppliers (Riehle, 2012) and can be categorized as a commercial open source Business Model with the aim of gaining revenue at a later point in time when the free open source does no longer provide the full utility (Riehle, 2012). This type of Business model is often seen within the software industry and examples are Linux, MySQL, Apache and Eclipse (Ebert, 2007). Another example is Skype who offers free calls online, but have a variety of additional features that cost a little such as phone calls to land lines and business group video calls (Skype, 2013).

Distribution model (marketing and sales)

The marketing of APOLLON has changed from traditional advertising to a network-based ambassadorship. In the sales division, APOLLON has switched from informal customer contacts to a more formalized CRM-system. We describe the changes in the following.

As to previous marketing practices, APOLLON has relied heavily on traditional advertising to market its products during its first years in Denmark, such as newspaper advertisement. Besides the high costs incurred, APOLLON did not see the return-on-marketing for these initiatives. Advertisements did not target the right customers in the appropriate way. Most of the successful sales were either made to customers who APOLLON identified and contacted directly (push strategy). Another marketing initiative that APOLLON still pursues is the use of an external PR consultant who tries to get APOLLON into the media with topics that are not necessarily related to its products, e.g., as an innovative employer in the Danish market.

Marketing practices have changed over the last three years. As APOLLON established itself more in the Danish market, customers independently contacted APOLLON as they were referred to the DISPATCH product by their carriers. This led APOLLON to stop advertising and to switch to a pull-strategy that involves 'ambassadors'. APOLLON defines an ambassador as someone that can credibly recommend the DISPATCH product family to a company, such as carriers, sellers of ERP-software, and logistics experts who switch jobs. By using ambassadors, APOLLON also hopes to get access to SMEs. However, we did not identify initiatives that allowed APOLLON to actively steer this ambassadorial process.

Concerning sales, APOLLON employees a sales force of four people (out of 20). In the beginning, the sales pitches were informal and relied strongly on the characteristics of the sales person. As it grew to 20 employees, APOLLON found that sharing knowledge about product features became increasingly difficult. This led to a formalized customer relationship management (CRM). For instance, it comprises the mode of contact, information packages for the customer, sales demonstration, technical requirements, and documentation of the customer relationship.

Introducing the new online and mobile products aiming at the small entrepreneurial customers, the marketing and sales can be linked to the revenue logic; by giving the new products away for free is in fact a specific marketing and sales technique which is also highlighted by the CEO

> *"The idea of focusing on the small startups is to capture them later in their development. It is marketing, a way of capturing customers".*

It is an investment in potential customers just like traditional marketing costs, and this is exactly how APOLLON sees it.

Services and implementation model

Service and CRM are essential parts of APOLLON's Business Model because APOLLON generates most of its revenues from existing customers. The number of customers has not grown substantially over the last 3 years, but APOLLON has successfully managed to increase revenues from the existing customers. The stalled growth, however, is a problem for the sustainability of the Business Model, given that competitors might be interested in entering the market, and only 15% of the whole market potential is yet accessed. As described, APOLLON attempts to gain a larger market share during the next years with its new products.
Customers have unlimited access to service and maintenance free of charge, as the CEO implies:

> *"Of course we create profit from our software, but ultimately we create a good profit because we provide good customer service."*

The employees in the service department are evaluated based on a "*customers served ratio*", which encourages the quick resolution of problems and shortens waiting time for the customers in line. While new customers naturally require service more often, there is no sign that companies make excessive use of the service. On average, APOLLON provides service to a customer four times a year, where the service load is highest after the regular updates of the software. To underscore the importance of service, we observed that the number of employees in the service department (8)—a cost center—is twice as high as the revenue-generating sales department (4). Also, the service department occupies the most prominent and central office space at APOLLON. However, this may very well be linked to both product and marketing strategy. The service provided is part of the knowledge based product. Likewise, the service provided is a further sustainable marketing approach used to keep the customers.

Innovation

So far, we have documented how the Business Model of APOLLN has evolved over the past 10 years. Specifically, we have emphasized substantial changes in the product strategy, the revenue logic, and the distribution model. Nevertheless, our chosen framework from Rajala et al. (2003) cannot explain why these changes happened. We therefore suggest expanding this framework by the element of '*innovation*' as suggested by Zott et al. (2011), because innovation happens due to external and internal impulses (also see the more recent work of Rajala et al., 2012).

External impulses: Customer focus

Innovation in the product strategy received impulses from the sales force. They described the customer needs and thereby provided the basis for new products like PORTAL or MOBILE. They were supported by the service department, whose employees could contribute experiences with problems that customers frequently encountered. This way, APOLLON could not only satisfy current needs of customers but also anticipate their current necessities. This phenomena can be referred to what Zott (2011) describes as a commercialization of innovative ideas and technologies where free products becomes part of the innovation process and commercialization.

The revenue logic is further connected to this type of innovation, and the case study shows a changing revenue model due to external impulses. Sales representatives and top management suggested that also carriers could be targeted as customers. Another change was that the previously profitably sold product DISPATCH was released in a more modern and better version (ONLINE) but then given away for free, including all necessary service and maintenance. This—at first sight—counterintuitive move will grant APOLLON a stronger position in the market, more market share, more locked-in customers, and higher customer loyalty. The idea also signals that in order to access SMEs, APOLLON has to adjust to the initially weak cash flows of these SMEs and postpone generating revenue to a later stage.

Innovations in distribution were moreover triggered by external impulses. APOLLON closely observed how DISPATCH spread in the market, how new customers heard about it, and how the decisions to buy were made. This led to the abandonment of advertisement (push marketing) and the introduction of ambassadors (pull marketing).

Internal impulses: Knowledge sharing

The external impulses for innovation had to be processed by APOLLON through internal knowledge sharing or *open innovation* (Rajala et al., 2012). Knowledge sharing occurs informally, e.g. through the culture of openness, egalitarianism and communication that APOLLON's top management promotes.

Formalized processes include the monthly "*Second Friday Meeting*" that takes an efficient 90 minutes only. The intention of the meeting is that employees understand what is going on in the company, and to encourage debates and dialogues beyond the meeting. Typical topics include the explanation of financial and non-financial key performance indicators by CEO and CFO, state of affairs with new or large customers, practical problems of everyday work, and product-related improvements. Also, APOLLON has joined this electronic platform 'Yammer' to facilitate knowledge exchange within and across all divisions in Scandinavia and Romania, and the headquarters in Norway. The high degree of innovation processes in APOLLON is further sustained by both the CEO and his assistant:

> *"[…] I would definitely highlight that we test A LOT of different things. And there are many things which do not succeed of course, but then there are other things where we prove ourselves and we can see that we are really good. We are quick in capturing new ideas, but also quick in testing them."*

Exactly these elements highlight a sustainable and integrated degree of innovation in the organizational culture.

Discussion

This study addresses *elements of a Business Model as well as the antecedents and consequences of a Business Model change in the software industry*. Following the framework of Rajala et al. (2003), we demonstrate how changes in technology, shifting customer demands as well as the possibility of new market entrants change the Business Model of a software company, specifically its product strategy, its revenue model towards turning profitable core products into freeware, as well as its distribution model. In the following, we will discuss if APOLLON has successfully managed to switch from its previous Business Model to a new one (Rajala and Westerlund, 2007), and what its future opportunities and challenges are.

The current and future challenges for APOLLON

Relating to Rajala and Westerlund's (2007) four suggested Business Models in the software industry, our analysis suggests that APOLLON has moved from a type IV Business Model (standard offerings business) to a type II Business Model (system solution business). The latter implies offering of uniform core solution (DISPATCH) that can be modified for customers through modular components. But APOLLON still has some characteristics of its previous Business Model. According to Popp (2011), multiple Business Model characteristics—defined as a hybrid Business Model—are often necessary within the software industry. However, this type of hybrid Business Model refers to the dual value creation of software companies' product strategy: the

software as a product and the software as a service. In this respect, APOLLON has a well-defined hybrid Business Model with a high level of service and expertise offered to the customers, along with sustainable software products. Regarding the revenue logic and customer segmentation, we suggest that APOLLON should focus on a type II Business Model by improving its capabilities on the two decisive factors of Business Model choice in the software industry: the level of homogeneity of offering and the degree of involvement in customer relationships (Rajala and Westerlund, 2007):

To begin with, APOLLON achieved higher profitability with their new Business Model. The increase in costs for additional sales staff had been more than recovered in the following year by substantially increased sales.

As to homogeneity, APOLLON has diversified its product strategy by responding to the new internet-based and portable-device-related demands of customers. The change is not so fundamental that it could become a type I or III Business Model, but sufficient to give customers a reason to intensify their relationships. Rajala and Westerlund (2007) emphasize that more heterogeneous offerings are an appropriate solution for companies with a smaller number of customers such as APOLLON, whose Danish market is estimated at not more than 10,600 customers. Besides the different products that APOLLON currently possess, there are more levers of heterogeneity, such as the different possible integrations into ERP using SQL, API and FileDrop. This higher degree of customization creates entry barriers for the competition from Sweden by increasing the switching costs of the customers.

As to customer relationships, APOLLON should use the higher degree of customization to deepen relationships. At the moment, APOLLON has contact with each customer on average every three month. First, CRM is a feasible way of increasing the frequency of these contacts and to secure APOLLON a more sustainable type II Business Model. Second, APOLLON could improve is its new marketing strategy of ambassadors. While we agree that it seems as a clear improvement over the previous advertising strategy, APOLLON could employ more pro-active strategies to steer the development of its word-of-mouth networks into the right direction. Third, the new revenue model where MOBILE is given away for free needs to be secured by creating long-term bonds to the relevant SMEs. That way, the likelihood of generating future revenue increases.

The freeware strategic option, according to the APOLLON model increases future revenues, but according to Haruvy and Prasad (2005) two additional factors play an increasing role in freeware solutions; it is a beneficial strategy in order to deter a rival from entering the market and it contributes to rapid access and growth within a particular market. These factors are naturally interrelated with the long-term bond established to relevant SMEs. However, according to Riehle (2012) caution in this Business Model should be taken in this approach for product managers to carefully plan the interface of the free open access customers and the paying customers in order to avoid customer dissatisfaction. The costing structure is relevant in these considerations since it naturally establish the maneuverable possibilities for APOLLON.
An additional challenge for APOLLON is to consider the type of innovation implied in their Business Model. The current Business Model has several closed innovation attributes. This means that the research and development is internal and not open towards external stakeholders (Rajala et al., 2012). The advantage of using a closed innovation mode is being the first to the market, securing future revenues. On the contrary, an open innovation mode reveals research and development ideas, but simultaneously innovations emerges from stakeholders needs and APOLLON could thereby create a more sustainable Business Model (Chesbrough, 2003; Chesbrough and Appleyard, 2007; Ebert, 2007; Rajala et al., 2012). Though APOLLON also indicates some open innovation, this could be more prominent, for example by sharing Yammar with the different freight companies or some of the major customers.

Zott (2011) identifies several areas of literature within business model innovation. In particular, open innovation and collaborative entrepreneurship (Miles et al., 2006) are highlighted as emergent strategies within knowledge based companies like APOLLON. Likewise, the open innovation is closely related to possibilities of facing Business Model changes due to an incorporated flexibility in the organizational culture which has been proven essential in sustaining global competitiveness (Calia et al., 2007; Rajala et al., 2012). This type of in-

novation due to increased competition which directly forces organizations to change some of their core business model is similar to evolutionary change where survival in a competitive environment forces organizations to adapt their business concepts accordingly (Ven and Poole, 1995). Though at this point, APOLLON appears to purposely adopt the freeware approach, the innovative approach to other markets with diversified products is not necessarily similar to other evolutionary companies like SAP who became a market leader through cooperation with IBM (Leimbach, 2008). Similarities, however, can be found in the adaptability of capture opportunities at the right moments which exactly represent the dynamic transformational strategy approach found in evolutionary business models (Demil and Lecocq, 2010).

Contributions

More specifically, our study has several implications for Business Models in the software industry. First, we demonstrate that the framework of Rajala et al. (2003) can reasonably well describe a Business Model in the software industry. Our case study suggests that this framework should be extended by the element of *Innovation* to be better able to explain where innovation comes from and why Business Models change. This can successfully be combined with elements from the Business Model change literature which through, for example, evolution capture some of the emergent strategies in software companies. Most notably, the case has illustrated that the product change was induced by new technological possibilities and client needs, rather than by the general desire to be innovative in the field. This is because APOLLON does not face fierce competition, which does not require them to be highly innovative. We did not find any indication that APOLLON considered competitive forces or other companies' experiences. The innovation was mainly driven by technology and clients.

Second, we use the four Business Model types suggested by Rajala and Westerlund (2007) to categorize the Business Model of APOLLON. Our case study illustrates that the switch from one Business Model to the other such as APOLLON did not require a rearrangement of the elements of the Business Model, such as different products, revenue models or distribution models. We thereby contribute that the focus on the practical implementation of Business Models deserves the attention of future research. Additionally, this witnesses a neglected importance of flexibility and adaptation in the organizations Business Model where the Business Model frequently is identified as a static description of how the organization create value for consumers which partly supports the findings of Johnson, Christensen and Kagermann (2008), Casadesus-Masanell and Ricart (2010), and Rajala, Westerlund and Møller (2012). This particular case has demonstrated how increased organizational complexity, rapid growth in software industry and lack of entry barriers to the software market supports a growing need for emergent strategy tools which should be incorporated in the Business Model design in order to capture a holistic approach and management control system for the organizations.

Future research

Innovation was a central driver of change in the case study presented here. We suggest that this element should be added to the framework of Rajala et al. (2003). Yet, there are several other elements that are seen either as external to a Business Model in the software industry, or that not mentioned yet. Future research could investigate such elements, e.g., the role of different employee capabilities, dealing with uncertainty by the top management, or mechanisms by which the networks of sales representatives function.

Conclusion

This study contributes by illustrating a Business Model in the software industry, as well as the antecedents and consequences of Business Model change. Thereby, we challenge existing theory in this field and suggest that innovation has not been sufficiently addressed when explaining Business Model change in the software industry. Our case study gives an example how Business Model change can be better understood if both the origin and the role of innovation are more appreciated.

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Competing With the Use of Business Model innovation - an Exploratory Case Study of the Journey of Born Global Firms.

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Abstract

Purpose: The purpose of this article is to investigate how business models are used by born global firms to act upon new business opportunities and how they manage business model innovation over time to prosper and grow.

Design/Methodology: The study is based on three exploratory case studies of born global firms in mobile communication, financial services and digital music distribution.

Findings: Three interrelated capabilities to manage business model innovation are articulated in the context of born global firms; sensing capabilities, entrepreneurial capabilities and relational capabilities and four propositions are formulated. We find that business model innovations are used as a tool by maturing born global firms to navigate the value chains and achieve international growth. We further propose that born global need the capabilities to balance different business model designs simultaneously and to manage its business model innovation in a timely manner.

Originality: This article contributes to both the business model literature and research of international entrepreneurship. By putting business model research into the dynamic context of rapidly internationalizing born global firms, we contribute to the field of business model research with findings of how business models are used in the internationalization processes. Certain capabilities are needed to manage business model innovation for born global firms to dynamically use business models as a tool in the international growth overtime.

Keywords: Internationalization, born global firms, business model innovation, dynamic capabilities

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Introduction

During the last few decades, drivers such as open innovation systems, rapid development of new technologies and the globalization of markets have changed the competitive game (Chesbrough, 2006; Casadesus-Masanell and Ricart, 2010). These changes have re-arranged previously closed value chains and competitive structures and opened up for new business opportunities (Bengtsson and Johansson, 2012). A type of firms that have capitalized on these emerging business opportunities are born global firms; young firms characterized by a rapid international growth and innovativeness from their inception (Oviatt and McDougall, 1994; Moen and Servais, 2002; Gabrielsson, *et al*. 2008). Born global firms can identify and act upon novel opportunities due to fast access to international networks, (Coviello, 2006) international customers (Gabrielsson, *et al.,* 2008) and international financing (Makela and Makula, 2005). However, with new business opportunities also comes remarkable challenges in regards to how to design the business model to present and package its value proposition to customers, and to create, deliver and capture value in a marketplace where competition could be global from day one (Teece, 2007: 2010; Chesbrough, 2007). These aforementioned challenges embedded in the global business environment are arguably compounded for born global firms, as they often are small and new firms with limited resources and market presence, and acting in a context of uncertainty exploring new and nascent markets (Katila, *et al.,* 2008; Santos and Eisenhardt, 2009). Thus, the ability to design business models for navigating this landscape of turbulence and uncertainty are crucial for born global firms and could be considered a distinguishing feature for this type of firms.

Until now, little is known specifically about how born global firms design their business model to act upon new opportunities in the international marketplace, and how they create and capture value over time in a global context. Due to both the lack of resources and the uncertainty of new markets, value is often co-created with partners, suppliers and customers as well as competitors- with the challenge to generate value for the firm as well as for its stakeholders. The born global firm's performance is thus dependent upon boundary-spanning organizational arrangements which imply another set of challenges in itself. The business model is argued to be one of these boundary-spanning activities, and involves a simultaneous co-creation and capture of value in an ecosystem of partners (Zott and Amit, 2007; 2010). Moreover, in order to prosper and grow the firms need capabilities to adapt and transform its business model design over time, which is a complex art. More research is called for to provide insights into the process of business model innovation over time (Trimi and Berbegal-Mirabent, 2012). Business model innovation can be viewed as changes in how the firm does business in respect to how it creates, delivers and captures value (Amit and Zott, 2012; Teece, 2010; Teece, 2007). It can for instance be to redefine an existing product, service and value proposition and/or how the firm profit from the customer offering (Björkdahl 2009; Björkdahl and Holmen, 2013).

Despite the increasing academic attention to business models and born global firms, there is a dearth of research focused on why born global firms adopt a certain business model design, and how born global firms undergo processes of business model innovation to pursue rapid growth in multiple countries (with some exceptions see e.g. Dunford *et al.,* 2010). Thus we ask the following research questions: How do born global firms use business models to act upon business opportunities? How does the born global firm manage business model innovation over time in order to grow in international markets? The purpose of this paper is to investigate how business model design is used by born global firms to act upon new business opportunities, and how they manage business model innovation over time to grow on international markets. To reach that purpose, we employ the dynamic capability perspective. Dynamic capabilities could be said to be based on the notion of the firm's need to build new competences, skills and reconfigure existing routines leveraging both internal and external resources (Teece 1997; 2007). In line with recent papers on dynamic capabilities (Helfat and Peteraf 2009; Schilke, 2013) we highlight a set of relevant business processes or challenges, which are

derived from our empirical material. In the context of the born global firms in this study, these process and challenges relate to partner relationships, value chain positions, retention of entrepreneurial mindset of the firm and the foresight to navigate a dynamic business environment. Going through these processes and dealing with the aforementioned challenges required a particular set of dynamic capabilities behalf of the case firms. We identified three distinct types of dynamic capabilities affecting business model design, innovation and international growth.

Empirically, we have conducted three exploratory case studies of born global firms that all have acted upon novel opportunities and created new market niches in their journey of internationalization. This article contributes both to the field of international entrepreneurship and born global research and to the emerging business model literature. Firstly, it provides longitudinal insights of born global firms past their early internationalization stage and provides insight to how they have sustained international operations and remained competitive for over a decade since inception, which is concurrent with research calls by Dimitratos (2005), Keupp *et al.* (2009) and Jones *et al.* (2011). Secondly, it enriches our understanding of how the use of business model designs and capabilities to manage business model innovation can contribute to firms' internationalization and growth. In order to advance the business model research we argue with other entrepreneurship scholars that focus must develop from what business models are towards what business models do (Doganova and Eyquem-Renault, 2009), and consequently how business models are used by the entrepreneurs. Finally, the paper identifies and articulates three interrelated type of dynamic capabilities to manage business model innovation in the context of born global firms: sensing capabilities, entrepreneurial capabilities and relational capabilities.

Theoretical Background

Born Globals Acting in a Highly Competitive and Turbulent Context

Starting in the early 90's, research noted that some young entrepreneurial firms followed a different pattern of internationalization, i.e. doing it rapidly after inception and often with a large scope. This contradicted past research of firms internationalization processes, which advocating slow, incremental patterns of internationalization. These young entrepreneurial firms have commonly been labeled either born global firms (Knight and Cavusgil, 1996) or international new ventures (Oviatt and McDougall, 1994) in the academic literature. They however tend to share a broad common definition, which we also follow in this study: "*A business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of output in multiple countries*" (Oviatt and McDougall, 1994:50). Born global firms are often found in knowledge intensive and high tech industries with environmental turbulence (Oviatt and McDougall 1994; Autio *et. al.,* 2000: Gabrielsson *et al.,* 2004). However, these new and small firms often face dilemmas as characteristics which have facilitated the emergence of these firms, are also providing a set of challenges. These challenges could be in terms of internal and external pressures on the firm to innovate in a fast-phase and being internationally competitive, while these firms often are resource-scarce, niche-oriented, with limited market presence and international experience (Weeravardena *et al.,* 2007; Sainio *et al.,* 2011). This could provide for difficult trade-off decisions as how to allocate a limited bulk of resources. (Autio *et al.,* 2000; Gilbert *et al.,* 2006). Arguably, this impacts business model design and business model innovation decisions for born global firms, as resource scarcity and other limitations might inhibit business model innovation.

Business Model Design of Born Global Firms

The academic interest in business models has increased during the past decade with extensive research focusing on what business models are in form of definitions and conceptualizations, although the construct is still being disperse and inconsistent in scope and focus (se eg. Teece,

2010; Zott *et al.*,2011). Business models have been related to strategy (Teece, 2010; Chesbrough, 2010), entrepreneurship (George &; Bock 2011; Huarng 2013) and international entrepreneurship (Sainio, *et al.,* 2011). While our research aim is not to involve in the debate of definition of the concept, we contribute to the research field by revealing how business models and business model innovation are used in the context of born global firms, being a specific type of entrepreneurial venture. Business model design represents an important component in the opportunity recognition and exploitation of these firms (Downing, 2005; Franke et al., 2008; George &; Bock, 2011). The identification, evaluation and exploitation of opportunities are also an emergent theme in the international entrepreneurship literature (Dimitratos and Jones, 2005; Sainio *et al.,* 2011). The concept of business model being opportunity centric is therefore helpful in further understanding the behavior of born global firms. We follow the broad definition of business models by Teece (2010) as the design of how to identify, create and deliver value and how to capture parts of this value. Chesbrough et al. (2002) argues that a business model focuses more on value creation and value delivery rather than value capturing and competitive threats, where the latter concepts are more in the realm of strategy. However, as it is claimed by Teece (2010) that understanding how to capture value from innovation is a key element of business model design. These two logics of creating and capturing value are therefore intertwined and difficult to separate, in particular in situations of co-creation of value with other actors.

Zott and Amit (2010) defines business models as firms' activity systems consisting of certain dominant value creation drivers such as novelty, efficiency, complementarity and customer lock-in. The efficiency-centered business model design relates to exploitation of business opportunities and the measures taken to achieve transaction efficiency through the business models. A business model designed for lock-in of either customers or partners can be manifested by high switching costs and network externalities derived from the business model design. A novelty-centered business model design relates to the exploration phase in the identification of new opportunities and new ways of doing businesses, which could include different constellation of partners, suppliers, customers and competitors. However the development of new opportunities is challenging for small firms, as is sustaining them over time (Bengtsson and Johansson 2012). An important capability is therefore how to balance the novelty and efficiency-based business models as well as managing the lock-ins, in order to sustain competitive over time. Over time and as the firm grow, these different value creation drivers and related structures often need to be managed simultaneously and tensions can emanate from their different logic of actions (March 1991). It requires a capability of the entrepreneur to manage a balance in particular between novelty and efficiency as they arguably are based on partially contradictory logics. Taken into consideration that born global firms are likely to face a limitation of resources this balance is even more important in order to prosper and grow on international markets.

Business Model Innovation

Business models and their designs are not static structures, but something which constantly needs to be reassessed and re-evaluated, as the hypotheses provided by the business model continuously are tested against a changing reality in the marketplace (Teece, 2010; Dunford *et al.,* 2010). Hence, the need for business model innovation, which could be a pathway to a competitive advantage for firms as well as a form of corporate renewal. Similar to Amit and Zott (2012), we view business model innovation as changes in "how to do business". Specifically, we then consider changes in how firms create, deliver and capture value as business model innovations. Thus in concrete terms, this paper will operationalize business model innovation in accordance with Björkdahl and Holmén (2013) as "…to redefine an existing product or service, how it is delivered to customer and/or how the firm profit from the customer offering." In terms of firms operating in high-tech industries (as born global firms often are), it is often argued that

technological innovation needs to be accompanied by business model innovation in order to capture value (Teece, 2010). In essence, a business model could both be a vehicle driving the innovation of the firms as well as being a subject of innovation by itself (Zott *et al.,* 2011). However, as prior research indicates, once a business model has been set in an organization with activities and dedicated resources the structure can be difficult to change due to built-up routines with a risk of inertia and resistance to change (Zott and Amit, 2010). Business model innovation is though challenging and barriers for business model innovation could include a cognitive inability by managers to see the value of a new business model as well as resistance in form of established configurations of resources and processes within the firm, which could lead to a state of inertia. (Chesbrough, 2010) Taken together, the born global firms need certain capabilities to manage a balance between existing business models and business model innovation over time. Similarly, both a balance in acting upon novelty and efficiency in business model design, as well as capabilities to re-shape strategic choices according to different and changing market demands are needed (Trimi and Berbegal-Mirabent, 2012).

Capabilities to Manage Business Model Innovation

George and Bock (2011) call for further research into how business models and capability development of entrepreneurial firms may interplay. As born global firms are operating in a highly dynamic and competitive international business environment, with high demands of innovation, the firms arguably need to realign organizational practices, such as business models, to meet ever changing challenges, as discussed in the previous section. Thus, going by Teece's (2007) definition of dynamic capabilities: "...capabilities of sensing business opportunities, seizing them and managing threats/transforming the business", one can pinpoint a connection with change and innovation of the business model with the concept of dynamic capabilities. Thus, dynamic capabilities could then be viewed upon as capabilities of sensing business opportunities, seizing them and managing threats/transforming the business (Teece 2007). However, a conceptual paper by Zahra et al. (2006) advocates the notion that dynamic capabilities are a higher-order capability, reshaping or reconfiguring lower-order capabilities, called substantive capabilities. Substantive capabilities are fundamentally based on existing functional competences within the firm, whereas, consequently, dynamic capabilities could be utilized for changing or re-configuring those capabilities. (Zahra et al. 2006; Autio et al. 2011) Firms could though be more or less characterized by either substantive or dynamic capabilities at different circumstances or developmental stage and the interplay and balance between the two types of capabilities could be crucial for the firm's wealth creation (Zahra *et al.,* 2006; Kreiser, 2011).

Methodology

This paper is built on three exploratory case studies of born global firms in the turbulent global industries of mobile communication, financial services and music distribution. A case study approach has been chosen as we study a context-dependent, complex and understudied phenomenon of how born global firm use business models to act upon opportunities (Eisenhardt and Graebner, 2007) This approach is most appropriate for understanding how and why firms act and react in managing business model innovations. The case study method allows both the description of network structures of the firms and their development processes over time.

The firms studied are Seamless Ltd., Xelerated Ltd and Toontrack Ltd. These three firms have all acted upon new opportunities, used their business models to create and capture value and managed to grow with the use of business model innovation. This is expressed by their growth in number of employees and turnover. All three case companies have during their journeys capitalized on new opportunities and internationalized in a fast phase. Descriptive data of the born global firms are provided in Table 1.

Table 1: Descriptive Data of the Firms

	Seamless Ltd.	Xelerated	Toontrack
Founding year	2001	2000	1999
Number of employees (2012)	120	91 (2011)	24
Turnover (year 2012)	20, 1 million USD	14,6 million USD (2011)	5,2 million USD
International sales % (2012)	80%	100% (2011)	90%
ISIC code	61200 Wireless Telecommunications 62010 Data Programing	72190 Other science and technological R&D	59200 Sound recording and Music
Key innovation	Platform for pre-paid electronic distribution, mobile payment ecosystem.	Dataflow architecture for high-speed programmable network processing	Audio library software for professional and hobby music production.

In order to increase the understanding of how business model innovation is managed over time we did undertake a longitudinal approach. We have followed the three case companies over a ten year period. The case study of Xelerated was conducted from year 2000 to 2012 (years 2000-2004 were studied retrospectively). The case study of Seamless was conducted from 2010 to 2013 (years 2001-2010 were studied retrospectively). Similarly the third case study of Toontrack was conducted from 2012 to 2013 and retrospectively from its start up. This approach with three case studies in different settings and studied over time can yield further accurate and robust theories compared to a single case study (Eisenhardt and Graebner, 2007). It also answers calls for longitudinal research on born globals firms and entrepreneurial firms in general (Jones and Coviello 2004; McKelvie and Davidsson 2009).

Business models can be depicted by "the stories that explain how the enterprise works" (Margetta 2002: 97). In order to understand how the entrepreneurs depict their business model and how it evolved, we listen to the entrepreneurs' stories of how different events and critical incidents emerged during their growth from identifying new opportunity, pursue of technological innovation and how they managed their expansion and growth with the use of business model innovations (Maitlis, 2005). These entrepreneurs offer their stories which link their personal aspiration and mindset to the operations, internationalization and growth of the firm, and the social context, therefore their stories offer a substantial ground to identify meaningful patterns (Dimov, 2010).

Data collection

The primary data for the study consist of ten interviews with entrepreneurs/CEOs and managers

within the firms. The interviews were semi-structured and the questions were thematically arranged. The interviews fell in the range of 90-120 minutes each. The interviews were recorded and transcribed verbatim close after the interview. The initial interviews focused around the company background, perception of its development from the startup and growth on the international market, and structural questions about its ecosystems of customers, partners, suppliers and competitors and business model design. The following interviews became more structured and theme-based. See appendix 1 for the interview guide used. The respondents were asked to talk freely about their venture, how they sensed and acted upon opportunities in different situations, how and why its business model did change over time as the venture internationalize and grow, critical incidents in their journey and its effects, as well as processes and capabilities needed. The answers were followed up with questions such as "how," "why," and requests to "exemplify".

We have systematically analyzed archival data in form of company reports, industry reports, press-releases and newspaper articles. The archival data was used as important complement to the stories of the entrepreneurs and as historical reference points to capture how and when the companies changed business model in order to capture new opportunities, new customers or entering new market niches.

Data analysis

We started the analytic work by analyzing each entrepreneur's narratives of their startups, how they acted upon opportunities, and how and why their business model have evolved and changed over time. From the narratives, complemented by archival data, the cases were written up in rather extensive detail to provide a general understanding of the context and chronology of the events. These early case descriptions were sent out to the respondents for approval and correction of any misinterpretations. The aim of this study is to develop theory and the analytic work has been an iterative process going back and forth, coding the empirical data (Maanen 1979; Nag et al. 2007), and comparing the findings to concept within the literature of born globals and more specifically opportunity identification, use of business models and firms' capabilities to manage business model innovation.

Findings

Seamless

Our first case is Seamless, a born global firm with a very insightful global journey where the firm continuously have used and transformed its business model to innovate, compete and grow on an international market. Seamless started as a spin-off in 1999 by an entrepreneur who identified a novel opportunity to rationalize the handling of all mobile pre-paid distributions by making it possible for users to recharge their pre-paid mobile account digitally. Seamless pioneered within this niche and with the use of its business model the entrepreneur created a new market. The journey of the firm show how it successfully have innovated, competed and grown on an international market and with several business model innovations over time.

The initial business model was designed as a joint venture with the world's largest card distributor, Brightpoint. Brightpoint had the market position, the customer base, the codes and Seamless had the technology to rationalize the pre-paid distribution. However, at this time the financial crisis came in early 2000 and the entrepreneurs realized that nothing was going to happen on a short-term basis. The entrepreneurs forced themselves to take a step back and reconsider how to proceed. Seamless decided at this stage to transform their business model and focus its activities becoming a software license company. With the corresponding business model Brightpoint became its customer and Seamless could reach the global market through the global customers' market channel. During this time Seamless technological innovation was launched globally in twenty countries and with Seamless product the entire market of pre-paid distribution was converted into electronic top up.

"We developed a business model that was very successful and long-term it was remarkable nice. We were able to enter into an existing business and converge it into a digital business"

- Founder, VP Business Development Seamless

The value creation in this business model was built on a revenue share agreement, with no significant investments required from the customers, or the partners, which opened up for Seamless to enter into international markets through established distribution channels.

"if we look back it was successful, we travelled all around the world and signed contracts with a number of different companies that wanted to invest in this technology".

Seamless grew rapidly on the global markets, however, in 2001 the entrepreneurs found themselves trapped in the design elements of its business model, the company did not capture enough value although it grew rapidly in multiple countries. Their partners, sales agents and customers did not invest enough time and resources in order to develop into a viable and scalable business over time.

"here we learned the hard way the advantages and disadvantages to not have a business model that requires a firm to commit time and resources or capital investment",

- Founder, VP Business Development Seamless

At this stage, the company transformed its business model once again in order to capture a higher level of value. During this time the company also brought in a new CEO with a background in the telecommunication industry. Seamless had operated indirectly with the telecommunication companies, but now it changed its focus and decided to sell directly to the large telecom system providers or to mobile operators. In 2005 Seamless started to collaborate with Ericsson in selected markets. The business model design at this phase was opposite from the first one. It focused on short-term revenues and mirrored Ericsson's business model of selling licenses. Another change with this business model was that Seamless took a step back in the value chain, from its position in direct relation with the distributors back to the OEM system solutions. In 2007, Seamless signed a global partnership agreement with Ericsson which enabled the born global firm to reach the leading mobile operators worldwide. This led to several important deals with mobile operators in Africa, Middle East and Asia and the born global firm grew on the international market together with the customer. With this business model Seamless technology eventually became an integrated part of Ericsson's prepaid charging portfolio. The set up with Ericsson helped Seamless to continue to grow on the international market and to learn about the business model design of "pay-as-you-grow" into different market. Seamless also directly signed a group frame agreement for the supply of its top-up solution with MTN Group, the largest mobile network operator in Africa and Middle East.

Through the relationship with Ericsson and the mobile operators Seamless hence successfully entered and grew in the market. The integration of its platform into the system of these multinational partners gave value capture advantages such as long-term revenues and network externalities with a global reach as well as high switching costs. However, the disadvantage was that Seamless was a third party supplier, positioned far from the end-customer and more or less invisible as the system is sold as an Ericsson product, with a so-called white label model.

"We have continued to work with these two business models during the years, we have just refined and configured them towards different customers' demands",

- Founder, VP Business Development Seamless

In a third phase during 2011-2012, Seamless once again innovated with a new business model, building on the established technological platform and distribution system of the company. Seamless

got a new shareholder and CEO with background in the financial service segment and developed a new, third business model for the mobile money segment. At this stage, the organization found itself very colored by firstly the internet-based business model build on transaction and secondly the OEM model from telecommunication. However, Seamless now made a strategic move from selling products to become a service provider and released its solution SEQR for mobile payment. The value proposition to the customer, retail stores builds on cost-effectiveness and Seamless mobile money solution offer a decrease of 50 percent of the retailer's costs of transaction.

By business model innovation could Seamless entered into the mobile money market and were able to position it selves on the top of the value chain in direct interface with the end-customer.

"For the first time with SEQR we are taking the "elevator" up to the top of the value chain, we are no longer at the bottom floor, now we are in the penthouse",
- Founder, VP Business Development Seamless

In 2013 Seamless had signed contracts with a number of international retail chains such as McDonalds as well as leading retail chains in Sweden (such as Axfood, Mekonomen and Nilson Group) and other segment such as Q-Park, one of the largest car parking operators. Seamless saw the potential with the existing customer base of millions of customers and billions of transactions from the digital distribution system and by innovating with the business model and position themselves on the top of the value chain. With this third business model innovation the company felt confident to not be a sub-supplier position under a bank or a telecom vendor as it includes the risk of being dependent as well as exchangeable during time when the technology matures and the competition is built on price.

With the business model invented for the mobile money segment the strategy is to expand the company and raise the volume of transaction and businesses; comparing its business model to Google's, building on scale and large volumes and to charge for added value services. However, although this business model holds a number of potential it is also comes with huge risks. Building an own brand towards end-customer are very costly, especially for a SME. However, it is a strategic choice made by Seamless and it's SEQR portfolio to not position itself further back in the value chain.

"Coincidently, we are in a way closer to the business model in stage one again, however, this time the revenues are higher and we are in control, which is a combination of financing and position in the value chain"
- Founder, VP Business Development Seamless

The company currently uses all of the above mentioned business models as each business opportunities require a unique business model. The challenge with having multiple business models is however how to manage a balance and to combine the different business model designs.

"It's the challenge to balance these to gain revenue and invest in the new business model which is very expensive …it is gas and brake applied all the time"

The company also changed its internationalization strategies and decided to internationalize and grow through setting up own offices globally. In 2012 Seamless had offices in cities such as Accra, Calcutta, Lahore, Mumbai, Riga, Lodz and Sweden. In January 2013 it opened offices in England and Poland.

Xelerated

The second case is Xelerated, a born global firm that has gone through a process of pursuing technological innovation where both technological and market opportunities have been capitalized with the use of the firms boundary spanning business model. Xelerated is specialized on programmable network processors with a patent

of a technology for programmable processing i.e. the dataflow architecture. Its business model has throughout journey focused on R&D, design and sales as the production of the hardware is outsourced to a silicon foundry in Taiwan. Xelerated has deliberately changed the design elements in form of structure and content of the firm's eco system and network relationship of internationalization and growth.

Xelerated started in august 2000 as a spin-off by four experienced engineers. The founders had an innovative idea about how to control the data flow and invented architecture for programmable network processing of data at a very high speed. In the start-up phase the business model design was to develop the product, define and patent the dataflow architecture surrounding the application, search for external funding and recruit key staff. The network relations of the founders have always been the cornerstone in the company's action and vital part of the firm's creation of value. The founders had a list with names of people they wanted to recruit; former colleagues, people they knew to be competent engineers and trustworthy persons with extended personal networks in the industry. Xelerated went from eight to thirty employees in eight months during the start-up phase.

Already in the start-up phase Xelerated started to build an ecosystem of partners around its product. These partnerships are an important cornerstone in Xelerated's business model as its product is dependent upon interoperability with a number of partners. For example, in 2001 Xelerated initiated a partnership agreement with NetLogic, a partnership that have followed the born global firm through its journey to being recognized worldwide as a leading technology partner for high-speed network processing.

"Having a best-in-class network search engine supplier like NetLogic is critical to our success",

Founder, CEO
Xelerated

In 2003 Xelerated received their network processor chip from its foundry, two and a half year after the company started and during this time the major market and sales phase began. The customers were multinational IT and telecom system vendors, such as Fuijitsu and Huawei. In this phase, Xelerated initiated cooperation with large partners to gain legitimacy in the sales activities with the global customers. Xelerated initiated a distribution agreement with Infineon a large supplier of semiconductor chips. Through this collaboration Xelerated accessed a global customer base.

"Our joint efforts have already paid off and by working with Infineon's worldwide sales force we will be able to go after an even larger customer"

Founder, CEO
Xelerated

The business model arrangement between the two firms was that Infineon had production rights that could be used if Xelerated were unable to deliver its product. This arrangement reduced the customer's perceived risk of doing business with a small firm. Xelerated benefited from Infineon's credibility and resource strength as a large firm in their interactions with global customers, which was important for their development and growth.

Xelerated continued to build the ecosystem around its product as a part of the firm's boundary-spanning business model activities and made a number of joint sales trips with partners. In year 2002 Xelerated built strategic alliances with companies such as PMC Sierra, IDT and DUNE Network to secure interoperability and to do joint sales activities. The ecosystem of partners and interoperability between the parts was needed in order to deliver value to the global customers, which is illustrated with the following quotations.

"Demonstrating interoperability at high-speeds is a significant milestone that clearly shows Xelerated is on track and delivering on its promises",

Analyst
The Linley Group

"The partnership enables the development and deployment of system solutions that meet the rigorous demands for new generation",

VP Strategic Marketing
IDT.

"Our joint customers want to leverage their development investment across entire product families rather than point products",

Founder, CEO
Xelerated.

In 2006 the large Chinese equipment vendors Huawei and ZTE selects Xelerated product for its next generation network. China is an important growing market for Xelerated and gaining these leading firms as global customer made a clear footprint. In 2010, Huawei recognizes Xelerated as its best supplier, with IBM and Xilinx; shortly after, Xelerated was recognized as a core competence partner within a network of hundred companies. This strong recognition increased its legitimacy in negotiations with other large telecom providers.

Throughout the journey Xelerated have kept a business model where 60 percent is focused on R&D activities with the strategy to sustain a front position and value proposition as being a best-of breed company. Companies with best-of-breed products have pioneered a segment and have developed most features of their products. The global customers want to include best-of-breed products into their solutions to deliver the most cutting edge technology to the market.

4.3 Toontrack

Toontrack, our third case company, started out in 1999 and was founded by a team of entrepreneurs with a passion for music and knowledge in writing computer software. The founders recognized an opportunity for simplifying music production for professionals and enthusiasts alike and in turn creating value for them by decreasing the time and costs involved by producing music.

"I believe that the timing was right for this when we first started out, as previously normal PC's would not yet be powerful enough for this type software to create much value",

- CEO
Toontrack

Toontrack's software permitted the user to use a pre-recorded audio library of drum sounds and insert those sounds into a music production by the user. This was a novel concept in the music industry at the time and soon the founder's found themselves getting email orders through the website from around the world to their office in one of the founder's apartment. The software was then just burnt on a CD and physically shipped by postal mail to the customer. Since then, the company has grown to 24 full-time employees and a turnover of almost 5.2 million USD the vast majority coming from international sales, by the end of the fiscal year 2012.

Over time, the business model of the firm has evolved as well, to facilitate this international growth of the firm. With the software and corresponding business model Toontrack developed a new market niche as illustrated by the following quotation;

"You can say that we started out just like a classical type of mail-order company. There was also no market for this before us, as we developed the product, we developed the market",

- CEO
Toontrack

Rather quickly, Toontrack decided to supplement the initial online sales business model, which existed from day one, with physical distribution to music stores. In 2002, Toontrack had already secured a contract with Sony and other international video game developers, for usage of the Toontrack audio library in video games. The following year, the company reached a distribution agreement with a large North American distributor,

for a wider release of Toontrack's products in the United States through retailers in physical stores. As quoted in 2004:

> *"This is the world's most innovative and highly developed audio library and it will set a future international standard for this type of software",*
>
> - Co-founder and then CEO Toontrack

Even today, the sales revenues from the physical stores exceed those from the online sales.

> *"The gap (between the sales channels) is closing in and will probably continue to do so, but at the moment the majority of our sales comes from the physical stores",*
>
> - CEO Toontrack

One of the advantages with selling through physical stores is that it decreases the costs of marketing for the young firm, which is still today only owned by its original founders and has never taken in any external ownership or capital. Toontrack soon learned the upsides of getting contracts with international distribution firms to get access to resellers abroad and thus tap into the international demand for their products, across both geographical as well as cultural boundaries.

> *"Obviously it is difficult for us here in Sweden to even know the five best stores to get into in say France or Japan, much less getting in touch with them. That is why the distribution contracts have been very beneficial for us in that regard. It could save us time, money and increases the scope of our market",*
>
> - CEO Toontrack

Initially, this paid off quite well for Toontrack, by the end of 2005; the company had doubled its turnover for three consecutive years and had been profitable since its inception. However, having these distribution agreements also comes with a set of challenges, such as lack of control of the product for Toontrack and also the risk of losing the distributor if Toontrack's product does not meet certain sales targets and sometimes the distributor's willingness of marketing the product could decrease as well if they see a lack of interest from the re-seller side. Obviously, enlarging its value chain with distributors and resellers of course also cuts in the firm's value capturing ability in this business model. Recently, Toontrack cancelled the agreements with the distributors in Germany and the United States and exchanged it with a business model to deal directly with the stores for the purpose of gaining increased control of its products in those markets. Technological development, such as the increasing ease of downloading the software, is also contributing to the decreasing importance of distributors. As a function of that, the value delivery and value capturing aspects of Toontrack's business model will likely adapt to these changes in both technology and customer behavior.

> *"It was not really possible to do the download type of business model before 2005, but today it is an established way of buying and delivering software. I think it will develop more as well, meaning that the customer will be more and more likely to buy directly from the producer."*
>
> - CEO Toontrack

Today, the niche market for music producing software has matured considerably and Toontrack could identify 3-4 main competitors to them on the international market and they are all using largely the same type of business models. Instead, the firms are mainly competing with price. Even though there are constant, albeit rather incremental, innovations in the product lines, such as Toontrack recently launching software set for piano sounds, leap-frogging away from the competitors is not easily accomplished.

> *"There is constantly a low-intensity war going on and everyone is watching what everyone is doing. If we release a new product today,*

everyone else will be doing the same or similar things tomorrow. Or vice versa."

- CEO
Toontrack

However, the launch of the piano sound library in 2012, was however considered as a significant innovative step by the firm themselves and by their customers.

"Some of the customers think it is strange since our focus is drums. This is a completely different thing than we normally do; it is the same if Volvo would create bikes."

- CEO
Toontrack

At the same time, Toontrack still has to leverage and exploit its current product line and relationships, while actively trying to scan for input from a variety of stakeholders, such as partners and customers, to come up with both new and innovative products and well as potential business model innovations. In a rapidly changing business context such as computer software, Toontrack has evolved from burning CD's at an private apartment and posting physical goods to its customers, to a business model having customers directly download the software and receiving updates online from Toontrack, diminishing the importance of a vast network of international distributors, the decreases both control and sales margins for the focal firm. The latter business model also provides Toontrack with more avenues for direct contact with the customer and thus learning more about the customer's ideas, behavior and needs.

"We can see that we have room for making things easier for the customer in terms of purchasing and registering the products online. I also believe that customer contact is becoming more and more important, we want to be a firm that the customer could access easily to provide feedback and that really helps us as well.",

- CEO
Toontrack

"I guess that few people know what will happen to a company's business model in five years or whatever amount of time. The only certainty is change, one way or the other. Obviously we have to be ready for that, while still capitalizing what we are good at right now."

- CEO
Toontrack

By the end of 2012, Toontrack was nominated for "Digital Gazelle Company of The Year" in Sweden, an awarded jointly given by Google and the Swedish business media. The aim of the award is to celebrate companies which are in the cutting edge of capturing online business opportunities creatively and efficiently. In the motivation for the nomination, the steps towards the newer business model of Toontrack were highlighted in the press release:

"Toontrack is a first-rate example of how the Internet is not merely a sales channel, but has the ability to act as an international storefront towards a global market".

Discussion and Analysis

Design of Business Models to Act upon New Opportunities

In line with previous research, our study demonstrates how the firms acted upon new opportunities to create and capture value with the use of business model designs, which in turn helped the firms to shape, and modify the business opportunity (Downing, 2005; Franke *et al.,* 2008; George and Bock, 2011). Previous conceptual research proposes that entrepreneurial firms in early stages need to experiment with business model design to test the market and to act upon, or reject business opportunities (Trimi and Berbegal-Mirabent, 2012). The empirical insights in this article reveal how the three case companies differed in the ways they identified and created value of novel business opportunities in emerging markets niches. Seamless identified an

opportunity to digitalize the prepaid distribution of mobile accounts. The initial business model design aimed at establishing a joint venture with a large distributor, Brightpoint, which resulted in an important customer relationship that enabled them to reach the global market with its invention. Xelerated invented a new data architecture and network processor and needed similar to Seamless to collaborate with large partners, or customers to exploit the market and internationalize. Xelerated further needed to build an ecosystem of complementary partners from its inception, in order to deliver value to the global customers. While Toontrack, in turn, could implement its online mail order business model to generate sales from day one, but at the later stage found itself in a situation where partnering with distributors and resellers were necessary for facilitating efficiency in terms of value delivery and further international growth. The three cases thus imply the importance of the designing a boundary spanning business model and to include partnering with large actors in the early internationalization of born global firms. Which is also in line with that business models in high-tech SMEs do not develop without significant cooperative relationships with other actors in the field (Nummela *et al,.* 2004). This leads us to the first proposition: Consequently, the following proposition is developed:

P1: Early-stage born global firms can utilize its partnering agreements with large actors to break out on international markets through a dynamic use of its business model design.

The initial value creation driver for all three companies was built on novelty in creating new technologies and value offerings (Zott and Amit, 2010). The novelty-based business models by the case companies were to a different extent combined with elements of lock-ins of customers and/or complementary partners (Sainio *et al.,* 2011; Oviatt and McDougall, 1994). We find that the partnering and the capability to build an ecosystem to co-create value are deeply integrated and virtually inseparable from the business models as such. This finding partially contradicts that of Hennart (2013), who diminishes the importance of networks in favor of the business model as an explanation for born global firms' internationalization.

Moreover, in line with previous studies, the present study demonstrates that designing an opportunity centric business model requires intuition and a deep understanding of the key customer's needs (Teece, 2010). Through the close relationship with large, global customer, Xelerated and Seamless developed a deep understanding of the customers' needs and future roadmaps, which enhanced the SME's abilities to foresee future demands on international markets. Xelerated managed to develop elements of lock-in effects with both its large customers and ecosystem partners, due to the long product life cycles of the established systems, including both high switching costs of components and the customer advantages of network externalities (Zott and Amit, 2010). Seamless initial business model around its platform of prepaid distribution created similar customer lock in as once its platform is integrated into an OEM system, the switching costs are high as well as it generates advantages of network externalities. Toontrack, however, differs from Seamless and Xelerated in the sense that they target two different types of end-consumers, professional and "hobby" musicians. Thus it managed to create a lock in effect in their business model by the use of building legitimacy from users of the software, (Podolny 1994; Dacin *et al.,* 2007). In form of well-known professional musicians, such as members in rock bands like Motley Crue, Megadeth, Def Leppard and Meshuggah. This leads us to the second propositions:

P2: Through lock in strategies together with a close understanding of customer needs, born global firms' can enter the larger customers international markets and capture value.

Capabilities to Manage Business Model Innovation for Internationalization

Our study further demonstrates how the born global firms developed and renewed their business models through processes of learning, experiencing

and adopting to changes (Chesbrough, 2010; Doz and Kosonen, 2010). Specifically, we articulate three critical and interrelated capabilities facilitating business model innovation for born global firms to internationalize and grow in our analysis. These dynamic capabilities are sensing capability, entrepreneurial capability and relational capability, and are in line with Teece (2007; 2010), in regards to how dynamic capabilities could interplay with changes in the business model.

The capabilities are manifesting themselves in different forms and fashions, depending on the firm's internal dynamics, roles and positions in value chains, and the overall industry context at a given time. Seamless had new perspectives infused through their different market strategies and position in the value chain, while Xelerated drove towards enhancing its ecosystem and its own position by well-known, legitimacy building partners (Dacin *et al.,* 2007). Toontrack in turn acted upon the opportunity when it recognized that the industry and customer acceptance had reached a point were direct downloading were commercially viable. The overarching commonality between these dynamic capabilities is however that they contribute to change where the capability to manage business model innovation drive these changes.

The journey of Seamless, from the firm's inception, demonstrate a sensing capability of capturing new opportunities to develop and build from its first technological innovation, the platform for prepaid distribution, to continuously sense and act upon new opportunities with a process of business model innovation. Seamless' journey show the capability to assemble resources for acting on and creating new business opportunities, which in accordance to Karra (2008) would make the firm's entrepreneurial capability high (see also Zang *et al.,* 2009). However, in Seamless case the entrepreneurial capability created internal tensions as the company found itself being locked-in by the OEM business model with its large customers. In order to manage this situation Seamless uses relational capabilities in combination with continuous business model innovation to maneuver in its networks and enter new product markets and customers (Lee 2007; Andries and Debackere, 2007). In the case of Xelerated, the born global firms' business model has been continuously characterized by a strong focus on R&D, design and sales activities and thus technology as well as market sensing for development purposes. Entrepreneurial capabilities and strong relational capabilities have also been evident in the firm's journey, as it enabled it to create a new market and to retain its position and best-of-breed status of its products over time. The cases of Seamless and Xelerated further show how lock-in strategies are two-sided in the relationship between large and small firms. The large customer use lock-in strategies to take control and incorporate the technology into its OEM solution (Bengtsson and Johansson, 2012). However, the small firm uses business model design to lock in the large customers as well. These action and reactions need to be managed through business model innovation over time in order for the small firm to sustain competitiveness and independence.

Toontrack have honed a strong sensing capability and actively scans competitors, customers and technological trends for the purpose of potential change and reconfiguration. The entrepreneurial capability of Toontrack manifested itself for instance in the launch of the piano audio library, thus acting on a new opportunity in the market, in line with Karra's (2008) notion of entrepreneurial capability. As for relational capability, Toontrack have been able to leverage resources from a dynamic usage of partners such as distributors and resellers for international growth and increasing the firm's own knowledge base, thus spurring further innovation in the firm.

P3: Born global firms idiosyncratically utilize its sensing, entrepreneurial and relational capabilities to manage business model innovation over time.

Moreover, as presented by Zahra et al. (2006) and Kreiser (2011), we also found that these firms possesses substantive capabilities as

well and that they at different points in time of the firm's development and growth, could be more characterized by influences of substantive rather than dynamic capabilities. This could delay business model innovation or slowing down the process. Which could be exemplified in our cases by firms being locked-in into a OEM business model or a position in a value chain through their partnerships, generating substantive "being good at what you do" type of capabilities. It is mostly evident in the cases of Seamless and Xelerated. For Toontrack, the issue could be seen in a reluctance of venturing into new products, when they were already established with the drum audio software and arguably reaching a "comfort zone", honing the development of substantive capabilities in the firm. The same could be said about the firm's rather slow process towards direct downloading of the software as the model for purchase. The often young and resource-scarce born global firms are depending on its ability to make the correct trade-off decisions in a highly competitive international marketplace. Hence, we argue that the balancing capability of the firm's management could balance the dynamic and the substantive capabilities of the firm and thus moderating the speed and scope of business model innovation. This leads us to the following proposition:

P4: Born global firms need to utilize a balancing capability for managing explorative and exploitive elements of business model innovation

This notion is highlighted in the cases, where for instance Seamless through its continuous business model innovation and changes in its management structure allowed the balance between the capabilities to be favorable changed for the firm at different points in time. For Toontrack, its strong sensing capability have played a large role for the management towards balancing tendencies towards complacency with the instilling the need to respond to market and technological shifts with changes in the business model. Similar could be noted for Xelerated, as through its intensive R&D efforts and sensing capability, have pushed the firm's management to effectively balance the overall dynamic and substantive capabilities to avoid lock-ins and business model inertia (Chesbrough 2010; Zott and Amit 2010). Conversely, the balancing capability could also come into play for making sure that the business model innovation does not go too fast for the market. Case in point could for instance be Toontrack's slow shift towards direct downloads, where the business model innovation is balanced and moderated by the management, in order for the market to adjust to the technological shift incrementally.

Conclusions

This paper contributes to both the literature of born globals and business models in different ways. First, several calls for further research in the area of international entrepreneurship and born global firms have asked for studies of firms beyond early internationalization and firms of a very young age (Dimitratos, 2005; Keupp 2009; Jones *et al.* 2011). Secondly, how these firms can sustain their international operations and remain competitive over time, have been another recurring theme in research calls (Keupp, 2009). Thirdly, the concept of business models has not been used in born global research to a large extent previously (Dunford *et al.* 2010). Therefore, this study contributes to the literature of born global firms by looking at born global firms which are all more than 10 years of age and who has managed to sustain their competitiveness internationally since their inception. Specifically, we shed lights upon how the business models and the capabilities to manage business model innovation have contributed to the growth and development of these born global firms. Fourth, we identify and articulate three critical and interrelated capabilities used in the processes of business model innovation for the studied born global firms, namely opportunity sensing capability, entrepreneurial capability and relational capability. These inter-related capabilities are important for the firms to identify new opportunities and manage business model innovation over time in order to prosper and grow. This paper extend prior research of SMEs alliance

portfolio management capabilities (Bengtsson and Johansson 2012) with the specific focus on born global firms business model design and capability to manage business model innovation over time, explicitly using these three capabilities to sensing novel opportunities, leverage network relationships to enhance its visibility and climb the ladders of their value chains.

Moreover, born global firms could then be argued to have a need for balancing the dynamic and the substantive elements of their capability portfolio for facilitating optimized value capturing from their business model innovation efforts. This as novelty-based business models, business model innovation and dynamic capabilities (Zott and Amit 2010; Teece 2007; 2010) for spurring the former, could be considered explorative efforts. Similarly, efficiency-based business models and substantive capabilities could be seen as exploitative measures in this context. Thus, this study highlights how these born global firms needs are utilizing a balancing capability from their management for effectively balancing the elements of exploration and exploitation in regards to business model innovation. This line of thought in regards to the exploration-exploitation duality is line with Nielsen and Gudergan (2012), as we thus argue that exploration and exploitation in this context represents different objectives and intentions, resulting in different outcomes for the firm. This differs from the continuum view of exploration and exploitation (i.e. March, 1991). As the cases have highlighted, business model innovation could be more incremental or radical depending on the context and the situation facing the firm at a particular point in time.

Finally, prior conceptually based research states that *"the process of defining, adjusting and improving a business model is a complex art that needs further research efforts"* (Trimi and Berbegal-Mirabent 2012: 455). This study complement previous studies of born global firms as well as the growing research on business model innovation by providing insights of the journey of three born global spanning over a ten year period, how these firms design business models to act upon business opportunities and the capabilities to manage business model innovation over time in order to internationalize and grow.

Future Research

This paper provides several interesting potential avenues for further research in the area of how business models are used. For instance, in our cases we noted that firms often used multiple different business models in parallel to each other. This is an issue not explicitly looked at in past research and we believe more knowledge is needed in order to understand how multiple business models are balanced by often resource-constrained SMEs, as well as drivers for opting to work with parallel business models. This could be viewed upon in the context of born global firms as well as in other types of firms; arguably this avenue of research is best suited for qualitative case studies. Another interesting venue for further research is to further scrutinize the lock in and lock out strategies as act of balancing the asymmetric relationship of small and large firms and its effects.

We also see a need to further explore the role of networks in the business model of born global firms. Hennart (2013) for instance, treat networks and collaborations separately from business models, while arguing that latter are a more significant driver for the development of born global firms. In our paper, we see a rather distinct connection between the use of networks, business models and dynamic capabilities in the context of born global firms. This could be further investigated quantitatively, through survey data, as well as through case studies. For instance, by looking at the dynamic capabilities involved and potential business model implications of network re-configurations by born global firms.

Additionally, the set of propositions provided here could use further empirical testing, either as a part of a survey or through qualitative work in different industry or geographical settings.

Managerial Implications

This study provides a set of practical implications for managers in growing and maturing born global firms.

These implications are not limited to born global firms and can, to some extent, be transferable to other, similar types of firms as well. Firstly, we see that without a carefully designed business model, relevant for the current stage the firm is in, technological innovations will fail to capture a market. Thus, the business model is at least as important for the success of ventures as the technical innovativeness. Secondly, as the firm evolves, so should the business model. The business model which allowed the firm to enter global markets in first place will likely not be the business model for sustained growth as the firm matures. This is due to ever-increasing global competition, technological advancements and changes in customer behavior, for instance. Thirdly, as the cases in this study have highlighted, business model innovation is a process which require certain capabilities and needs to be managed carefully. At one hand, the firm needs to sustain competitiveness and avoid inertia, even at a rather young age, but at the same time not moving too fast and alienate customers. Finally, the firm's external networks and partnerships should be treated dynamically and hence be adjusted and/or re-configured as the firm's business model changes overtime.

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Appendix 1: Interview Guide

Background:
- Can you briefly describe your business today?

OVERALL ON THE NETWORK, THE PRESENT SITUATION:
- Customers

- Suppliers

- Partners

- Competitors

Business models
- How does your business model look like? (If possible, draw it)

- Why have you chosen / developed this model?

- Has it changed over time, if so how and why?

- What are the driving forces have been behind the change of the business model, what effects have it had?

Business models cases
- Can you describe two different internationalization cases that you have done recently with a client or with partners?

- The process, from product/service introduction to customer contracts (or vice versa).

- Can you describe one or more critical incidents that had an impact on how the project / business evolved?

Business models and international growth
- Do you believe that the business model and the innovations made to the business model overtime (if any) has contributed to the growth of the firm , and in that case , how and why?

- Do you believe that your current business model is replicable across the international markets you are current active on and consider to be active on? If so/not, why?

- What challenges do you see for the future with the business model you have today and your international growth?
    - o Organizational
    - o Technological / knowledgebase
    - o Relational (customers , partners, Competitors)

- What opportunities do you see your business model and your international growth?
    - a Technological / knowledgebase
    - b. Related Market
    - c. Strategic

Business models and Capabilities

- What do you see in terms of skills / abilities in the company?

- *How does your network and even competitors affect the learning the building of competences/skills/capabilities within the company and it has affected the business model?*

- Do you work actively to create market changes on your own/ create new markets? How, if so? How can it affect the business model?

- Are there any mental barriers in the organization that makes it difficult to change the business model?

↳ For example, we are so used to doing this it's hard to see it any other way

- How can you characterize your company´s willingness to act upon changes; Do you act or react upon changes in the environment?

Summering up

Do you think that your business model(s) are the same in three, five or ten years? How, why, can you give examples.

- Is there anything else you would like to add that we have not discussed related to the business models and internationalization?

About the authors

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Using an innovative price model to leverage the business model – The case of price model innovation in the largest Swedish taxi company

Dr. Carl-Johan Petri[1]

Abstract

Purpose: The purpose of the paper is to describe how the biggest Swedish taxi company (Taxi Kurir) developed an innovative price model to leverage the business model.

Design/methodology/approach : The empirical data in the article describe Taxi Kurir's development of a new price model. Data about the Swedish taxi market and about Taxi Kurir has been compiled though interviews and document studies. Detailed information about the background, development and implementation of Taxi Kurir's new price model has been captured through interviews with representatives from Taxi Kurir.

Findings : Based on both the empirical example, and other investigations, we have found that a company can create substantial changes in their price model, by just changing some of its basic characteristics. A well designed price model can contribute to leveraging the intentions of the business model.

Practical implications : Most academic and practical texts about business models consider pricing to be an important component. However, they typically do not refer to the specifics of the price- or revenue models. According to the literature review in this paper, and the empirical findings, the configuration of a company's price model should be aligned with its business model. This will contribute to leveraging the business model.

Originality/value: The Swedish taxi market is one of the most deregulated in the world. Differently from most other countries, any individual or company can start and operate a taxi business. This case offers a unique description on how the biggest company in the market responded to the competition by introducing a fundamentally new price model, by making a small change in one of the dimensions in their existing price model.

Keywords: Price models, price model transformation, pricing, taxi, business model
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Introduction

Pricing and revenues are a fundamental component in every definition of what a business model is (Zott, 2011; Teece 2010; Osterwalder and Pigneur, 2005; Chesbrough and Rosenbloom, 2002). Some even indicate that it is the core of the business model: "*The essence of a business model is in defining the manner by which the enterprise delivers value to customers,* entices customers to pay *for value, and converts those payments to profit*" (Teece, 2010, emphasize added).

However, most texts about business models only refer to the specifics of the price- and revenue models superficially. Pricing is considered important by all, but few present any systematic approach on how to design the specific parameters of the price model.

In this paper I take a closer look at the issues of pricing, in the business model context. My aim is to describe how an innovative price model can be designed to leverage the business model.

The theoretical foundation is based on 1) a brief overview of some influential business model articles and 2) a summary of a framework that can be used to analyze and configure price models. The result of the theoretical part is a greater understanding of how price models can be designed to leverage the business model.

The empirical content is based on how the largest Swedish taxi company (Taxi Kurir) developed an innovative price model. The new price model offers, opposite to all competitors, customers a binding fixed-price quote – for any arbitrary itinerary – prior to the booking. No other taxi company offers an equivalent price model.

I argue that the specific configuration of the price model affects the sustainability of the business model. Based on the findings in this paper, and previous research, I also suggest that the configuration of a company's price model should be aligned with its business model. Hence, it will contribute to leveraging the business model.

Conceptual elaboration on the pricing component in the business model

The term "business model" has gained an almost exponential popularity in the last 10 years[1]. Still, several authors claim that there is no clear definition of what the concept refers to (e.g. George and Bock, 2010; Teece, 2010; Osterwalder and Pigneur, 2005).

Nevertheless, there is something appealing about the term. Its use in the corporate world hints at an applicability and usefulness beyond the buzzword and as with any new term, we should not be surprised by its ambiguity. A plausible explanation for this is given in the academic literature. Baden-Fuller and Morgan (2010) suggest that business models can be used for several purposes; as role models, scale models, scientific models and even recipes (in any combination) by different firms. Since the term can be used in so many different ways an exact definition becomes difficult. And it might not even be necessary.

Osterwalder seems to be one of the more popular references among practitioners. Especially his co-created handbook (which is underpinned by his more thorough investigation of the concept a year earlier in "The Business Model Ontology"; Osterwalder 2004). Together with his co-authors, he proposes that a business model is a *blueprint of how a company does business* (Osterwalder and Pigneur, 2005). They describe nine building blocks that constitutes the business model. One reason why Osterwalder may have gained such popularity outside academia, is his way of illustrating the components in the business model.

The illustrations confer a content structure on the term business model and turns it into a tool. Through the detailing of the aspects of the business model, a firm can use the concept to understand, analyse and manage the business logic as well as to innovate.

1 Chesbrough and Rosenbloom (2000) performed a Google Search on the term "business model" in May 2000, resulting in 107 000 hits. Our own search in January 2012 resulted in 31 900 000 hits.

Furthermore, Osterwalder and Pigneur (2005) suggest that the business model is a conceptual tool linking strategy, business organisation and systems together. In this, they elaborate that a business model focus on how the business *works as a system*, while the strategy is more action oriented and includes execution and implementation. However, the authors note that the distinction between the terms is unclear and the literature divided on this issue. This is obvious in Casadesus-Masanell and Ricart (2010) who discuss the difference between business model and strategy (as well as tactics). They present a framework for distinguishing the terms from each other, arguing that *the object of strategy is the choice of business model* and thus a business model in action is a reflection of the realised strategy.

Chesbrough and Rosenbloom (2002) also note the ambiguous nature of the term business model and compare it with the term strategy. They conclude that the concepts overlap to some degree. The business model's main concern is *what mechanism to use in order to make money*. Strategy, on the other hand, focuses on sustainability versus competitors and creating shareholder value. More specifically, they argue that the functions of a business model is to articulate the *value proposition*, identify a *market segment*, define the *value chain*, estimate the *cost structure* and *profit potential*, position the firm in the *value network* and formulate the *competitive strategy*. As we can see, there are some striking similarities with the Business Model Canvas. This is no coincidence since the two authors are referred to numerous times by Osterwalder and Pigneur (2005) and included among the contributors of the building blocks.

Yet another viewpoint is held by Teece (2010), who argues that a business model contains the *financial 'architecture'* for value creation and that it is, in essence, a conceptual model used to describe how customer value is created. And how the value is monetized. The inherent transparency of a business model seems to be a problem to Teece; a successful business model risk to be copied by competitors. This is where strategy enters the game, according to Teece. A business model is more generic than the strategy. Hence the strategy is a tool to protect the successful business model from being copied. By segmenting the market, creating a value proposition and delivery mechanisms, a firm will ensure that the business model survives. Again we can see the similarities with Osterwalder and Pigneur (2005), who, however, are not cited by Teece.

While there are several other sources that provide interesting discussions about business models, much of those views are considered by Osterwalder and Pigneur (2005). Their nine principles are based on a literature review of 14 authors.

From my perspective, the Business Model Canvas is a suitable starting point to explore some of the details that I find lacking in the business model research. Leaving the question of the relationship between business models and strategy for now, I use the definition from Osterwalder and Pigneur (2005) as a starting point:

A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams. (p 10)

Osterwalder's and Pigneur's (2005) model is based on an simple value stream view, where the partners and suppliers are described to the left, the "core" of the business in the middle and the customers to the right. In the bottom, the business is underpinned by its financial infrastructure (capturing revenues and costs).

In this article, I will mainly focus on the box in the lower right corner of the model: The Revenue stream. I believe *pricing* deserves more attention and elaboration than it usually gets in the business model literature. "Business" in business models and business strategies invariably involves contracting between firms, and in modern society it presents a huge range of alternatives on how to define what is sold and how the seller is remunerated. Therefore, we now turn our attention to pricing.

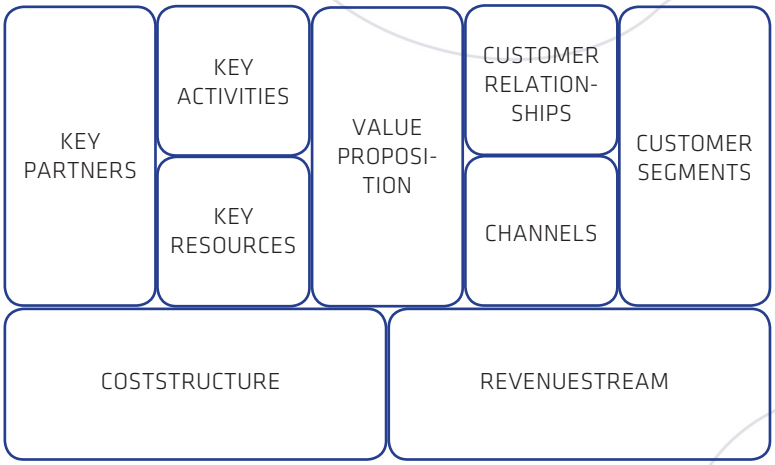

Figure 1 Simplified description of Osterwalder's and Pigneur's (2005) nine generic components in the business model canvas

The specifics of the price model in the business model context

As noted above, revenue is one of the fundamental components in every definition of what a business model is; in addition to the previous example "*The essence of a business model is in defining the manner by which the enterprise delivers value to customers,* entices customers to pay *for value, and converts those payments to profit*" (Teece, 2010) it can be illustrated by quotes like this: "*the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to* generate profitable and sustainable revenue *streams*" (Osterwalder and Pigneur, 2005). (Emphases added by us)

However, when studying how different authors elaborate on the way a company can price its offering, there is a need for improvements. Pricing is recognised as important by all, but no one presents a systematic approach on how to design and align the parameters in the price model with the surrounding business model.

I believe that the design of the price model is of great importance to *entice the customers to pay* for the offering. The price model should be configured so that customers want to pay for the company's offering in a way that both assures the necessary cash flows in the short perspective and continues to monetise the offering as it continues to create value for the customers in the long run.

In our previous work we have suggested a systematic approach on how to configure the properties of a price model (Iveroth et al, 2013; Olve et al, 2013a, 2013b). When applying this model, it has become apparent that very small changes in the price model can result in radical transformation of the business model itself. A small shift in one of the dimensions in a company's price model can result in a totally different cash flow situation. Hence, the price model is a very important component in the business model. Unless the structure of the price model is aligned with the more explicit characteristics of the offering, there is a risk that the revenues will not increase when the offering delivers value to the customers, i.e. the price model risks to "leave money on the table" (Dolan and Simon, 1996).

In an EMJ article, and a subsequent book, we suggest a model with five dimensions that can be used to flesh out the characteristics of a price model (Iveroth et al, 2012; Olve et al, 2013b). This analytical model can both be used to analyze and to configure price models such that they contribute to leveraging the business model. A price model is a system of price-related aspects of

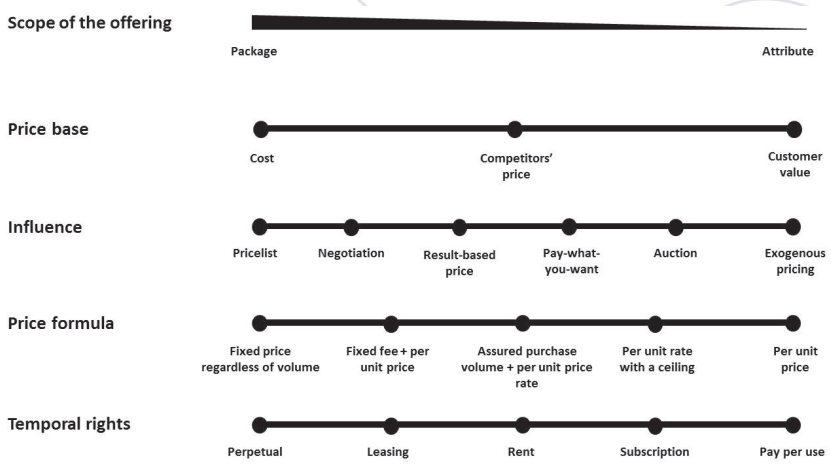

Figure 2 Five key dimensions in configuring a price model

an agreement between a seller and a buyer. Any agreement between a buyer and a seller uses some kind of price model. We propose that such models can be described through five dimensions. Together, they constitute a meta-model for price models.

The first dimension refers to the scope of the offering. At one end of the spectrum, a complete *Package* (bundle) of products and services is the object that is priced. At the other end, each *Attribute* is priced individually and may be bought individually. For example, Cunard Cruise Line offers a complete package when they price their seven-day cruises in Europe. The customers pay for a bundle of products and services (e.g. travelling, accommodation, food, spa and entertainment) irrespective if the customers choose to consume them or not (see for example Shapiro and Varian's seminal work on bundles). Opposite to this, Ryanair splits their offering into different products, such as flight, method of payment, priority boarding, luggage allowance, food and beverages, insurance et cetera. In this way, the customers can choose among the attributes and influence the total price by deciding what to include.

The second dimension focuses on what information is used to inform the pricing decision. The most classical alternative is to base the price on information about the cost of (developing, producing, distributing and selling) the products and services (Malmer, 1996). This has lately been criticized by many pricing researchers, who claim that prices should rather be based on the competitors' price levels or customer value (Ingenbleek, 2007). Regardless if the company has any explicit policy on what shall govern pricing decisions, it is fairly easy to get an idea of the current state after just a few interviews. More common than not, "costs" still seems to be the most common foundation for pricing decisions.

The third dimension is concerned with the extent to which the seller or the buyer influences the price. In the most extreme situation, the seller has the power to set the price. As the customers' power increase, the pricelist is not absolute anymore. Instead, the price is set in a negotiation. The next type along this dimension is based on some observable outcome of the use of the product. We refer to this as result-based prices. The fourth type, on the influence dimension, is when the price level is set by the buyer: Pay-what-you-want, which is sometimes also referred to as pay-if-you-like (Kim, 2009). The next step along this dimension is when both the seller and each customer hand over the right to determine the price level to an auction. Finally, exogenous pricing is the case when circumstances beyond the influence of both the provider and the

customers determine the realised price level, e.g. when creating an index of exogenous factors that establish the price level.

The fourth dimension focuses on the price formula. It connects price and volume; from fixed price (regardless of volume) to a per unit price. In between, there are several alternative combinations of fixed and variable price components that can be used to calculate the final price level (Dolan and Simon, 1996).

The fifth, and last, dimension focuses on the customers' temporal right to the offering. To the left we find perpetual rights. The further we move to the right, the shorter the time the customer may use the product. Lease and rent are offerings for a specified period of time. Subscription is also a transfer of rights for a specified period of time, but the product's characteristics may change (day by day) as it is upgraded or enhanced during the contract period. Finally, at the right-hand side, we find Pay per use, which means that the buyer pays for every individual use of the product or service.

Any particular business contract can be characterised along these five dimensions. Depending on the design of the price model, obligations, risks, and likely financial outcomes are shifted between the buyer and the seller.

To summarise, I agree with most business model writers that pricing and revenue issues are of great importance to make the business model sustainable. However, in the growing body of literature on business models, we have not found any systematic approach on how to configure a price model. I argue that the model we have described above, can assist in generating profitable and sustainable revenue streams, hence leveraging the business model.

Methodology

In this paper I suggest that the details of the "pricing box" (revenue stream), embedded in most business model frameworks, can be better understood and designed by using the five dimensions presented above. Our model was developed in a collaborative research project together with the global telecommunication company Ericsson. For three years, we worked together with practitioners from Ericsson to develop an understanding of the pricing challenges they face. The model, presented in the EMJ article and in a subsequent book, is one of the results from the research project. It has been presented in academic forums (Westelius et al, 2010; Iveroth et al, 2012) as well as practitioner-oriented texts (Olve et al, 2013a; Olve et al, 2013b).

I like to emphasise that the focus in this paper is on price model design. Not on determining price levels. The latter is the typical focus in pricing literature, and pricing of taxi services is no exception (see for example Wong's calculations on taxi prices in the Chinese market; Wong et al, 2002; Wong et al 2008; Wong et al, 2010). Neither do I focus on the more accounting-oriented topics of pricing, for example how revenues are reported in the accounting and financial reporting systems when customers are billed in advance, instead of in retrospect.

The empirical data in this article describe how the largest Swedish taxi company designed a new price model. Data about the Swedish taxi market and about Taxi Kurir has been compiled though interviews and document studies. Opinions about the taxi market have been compiled through interviews with persons in the Swedish Taxi Association, the Swedish Transport Agency, the Swedish Tax Authority and the Swedish Police. More detailed information about the industry has been compiled from governmental investigations about the industry, the Taxi Association's trend- and future outlooks, and academic studies of the taxi market. Information about the background, development and implementation of Taxi Kurir's new price model has been captured through interviews with representatives from Taxi Kurir, interviews with taxi drivers, interaction with Taxi Kurir's IT-based booking system (mainly the booking app) and consumption of the offering as such (using taxis as a mode of transportation).

How Taxi Kurir introduced an innovative price model to leverage the business model

The Swedish taxi market is one of the most deregulated in the world. Differently from most other countries, any

individual or company can start and operate a taxi business, as long as they comply with a basic set of rules regarding e.g. traffic safety, driver competence, visible declaration of terms and conditions, etc. There is, differently from most other countries, no restrictions regarding the number of taxi cars that are allowed to operate in the market or any regulations regarding price levels.

The Swedish taxi market turns over approximately 800 million Euros. It is operated by some 16,000 taxi cars. Most of the cars belong to a national or local taxi company. However, the cars are not owned by the taxi company, instead they franchise the brand name (the name and colour that is striped on the car), access to a central booking system (via telephone, the web and smartphones) and a set of contracts with large customers (like big companies and important travel hubs like airports, railway stations, hotels and entertainment arenas). The market is dominated by a few big taxi companies. In Stockholm, for example, the three biggest brands capture almost 60% of the market.

The taxi companies do not own any cars. Instead, the cars are owned by independent taxi owners. They typically own a handful of cars (1-5 cars). The owners, in turn, employ the drivers. The financial structure of the industry is thus two tiered; there is one financial structure in the umbrella organization, the taxi company. And one for the taxi owner operating the car(s). The taxi owners absorb the capital cost of the car and the risk of running the car.

The "switching cost" for a taxi owner – to move from one taxi company to another, or to go completely independent – is fairly low. It caters for a volatile market where taxi owners move between brands as soon as they believe that the costs of belonging to one brand are higher than the benefits of staying with it.

The taxi companies are typically membership organizations. They are founded, "owned" and controlled by the taxi owners that belong to it. The size of the brand (measured as number of members) is typically restricted by the fact that existing members often want to limit the number of taxi cars operating in the market (i.e. shortening the supply of taxi cars). This type of taxi company is often organized as federations where the taxi owners populate the board; hence – simultaneously – act as superiors to the management team (being their owners) and "subordinates" being the "agents" in the network.

The alternative structure is to operate the taxi company as an independent business – on its own merits. Such brands are typically owned by someone else than the taxi owners. These companies rather view their business model as a franchise concept where the brand is the franchise owner and the individual taxi owners are the franchisees that utilize the resources from the franchiser (e.g. the brand name, the booking gateway, education, quality control, contracts with large customers, etc).

Developing a new price model

Taxi Kurir is the largest Swedish taxi company. Its business model is of the second type above. They are the only nationwide taxi company in Sweden and operate in 43 cities. Their turn over is almost 100 million EUR. The company is privately owned by the family Karlsson. The prime reason for Taxi Kurir to re-think the design of their price model was the turbulence in the Swedish taxi industry, following from the de-regulation of the market in the early nineties. Over the years, especially big city taxi markets (like Stockholm) had been flooded with solitaire taxi owners that deliberately, and legally, skimmed the market (charging up to 400% more than the "standard price" in the market – some times even more), operating under a legitimate taxi license. Visitors have been "fooled" by these independent taxis, and there was an intense debate in Sweden whether to re-regulate the market again. Taxi Kurir saw this problem and found that they had to act on it. They understood that the large price spread was provoking to many customers and that it could harm the taxi market as such. One way to deal with the challenge was to re-think the design of the dominant price model in the market – charging customers ex post, after the trip. A price model that was disliked by many customers.

Taxi Kurir decided to take opportunity of this and introduce a completely new price model: offering ex ante fixed prices for any trips, between any two addresses. Regardless of origin and destination, customers can book a taxi and get a binding price quote from the system before the booking. Regardless of

circumstances during the trip (traffic jams, the driver's choice of route etc), the price stays fixed.

In designing the new price model, Taxi Kurir could leverage two important features in their business model. First, they could leverage their advanced computerized booking system (a key resource) that served as their prime channel to the market. In the system, Taxi Kurir's customers book taxis directly (mainly large organizations that use Taxi Kurir's services repeatedly, like travel agencies and travel departments within large organizations).

Second, the owner's passion for customer demands – and how to align these with the value proposition – paved the way for the new price model. For a long time, many customers had complained about the variable price model. However, the industry had been reluctant to listen to this. Fixed prices were mainly regarded as an exception. They were only offered (officially) on trips to and from travel hubs, e.g. airports and railway stations[2].

The owner of Taxi Kurir had noticed that customers (both large public and corporate customers, and private persons) wanted to know the price for the whole trip in advance. In a large survey, it was observed that an astonishing 92% of the customers would like to know the price before the trip. In the same study it was also revealed that 81% of the customers didn't even understand the underlying bases for how taxi prices are calculated. The owner of Taxi Kurir saw this problem as a business opportunity.

To develop and implement a new price model, a set of different requirements had to be met. First; the calculation of the ex ante price (for each of the infinite number of trips that can be booked; from any Swedish address to any other Swedish address) had to be automated. It would not be possible for any human agent to immediately calculate these prices and give the customer a binding offer. Instead, it needed to be executed by a price engine.

The price engine could be developed, thanks to detailed digital maps that hade become available in the market (which happened just recently, as a consequence of the wide dispersion of GPS-systems). To calculate a robust price, the engine needed 1) correct information about available roads, 2) a computerized optimization tool to identify potential routes and 3) information about speed limits throughout the whole route. Given a route, the price algorithm could calculate a "perfect" price. But, during the day – especially in larger cities, with a bad traffic infrastructure – there are periods when the conditions are everything but perfect. The price engine also had to take these dynamic aspects of the city's traffic situation into consideration.

These were the new key resources that had become available, that a team of business developers and analysts used to develop the new price model. It resulted in a price engine that was accepted by the board and the owner of Taxi Kurir.

Implementing the new price model

The ability to actually deliver the new price model – in practice – required more than just a valid price engine (key resources). To "deliver" the new price model (to the customers), Taxi Kurir used its original booking system (channels). Only modest changes needed to be made in the system to allow customers to book the trip at a fixed ex ante price (instead of the variable ex post price). The new price model was simply added as an alternative to the conventional price model. Some customers still wanted to "bet" that the variable price would be lower than the fixed, others valued the certainty (i.e. knowing the price in advance, even though it might be a little higher than the variable price). The customer base for the new price model was initially Taxi Kurir's corporate customers (that subscribed to the booking system).

In 2012 Taxi Kurir believed that the new price model was robust enough to be released to a wider audience. Instead of making the booking system available on Taxi Kurir's website, they decided to use smartphones as the delivery platform (a new channel to the market). An app was developed for both iPhones/iPads and Android telephones. In addition to presenting a fixed ex ante price, the app also gives priority access to available taxi cars.

2 Fixed prices can of course also be negotiated, by exception and bi-laterally, between driver and passenger. In these negotiates, no explicit reference price is available, so the actual price level is a result of a negotiation between supply and demand.

Adding a new price model in a taxi company does not only require external marketing – convincing the customers about its merits. Existing internal structures also had to be challenged, as the taxi owners and the drivers had to be convinced about the new price model's qualities (convincing key partners about its merits).

The internal revenue structure in a taxi company is purely based on billing. The taxi owners pay a percentage of their revenue to the taxi company. The prices, however, are set for all vehicles that belong to the taxi company, hence the individual taxi owner can not choose whether to comply with the taxi company's new price model and price levels or not. When the taxi company reconfigures the price model, it has immediate effects for all taxi owners' financial results. The reward structure between the taxi company and the taxi owners is also mirrored in the relationship between the taxi owners and taxi drivers. The drivers are rewarded based on the money they generate.

Shifting price model, from a variable to a fixed price, moved "the risk" from the customer to the supplier. In the traditional model, the taxi company, the taxi owners and the drivers were always compensated for the trip; regardless of their choice of route and the traffic situation. They got paid for every kilometre and every minute they were occupied with a customer. The customer, on the other hand, had to bear the full risk; if a driver took a longer route than necessary, the customer had to pay a higher price.

Switching the risk from customers to taxi owners and drivers, of course, met some criticisms. However, the owner of Taxi Kurir was determined; he was certain that the market will reward companies that are aligned with their customers' preferences (aligning the value proposition with customer demands). Having seen the customers' opinions in the survey about the established price model convinced him that a "price model innovation" would 1) attract new customers, 2) grow the business, and even 3) put pressure on the internal efficiency of the business model. In meetings with taxi owners (the franchisees), Taxi Kurir argued that the new model would generate higher revenues and profits (in the long run). When presenting the new model, Taxi Kurir's owner ended every meeting saying that the new price model was mandatory. If the franchisees didn't believe in it, they could always join another taxi company or go independent. No taxi owner left Taxi Kurir.

However, getting the taxi owners' acceptance for the new price model was not enough. The drivers also needed to be convinced. The challenge in the taxi industry is that the drivers can not be forced to accept the new price model. The dispatch system is designed as a market: a booking is released in the system and the driver that first confirms it will get it. The dispatch system, and the internal salary structure, is based on the assumption that every driver will try to grab any available booking (within her economic reach) as quickly as possible. Supply and demand, so to speak, meet in the dispatch system. The price level is set to promote drivers to pick up bookings. In essence, the price model and the reward structure affects the performance of the key activities.

The drivers are key partners in the business model, but still autonomous agents. They always make their own calculations on which booking to take (for example estimating the cost of getting to the pick up address as well as the chance of getting a new passenger close to the drop off address).

When releasing the new price model, one of the challenges was to make sure that the drivers' increased risk (of a fixed price booking) did not surpass the revenue from that booking. If all drivers ignored the fixed price bookings, because they'd rather hover (waiting for a traditional booking), the customers using the new price model would risk not being picked up at all, which would harm the brand tremendously.

Through internal education and explicit reporting on the effects of the new price model the drivers gradually accepted it as part of the value proposition. Taxi Kurir also made an effort to develop the drivers' knowledge about the geography. When evaluating driver behaviour, it was obvious that many drivers didn't take the shortest and fastest route to the destination. Instead they often took routes they were accustomed to. When the drivers understood that this eroded their margins, many of them saw an immediate reason for changing to better routes (the ones that were suggested by the optimization system). The fixed price model hence increased internal efficiency.

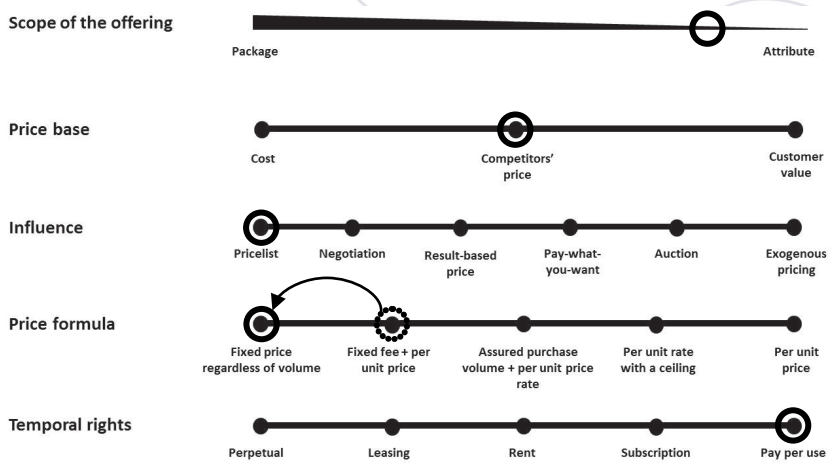

Figure 3 The minor change in Taxi Kurir's price model, that resulted in a fundamentally new price model

Taxi Kurir's new fixed price model was initiated by an awareness about the customers' preferences, specifically their wish to know the price before the product is consumed. The price model was first launched in Taxi Kurir's booking system. Later it was released to the broader audience through smartphones. The challenge was not to get acceptance for the new model from the customers, but to convince the taxi owners and drivers that it would be beneficial to them to employ the new price model – even though it would shift the risk from customer to supplier.

Analysis of the price model's importance to the business model

Based on the presentation of Taxi Kurir's new price model there are some aspects that become particularly interesting.

To start with, the perceived differences between Taxi Kurir's new and old price model is much greater than actual change in the dimensions of the price model. We have seen similar patterns in other industries. For example, Ryan Air positions themselves as a low-fare airline, but when we analyze their price model we see that it is mainly a questions of scoping. Many observers have commented on the "real" price of a Ryan Air ticket, showing that the price is not as low as it is claimed if you include all the fees that Ryan Air charges separately for (which are typically included in the incumbents offerings). Hence, Ryan Air's innovation was rather a new price model than a new price level. Their scope lever is far to the right, compared to their competitors. For all other sliders, however, their configuration is identical with the other airlines.

A similar pattern becomes apparent in Taxi Kurir's new price model. Scope, price base, influence and rights are the same as for the traditional price model. It is only the price formula that has shifted: from fixed fee + per unit price to a solid fixed price for the trip. One small change, in just one of the dimensions, has resulted in a completely new price model that extends Taxi Kurir's value proposition.

We can also see some interesting interactions between the components in the business model. Taxi Kurir's prime focus, in the business model, is the customer. It was the customer's opinion regarding the traditional price model that led to the development of a new way to price taxi trips. 92% of the customers claimed that they would rather get a binding quote prior to the booking, than paying a variable price based on the time and distance travelled. Compared to Taxi Kurir's competitors, their business model is one-directional; they

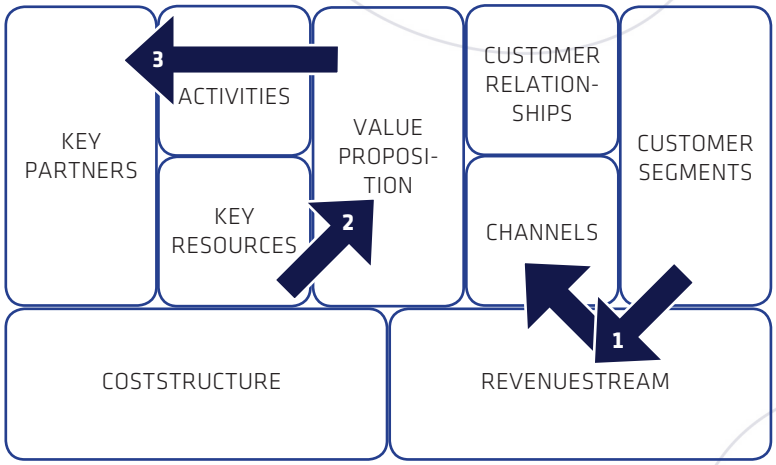

Figure 4 The minor change in Taxi Kurir's price model, that resulted in a fundamentally new price model

only have one customer (the travellers). The competitors, however, often operate as cooperative where the taxi company (the brand) has two equally important "customers": both the travellers and the taxi owners. I suggest that this is one important explanation why no other brand has picked up the new price model, since it shifts the risk from customers to the supplier. This is not in the interest of the owners (of the taxi company).

On a more detailed business-model level we can see three flows of events within the business model. All are an effect of the introduction of the new price model. The first flow is a result of the observation above; the main focus in Taxi Kurir's business model is the customer. The customers' opinion regarding the price model resulted in an assessment of how the price could be more aligned with their preferences. The new price model was not added as just a new pricing tactic. It essentially became the core message in the communication of the company's value proposition. Most of Taxi Kurir's marketing efforts during the last years have focused on fixed prices. The flow hence went from customer preference, via redesign of the price model to an extension of the value proposition.

The second flow focuses on Taxi Kurir's development of the new offering. The new offering could not have been created (at a reasonable cost) if there had not all ready been a robust infrastructure of key resources. The new price model could be implemented in Taxi Kurir's existing dispatch system. The system was the prime channel for corporate customers and travel agencies to order taxis from Taxi Kurir. Only a few new functions needed to be added in the booking system. Also the concept of a customer-centric price models was easy to explain in relation to Taxi Kurir's value proposition. The additional investments were minor; purchase of digital maps and routing, programming of the price engine, and finally development of a smartphone app. The new price model, hence leveraged some key resources and existing channels to reach the customers. The existing business model hence served as platform for delivering the new price model.

Finally, the third flow focuses on the operation of the new price model in the business model. It started of as a new feature in the value proposition (following from explicit customer preferences, which was made available though existing key resources and channels). However, it required special attention to assure that the key activities were carried out. The dispatch system in a taxi company emulates a market. When a booking is made in the system it is published in the dispatch system. The driver that first picks it up will get it. There is no overall controller that allocates cars to orders. The underlying assumption is that drivers will

want to get every booking, since their compensation is based on the revenue they generate. As long as they know that they will get a risk-free revenue from every booking, they will be prepared to take them. But, as the new price model shifted the risk, the individual driver will not know that she will get compensated for the time and distances she spends in delivering a fixed fee booking. Some drivers, in worst case all drivers, might come to the conclusion that the risk of taking a fixed booking is too high (i.e. that the revenue will be lower than the alternative revenue they would get if they picked another booking). Hence, the new price model has dramatic consequences on the performance of the key activities in the business model and the priorities among the key partners.

Implications to further business model and price model development

Following from the patterns I have observed in Taxi Kurir's development of a new price model I believe that there are interesting issues to address in the interaction between business models and price models. This should be obvious from a business-model perspective, where most frameworks address revenue, pricing, income, etc as one important concept in the broader framework. Following from my reading of the business model literature, I believe our five dimensions can add to the understanding of how the price model can be configured to entice customers to pay for the value proposition. Typically, the pricing types and tactics in the business model literature do not offer a systematic approach to price model design, as our five dimensions do.

Based on both the empirical example in this paper and other investigations we have made, we have seen that a company can create substantial changes in the price models they offer. Just moving the slider one position, in any of the dimensions, will result in a new price model.

More important, however, is that the redesign of existing price models should be based on the content of the business model. The price model should be configured to leverage and promote the core features of the business model: leveraging the value proposition and assuring that key activities are performed and that the key partners accept the changes. It is important to remember that small changes in the price model do not necessary translate into small and easy changes in the organizational setting. This became apparent in Taxi Kurir's case where the design of the new price model led to repercussions throughout the business model, following from the way the "production system" and the relationships to the key partners were structured.

Therefore we sometimes like to compare the price model's five dimensions with the sliders in an Equalizer in a HiFi stereo. Depending on what music you listen to, you should enhance the right frequencies to enhance the experience. Different music require different configuration of the equalizer. The same goes for the dimensions in the price models; different configurations of the business model should result in different configurations of the price models.

Taxi Kurir has been able to configure a new fixed price model that leverages the core concepts in their business model. It is however not obvious that a competing taxi company could have introduced (or copied) the same price model since they do not focus on the same value proposition, they may use different channels to the market and they may rely on a different resource base. But more important, their relationship to their key partner (the taxi owners and drivers) is different.

In future research I would like to extend our knowledge of the contingent relationships between the business model and the price model. Are there any generic configurations of business models that would align neatly with equivalent standard configurations of the price model? And more specifically: are there some specifics in the business model that contradict particular configurations of the price model. I would also like to explore the usefulness of an equalizer as a metaphor to indicate the need for adapting the price model to the surrounding business model. This indicates that further research on the relationship between innovative price models and business model is of great importance.

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Carl-Johan Petri holds a ph.d. from Linköping University. His main research interests are within the fields of strategy, management control and pricing. He has written several books about balanced scorecard (for example Making Scorecards Actionable, Wiley 2003, that has been translated into eight languages). During the last years he and his colleagues at the Centre for Advanced Studies of Innovative Price models have published several articles and a book about how to design innovative price models.

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Performance Estimation of Networked Business Models: Case Study on a Finnish eHealth Service Project

Marikka Heikkilä[1], Sam Solaimani[2] , Aki Soudunsaari[3], Mila Hakanen[3], Leni Kuivaniemi[3] & Mari Suoranta[3]

Abstract

Purpose: The objective of this paper is to propose and demonstrate a framework for estimating performance of a networked business model.

Design/methodology/approach: Our approach is design science, utilising action research in studying a case of four independent firms in Health & Wellbeing sector aiming to jointly provide a new service for business and private customers. The duration of the research study is 3 years.

Findings: We propose that a balanced set of performance indicators can be defined by paying attention to all main components of the business model, enriched with measures of network collaboration. The results highlight the importance of measuring all main components of the business model and also the business network partners' view on trust, contracts and fairness.

Research implications: This article contributes to the business model literature by combining business modelling with performance evaluation. The article points out that it is essential to create metrics that can be applied to evaluate and improve the business model blueprints, but it is also important to measure business collaboration aspects.

Practical implications: Companies have already adopted Business model canvas or similar business model frameworks and tools to innovate new business models. We suggest that companies continue their business model innovation work by agreeing on a set of performance metrics, building on the business model frameworks enriched with social measures of network collaboration.

Originality/value: This article contributes to the business model literature and praxis by combining business modelling with performance evaluation.

Keywords: Business Model, Business model innovation, Performance Metrics, Performance indicators, Business network, collaborative network
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Introduction

Business modelling is a widely adopted method in companies to generate new innovative business ideas. The purpose of a business model (BM) is to describe the general logic of business, including business value; the customer segment, service, organisation, technology and financing (Bouwman et al., 2008). In other words, a BM can be seen as a representation of the corporate or network strategy, and as the starting point for planning operative business processes (eFactors, 2002). A core virtue of a BM is its high-level and comprehensive view on business, which makes it an attractive tool for designing and representing new ideas. However, the literature on BM implementation and the measure of its performance is limited. Traditionally rooted in accounting literature, performance metrics (PM) can be defined as variables or indicators that express the effectiveness and/or efficiency of (a part of) a system or activity (Lohman et. al., 2004). PM have been advocated as a promising instrument to evaluate and measure factors that are crucial to companies' performance. Most studies focus on a single company (Iqbal et al, 2012), use financial metrics (Lambert and Davidson, 2013), and are based on a certain system or tool, such as Balanced Score Card (Kaplan *et al*, 1992) or the Value Prism (Neely *et al*, 2002). As highlighted by Busi and Bititci (2006), Voelpel et al. (2006), and Ferreira et al. (2012), there is a gap in the literature relating to performance measurement of collaborative business models.

This paper aims to contribute to both BM and performance measurement literature by proposing a framework that integrates both streams. The framework enables performance estimation in the context of business models, particularly within networked settings. The case selected for this study illustrates how performance metrics are incorporated into the innovation process of the networked BM.

This paper is structured as follows: in the subsequent chapters we discuss business networks, BMs and performance metrics literature and conceptualize a framework. Next, we will describe our research method and demonstrate the practical usability of a performance indicator framework thru one empirical case of a networked business model and its metrics. Finally, we will draw conclusions and will outline opportunities for future research.

Business Networks and Business Models

There are several streams of literature on networked business, such as value creating nets (Parolini, 1999), Smart Business Networks (Vervest et. al., 2005, 2008), Industrial management & processing (Håkansson and Snehota, 1995), and economic sociology (e.g. Powell, 1990). Möller et al. (2009) have divided business networks to a basic, innovative, and a business creation network, where the partnership varies from operative to strategic. Even though in literature there are some differences in emphasis, the characterizations of business networks share many commonalities: the business networks are described as being formed by interdependent organizations (Vervest et. al., 2005, 2008) that are co-operating with each other, and consisting of specific roles and value interactions (Håkansson and Snehota, 1995) oriented toward the achievement of a particular task or outcome (Allee, 2008) in order to produce value add (Parolini, 1999). This paper focuses on collaborative networks having joint processes, where the partners share information, resources, and responsibilities to plan, implement, and evaluate activities to achieve a common goal (Camarinha-Matos et al., 2009, Pekkola 2013b). Overall, a collaborative network aims at mutual benefits for the stakeholders involved (Christopher et al. 2008). Also, trust is a required factor and enabler for co-creation, because the cooperation cannot be built purely on contracts (Lee and Choi, 2011). Without trust, the partners are not willing to share their knowledge and ideas, which is a crucial part in business creation. Trust can be reached through open communication and knowledge sharing (Gillespie and Mann, 2004; Allee, 1999), but also honesty, consistency and respect are needed elements (Larson and LaFasto, 1989).

Current studies on BM and BM innovation have mainly focused on definitions, taxonomies, and change methodologies for business models of individual organisations (e.g. Timmers, 1998; Amit and Zott, 2001; eFactors, 2002; Magretta, 2002; Hedman and Kalling, 2003; Faber et al., 2003; Lambert, 2008; El Sawy and Pereira, 2013). However, the networked nature of business is to some extent taken into account in BM and BM innovation literature (Zott et. al., 2011). For instance, BM Can-

vas (Osterwalder and Pigneur; 2010) and STOF (Bouwman et al, 2008) consider partners as a key component of a BM. Also the BM innovation literature underlines the importance of a networked approach in the concepts of open BM innovation (Doz and Kosonen, 2010; Chesbrough, 2006), co-creation (Schrage, 1995; Prahalad and Ramaswamy, 2000), value networks (Allee, 2008), and resources and capabilities within and across organizational boundaries (Bouwman et. al., 2008).

Author (2013) depicted networked BM innovation as a two-stream process, where 1) the BM is created and analysed by using the available BM ontologies and tools and 2) the change management concerns the selection and facilitation of learning between networked partners, alignment of strategies and processes, and feasibility assessments. Solaimani and Bouwman (2012) proposed a framework that identifies knowledge exchange, process alignment, and value exchange as core areas when analysing the inter-organizational interaction in the context of business model innovation. Figure 1 summarises our understanding over the triple role of a network's business modelling process in business networks: The BM for a collaborative network should also pay explicit attention to advancing (Heikkilä, 2010)

1. learning, knowledge sharing and trust between the parties, i.e. using BM as a boundary object (Star and Griesemer, 1989; Brown and Duguid,1991; Boland and Tenkasi, 1995).

2. agreement over processes and rules, which can be operationalised into formal coordination mechanisms, such as norms and contracts.

3. assessment of the risks, rewards, and fairness of the deal.

Performance metrics for networked business models

According to the literature, From a governance perspective, a network level performance measurement system helps to coordinate the network business and to steer the network actors to pursue the common targets (Cohen and Lee, 1988; Kulmala and Lönnqvist, 2006; Kaplan et al., 2010; Yin et al., 2011; Bititci et al., 2012), and increases the alignment of operations, communication, trust, and commitment in the whole network (Pekkola, 2013). Kulmala and Lönnqvist (2006) suggest that the network's performance measures should reflect the end users' perspective with both financial and non-financial factors. More generally, equity between networked actors has been emphasized by Leseure et al. (2001). Yet, so far there are limited stud-

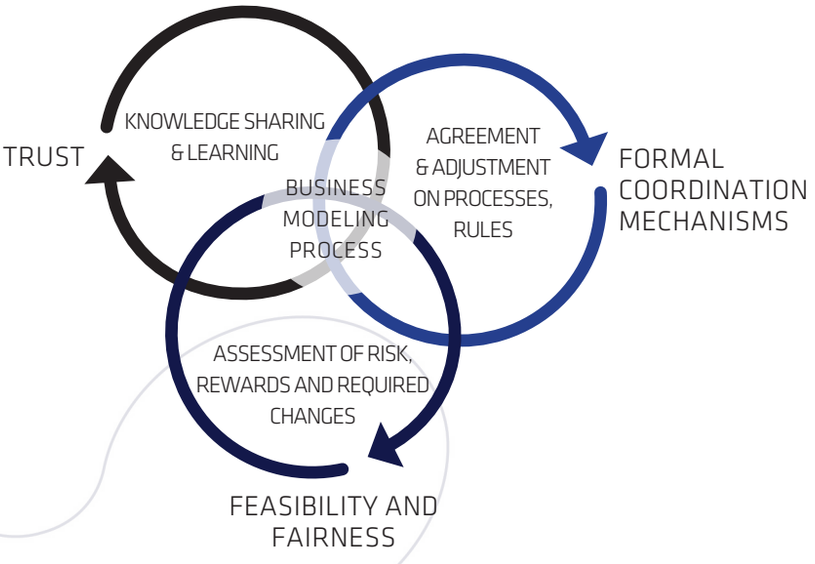

Figure 1 Three focuses of business modelling in business networks.

ies that focus on measurability of BM and BM innovation (Solaimani, 2014. Ferreira et al. (2012) suggest that collaborative performance measures should be defined to evaluate the BM. Voelpel et al. (2006) criticise the Balanced Score Card (Kaplan and Norton, 2001) and call for performance measurement frameworks that are suitable for networked business and are more dynamic. Furthermore, it is more common that the metrics are introduced only after the business is operating, even though we see that it would be beneficial to have a set of metrics already earlier, in the conceptual testing, piloting and/or prototyping phase of the innovation process. The metrics can then be utilized more dynamically to steer the development of the business idea, since the required changes and obstacles can be identified more easily.

Heikkilä et al. (2010) propose that performance indicators should be assigned for all main components of the BM. In the same vein we suggest that performance measurement starts with drafting a BM – using frameworks such as CANVAS (Osterwalder and Pigneur; 2010), STOF (Bouwman et al, 2008), VISOR (El Sawy and Pereira, 2013) or CSOFT (Heikkilä et. al., 2010) – to represent the business idea. As already mentioned, a BM acts as a dynamic boundary object (Star and Griesemer, 1989) helping the parties to communicate and share the business logic, understand each other's motives and goals, and to agree on joint goals and metrics for the cooperation.

Consistent with the commonly accepted BM building blocks, we propose the next five PM perspectives:

1. *Customers*: The aim is to understand the need of the customer, what kind of a customer relationship is established (Osterwalder and Pigneur 2010), and recognising differing customer segments.

2. *Service*: describes the intended and perceived value of the service, as well as how it is provided to the customer (Amit and Zott, 2001; Bouwman et al. 2008; Osterwalder and Pigneur 2002).

3. *Organisation*: describes the core tangible and intangible resources, roles and responsibilities within one or a network of organizations (Osterwalder and Pigneur, 2010; Bouwman et al 2008)

4. *Finance:* traditionally, financial performance has been the focus of PM studies. This perspective focuses on costs and revenues caused or shared between partners (Daas et al, 2013).

5. *Technology:* refers to information and communication technology (ICT), which enables the service, or supports the operations and collaboration. Some BM frameworks consider technology as a key element of a BM (Bouwman et al 2008), while others consider technology as a part of the firm's organizational arrangement (Osterwalder and Pigneur, 2010).

In addition, there are three network-oriented perspectives that have a specific focus on inter-organizational relationships and interdependencies (Heikkilä, 2010; Solaimani and Bouwman, 2012; Solaimani et. al., 2014). The network perspectives describe the constituent parts of a collaborative network, including shared processes, fairness, knowledge sharing and trust:

1. *Fairness and Value:* Ring and van de Ven (1994) and Leseure et al. (2001) point out the importance of equity in addition to traditional efficiency as criteria for assessing cooperative networks. Equity means 'fair deal', where inputs or outcomes are not always divided equally between the parties. We find this principle of fairness to be a distinctive character of collaborative networks. The partners are allowed to question the fairness of the deal from their point of view and either continue in the network or, if not satisfied, step out or renegotiate the terms of the co-operation.

2. *Information, learning and Trust:* The business model creation, negotiation and sense making give opportunities for mutual learning and knowledge sharing between the parties. During this interaction trust between the parties builds up (Ring and van de Ven, 1994). Trust is claimed to be the generic coordination mechanism in networks (Adler, 2001; Powell, 1990; Lorenzoni and Baden-Fuller, 1995).

3. *Processes and Formal Mechanisms:* Successful co-operation requires that the parties are willing to align their internal strategies and processes to better fit with the networked business model. This

includes alignment of processes both within each company and between the partners (Solaimani and Bouwman, 2012). The rules and practices have to be agreed on between the parties either thru social norms or written contracts.

To be able to improve the BM and to help turning the business profitable and sustainable, measures of the business from different perspectives are needed. We propose that multiple perspectives can be achieved by assigning metrics to each of the BM components described above.

Design Science Research

Following a design science approach, this article aims at developing a framework to be used in evaluating the performance of networked business models. Design science research focuses on systems or constructs that do not yet exist. Although any type of research method can be applied in design science research, typically studies are case-based, collaborative and interventionist (Van Aken and Romme, 2009). Our study is an action research case study (Baskeville and Wood-Harper, 1996) with a focus *"on research and learning through intervening and observing the process of change"* (Cunningham, 1997, p. 406). The interventionist approach means that researchers are collaborating with the organisation in developing actual solutions to problems, and contributing both to theory and practice (Dumay, 2010; Lukka and Suomala, 2014).

The case for this study was selected based on pragmatic considerations, such as availability and commitment of the actors, but we also find the industry it represents, the Health and wellbeing industry, a very interesting context; the industry is highly fragmented with several actors, such as hospitals, nursing care and wellness providers, and pharmacies as well as an increasing number of information and communication technology companies. E-healthcare solutions are likely to increase in the near future, thanks to emerging sensor and mobile technologies and big data analytics that allow new ways of collecting healthcare-relevant data. This, however, calls for novel collaborative business models and performance indicators. In our case study, the focus of the collaborating practitioners and scholars was to develop a common business model and related performance indicators in parallel. The authors actively participated in the process of identification of metrics (Baskerville and Myers, 2004; Heikkilä and Kuivaniemi, 2012; Heikkilä et al., 2013). Both the researchers and the practitioners aimed at increasing the understanding of performance measurement in the context of networked business models.

Data collection and analysis

The data for this article was gathered in a research project, which started in June 2011 and is running until May 2014. The project is funded by one of the largest Finnish governmental innovation and research funds (Tekes) and the participating companies (Occupational health care provider, Pharmacy chain, Pharmaceutical producer, and an entrepreneur specialised in sports and pharmacy consultancy). The researchers are from a Business and Economics School, and have complementing backgrounds in sports, information systems, entrepreneurship and growth companies both from academy and business side.

In literature (Bourne et al., 2003), the PM work is described either as a facilitator-led process or as an expert-led process. In the former, the PM work is the responsibility of the management team, and consultants or other external persons are utilized as facilitators in workshops. In the latter, the indicators are defined by a group of individuals, typically experts, that more or less undertakes its work isolated from the management team. The approach is typified by a small number of workshops, where the work is reviewed with the management team. In our case example, the work method resembled more of the latter, since the management team consisted of persons from all participating companies and did not have meetings frequently enough to take the lead in defining the indicators in detail.

Table 1 shows the process, tasks and data produced/collected in the project. The process consists of five steps adapted from Verschuren and Hartogh (2005) presented in Table 2.

The empirical data are mainly collected based on 15 semi-structured interviews (Table 2). However, we utilised all our knowledge and insight gathered during the project (Table 1).

Table 1 The sources of data throughout different phases of the project

Phasing	Task	Data
Idea	• Discussing the initial idea and earlier solution proposal: discussing the ethical and financial value of the service on societal, network, company and customer levels. • Contacting and agreeing with the partners to take part in the BM innovation process. • Launching a multidisciplinary research project.	• Videos, photos of the session and documentation of the concluding CANVAS. • Project plan
Requirements and assumptions	• Research on markets, • Open seminars on health and wellbeing • Selecting several Business Model tools. Workshops with the BM tool experts. Testing alternative BM tools (CANVAS, STOF, CSOFT). • Discussion of alternative IT solutions.	• Marketing studies (3), • Memos from workshops (3) • IT requirements specification draft
Identifying the solution	• Creating business model descriptions for the network and for each individual partner. • Connecting the business idea with changes required in current processes. • **Recognising challenges and performance indicators for a network business model** • **Analysing relations and trust between partners**	• Memos from brainstorming the networked business model with the partners (8), • Memos and BM canvas from the business modelling session with the partners (4), • **Interviews of partners about the viability of the intended networked business model (4)** • **Interviews of network relationships (8)**
Service process prototype	• Minimum viable product pilot of the service without IS support. • **The analysis of the viability of service processes**	• Observations. • Questionnaire on customers' attitudes toward the intended service (2 rounds) • **Interviews on service process (3)**
Implementation	• Not yet defined	

Table 2 The interviewees

	Company	Number of interviews
Interview		
The CEO	SME	3
Service development directors	Occupational Healthcare provider	4
ICT Developer Mng.	Occupational Healthcare provider	1
Pharmacist	Pharmacy	1
Sales and Marketing Pharmacy	Pharmacy	2
Marketing manager	Pharmaceutical producer	2
Doctors	Occupational Healthcare provider	2
Total		**15**

The interviews varied from one to one and half hours and were recorded. During the interviews, the interviewer made memos regarding meta-information, including the emphasis, reactions and expressions of the interviewees, and key concepts being discussed. After each interview, a short report was written about the essential topics that were discussed during the interview. Prior to the interviews, a case study protocol was developed to guarantee research reliability (Yin, 2004). As suggested by Yin (2004), the protocol consisted of five sections: the purpose of the study, data collection, report outline, question outline and evaluation.

The interview data is triangulated with other data sources (Yin, 2004), such as brainstorming and modelling sessions, company websites and project management meetings notes. Based on the data, the authors in a systematic way indicated an actual or potential issue that perhaps should be measured and evaluated. The issues were discussed in management meetings of the project with the partners. Then, the metrics (Table 3) were derived jointly by the researchers and the entrepreneur. In the last phase, the performance data was collected, analysed and presented to the network partners.

Case Study: Physical Activity Prescriptions

This study analyses an innovative pharmaceutical case, in which a number of companies aim to collaboratively develop services that increase and improve the physical activity of their customers.

The service focuses on preventing health issues (e.g. obesity, type 2 diabetes) that are typical of Western industrialized countries. The core process in the intended business model goes as follows: A medical doctor (in the Health Care Company) prescribes the patient physical exercise instead of / in addition to normal drugs. The

changes in the physical wellbeing of the patient (e.g. body age index, body mass index, body fat percentage) are measured regularly at a pharmacy, and the patient is also encouraged to increase his or her physical activity level. The data from each measurement session is stored to a central database, and aggregated reports on the changes in the physical wellbeing of the patient or a group of patients (for instance employees of a certain company or industry) can be produced from this database. This data is available when the patient is seeing her/his doctor again.

The BM for the service is presented in Figure 2 using Canvas by Osterwalder and Pigneur (2010), which was already familiar to all, and adopted as a BM innovation tool in the internal processes of one of the partner organisations. The networked BM Canvas was jointly created in workshops facilitated by the researchers. It recognises two customer segments, the first being the patients and the other segment consisting of employers, i.e. companies that have a contract with a Health Care Provider for occupational healthcare[1]. The value proposition to the patients is that they will be more motivated to exercise as they get more holistic health services and also verified changes in their physical wellbeing. From the employers' perspective, the intended service helps to keep the employees more fit, leading to less absence from work.

1 In Finland it is obligatory for the companies to arrange occupational healthcare for their employees and most companies buy it from Health Care Companies.

The next step was to define the metrics related to the eight perspectives of the framework proposed earlier. Based on the research data, the researchers proposed to the practitioners the objectives or critical factors that should be measured from each perspective. For instance, customer retention was one of the main concerns of the companies, which has led them to include 'drop out rate' as one of the service-driven metrics. In addition, the companies involved suggested other issues, such as user experience, process quality and willingness to share knowledge, to be subjected to measurement. Collaboratively, the authors and the entrepreneur constructed a set of performance metrics for all these issues. For instance a modified servqual metrics (Parasuraman et al., 1988) was selected to measure user experience, and the number of errors/reclamations and time spent in handling reclamations provides a measure of process quality. The indicators are presented in Table 3.

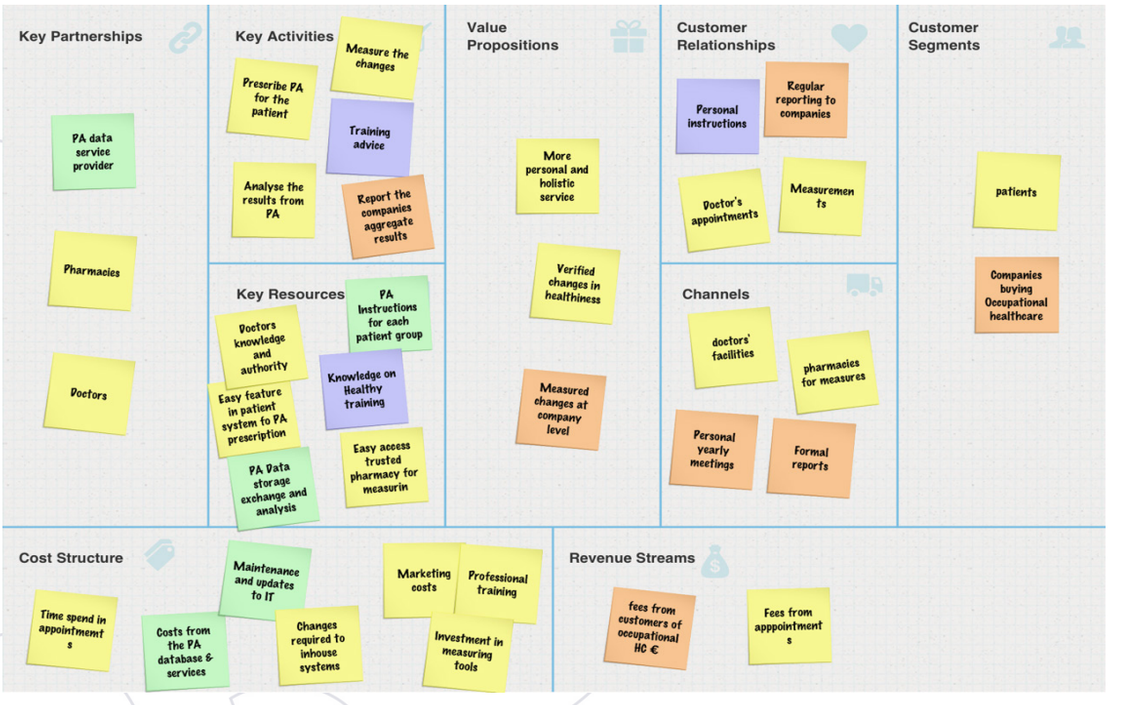

Figure 2: Business Model of the empirical case

Table 3 Performance metrics for the empirical case (the metrics that we analysed in the pilot are in italics).

Perspectives	Objective	Performance metrics
Customer	Potential customer base, market visibility	*Number of potential customers in different segments* Number of national mainstream media articles
Service	User experience, Value	*The dropout rate from each of the service steps/ The second purchase rate* *Servqual (Parasuraman et al., 1988)* *Willingness of customers to recommend the service to their friends*
Technology	Applications, Architecture, Hardware, Data	Service providers' data base visits -% Availability (24–7) & response time Extensibility of new functions Quality, integrity
Organisation	Organization network, complexity, density and structure	*The reach of service providers related to the geographical dispersion of the customers ("we reach 82% of Finns")*
Finance	Profitability, cost/risk	Net profit % ROI Revenue growth %
Fairness & Value	Fairness, sharing of risks and costs	Fairness of value distribution: *How does value creation occur to every network partner?* Intention of partners to continue in the network
Information, Learning & Trust	Knowledge availability; Level of trust	*Frequency of interaction* *Quality of interaction: openness (feelings, emotions, out-of-the-box ideas,), genuine listening* *Quality of and: critical and, shared targets, knowledge sharing* Losada line (Losada and Heaphy, 2004) Interparty Trust: "The partner firms in the alliance can be trusted to make sensible alliance decisions", "The counterparts in each company provide required information" (Luo, 2008)
Processes & Formal Mechanisms	Process intensity Process quality Process flow Diversity of processes	Number of active participants in each network organization Evaluation of processes: Number of errors/reclamations & Handling of reclamations (time, number of contacts)

Performance measurement results

Before further investments, the partners decided to develop a proof-of-concept. Accordingly, they aimed for testing a minimum viable product (Ries, 2011). In the management meeting all agreed that the first initial performance estimates could be done during the pilot study. In the pilot, four medical doctors in the occupational health care company prescribed physical exercises to their patients. The physical wellbeing of these patients was tested in a local pharmacy two times: immediately after getting the prescription, and again 3 months later.

The researchers collected measures about customers, service, organisation, fairness and value, knowledge exchange and trust. The pilot study focused on testing one part of the process, as well as customer satisfaction and value add. Therefore, the metrics regarding the IT and database solutions and the financial arrangements were not included. The performance metrics data was collected via a questionnaire filled by the patients during their visits to the Pharmacy for check up of their physical fitness, by interviewing the company representatives and also the doctors taking part in the pilot, and by market analysis (Table 1). The results of the measurement are:

Customers: As basic service can be operationalised without extra investments on health and wellbeing technology by the employees or employers, at its best, this mass-market service concept can reach the whole population. However, the service is designed to take into account the everyday practices of people with medical conditions requiring regular appointments with the doctor and visits to pharmacies to collect the medicine. These are considered to be the group that would benefit most from improved physical wellbeing, because it helps them to cope with the underlying medical condition. Therefore, based on statistics[2], we estimated that the potential size of the customer segment is 40% of Finnish citizens.

Service: In the pilot 66% of the patients returned to the second physical fitness test after 3 months of the first measurement (drop out rate 33%). This percentage was found by the partners (i.e., occupational health care provider, MD's and pharmacies) to be on a satisfactory or even good level. Therefore one of the greatest uncertainties related to the success of the service, the commitment of the patients in the service, was found not so worrisome after all. The servqual questionnaire results showed high measures on all aspects of service quality. Furthermore, a clear majority of the patients were willing to recommend the service also to their friends (97% in the first round, 83% in the second round).

Organisation: The health care provider company currently has 16 000 corporate customers and 500 000 occupational healthcare customers, covering 20% of the Finnish workforce. The pharmacy chain, in turn, has 73 pharmacies located all over Finland. However, as such the current network of pharmacies cannot reach the whole potential customer segment or the volumes of the health care company. Some of the interviewees raised this as an issue restricting the number and locations of customers that can be offered this service. Whereas the performance measures on customer segment and service value show that there is potential in the planned BM, the results from the business network aspects pointed out some weak spots in the plan.

Fairness & Value: All the partners saw the financial potential of the BM, but the values and aspirations of different actors aroused questions, such as *"We have several stakeholders in this complicated network, we have the pharmacy side, medical doctors, service providers who evaluate whether prescriptions are used, and us… it is not clear which value propositions all these actors, individually and collectively, are focussing on now, and if these values will be different in future"*. Also the sharing of costs and benefits was still unclear: *"…we have all the lego bricks, we can actually build the process, but are we all going to have our shares?"*

Communication, Learning & Trust: To support open knowledge sharing a more open and personal communication should be reached (Barnett et al. 2010). One partner commented: *"Still I see that the meetings are still more formal than they should be, thinking about trust building and conduct, communication could be more open"*. Also another partner required openness:

2 http://www.terveyskirjasto.fi/terveyskirjasto/tk.koti?p_artikkeli=suo00060#s1

"I long for straight talk; that all could say straight what they want and expect". A more frequent interaction was hoped for and the trust among the partners had not developed at the expected pace, which is put into words trust building and conduct, communication could be more open. Also another partner required openness: *"I long for straight talk; that all could say straight what they want and expect"*. A more frequent interaction was hoped for and the trust among the partners had not developed at the expected pace, which is put into words by one interviewee: *"It (trust) would be developed more if we had more discussions and moments for communication."* Another interviewee highlighted that the level of trust and community will regress when the shared experiences and doing decrease.

Discussion

Models and frameworks are helpful for clarifying abstract concepts and constructs. But to be useful in practise, a framework must be applicable to the conditions in which it is to be utilised. The proposal presented in this paper is designed to take into account the prevailing practices and processes of practitioners and just enhance them with performance measurement. The process of developing the performance metrics in our case study followed steps that are commonly identified in literature (Krause and Mertins, 1999; Bourne et al., 2003):

1. **Develop a model of the object of study**. When organisations are innovating collaborative business models together, they typically use some BM ontology (such as CANVAS or STOF) to design their business model. This ontology then serves as a boundary object between the partners, facilitating learning and exchange of knowledge between different parties. We suggested the companies to use business model ontology as a starting point also for performance measurement work and supplementing it with specific perspectives concerning networked environment.

2. **Identify the critical factors**. We used the eight differing perspectives on the collaborative business model to identify the important factors.

3. **Define the performance indicators**. The indicators were selected first based on discussions with the management board and complemented with the suggestions from relevant literature. Each of the 8 perspectives was associated with at least two indicators. In our case, 22 indicators in total were defined.

4. **Gather and verify the data.** The first data was collected in a pilot study covering 5 out of 8 perspectives. We utilised questionnaires, interviews and market surveys.

5. **Evaluate the performance indicators**. The data was analysed and performance measures presented. The performance measures resulted in some changes in the networked BM discussed below.

6. **Implement a continuous process.** To be done

Implications to the networked BM: The findings from Performance estimation caused some changes and improvements to the BM. For instance, to hinder the drop out of customers from the service, the variety of channels for contacting the customers was increased with email, SMS notifications and phone calls. A more profound change was done to improve the business network's coverage of a potential customer segment by introducing alternative means to take the physical wellbeing measures; in addition to pharmacy, the Health Care Provider Company may take the measures or the patient may buy measurement devices and take the measures independently at home. These alternatives would allow the service to reach a considerably higher number of customers. As concerns the fairness and value doubts between the partners, the next major effort was to evaluate how the service would be linked and combined to the other service processes of the partners, and how much synergy effects could be achieved there.

Finally, the results show that the partners in our case network consider it important to focus on trust and communication already from the beginning of the cooperation. They see that knowing the others personally, open communication, and the "we spirit" are valuable when knowledge is to be shared over company

boundaries. This openness would facilitate out-of-the-box thinking and provide room for innovation.

Conclusions

In this paper, we study the concept of performance measurement within the context of networked business models. We propose an integrative framework and a set of corresponding performance indicators, all of which help to estimate the performance of the business model. The proposed framework underlines the importance of eight perspectives, i.e., 1. customer, 2. service, 3. technology, 4. organization, 5. finance, 6. fairness & value, 7. information, learning & trust, and 8. processes & formal mechanisms. When metrics are defined for each of these perspectives, it is possible to evaluate the performance of the BM including the inter-organizational relationships and interdependencies within the business network. A set of metrics taking differing perspectives on the business model may also spot potential challenges and changes needed in the business model and business network arrangement.

In line with action research principles, the framework was used throughout the process of the creation of a BM in the network of several companies within the Health and Wellbeing sector. In this regard, multiple performance metrics were defined to evaluate the business model from the eight perspectives. Next, measurement data was collected in a pilot study to show the potential of the intended business model, while metrics pointing out the areas in need of improvements. Our analysis indicates that in case of collaborative BM innovation, it is important to formulate metrics to evaluate the BM, which, in turn, help identifying problematic issues at an early stage.

This article contributes to the business model literature by combining business modelling with performance evaluation. The article points out that in collaborative business model innovation it is important to create metrics that can be applied to evaluate and improve the business model blueprints. As evidenced in our case example, by collecting metrics the problematic issues can be found early, and the BM can perhaps be adjusted to overcome the problems.

Last, we can draw some suggestions on the procedure of BM performance evaluation. The companies first utilize the BM as a boundary object (Star and Griesemer, 1989), helping the partners to reach an understanding, and then continue the business modelling process by agreeing on a set of performance. Compared e.g. to switching to use the balanced score card, this is an easier way for evaluating the BM, because the partners can continue using the already-in-use BM tool as the framework for defining the metrics.

There are still many ways in which we can further our understanding on this topic. Here we defined the performance metrics for a potential networked business model. It would be fascinating to study the performance metrics as the networked business evolves from the early phases to maturity, and to closing stages. This would provide a dynamic view on how the set of metrics and their relative importance changes in time.

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Value Creation Challenges in Multichannel Retail Business Models

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Abstract

Purpose: The purpose of the paper is to identify and analyze the challenges of value creation in multichannel retail business models.

Design/methodology/approach: With the help of semi-structured interviews with top executives from different retailing environments, this study introduces a model of value creation challenges in the context of multichannel retailing. The challenges are analyzed in terms of three retail business model elements, i.e., format, activities, and governance.

Findings: Adopting a multichannel retail business model requires critical rethinking of the basic building blocks of value creation. First of all, as customers effortlessly move between multiple channels, multichannel formats can lead to a mismatch between customer and firm value. Secondly, retailers face pressures to use their activities to form integrated total offerings to customers. Thirdly, multiple channels might lead to organizational silos with conflicting goals. A careful orchestration of value creation is needed to determine the roles and incentives of the channel parties involved.

Research limitations/implications: In contrast to previous business model literature, this study did not adopt a network-centric view. By embracing the boundary-spanning nature of the business model, other challenges and elements might have been discovered (e.g., challenges in managing relationships with suppliers).
Practical implications: As a practical contribution, this paper has analyzed the challenges retailers face in adopting multichannel business models. Customer tendencies for showrooming behavior highlight the need for generating efficient lock-in strategies. Customized, personal offers and information are ways to increase customer value, differentiate from competition, and achieve lock-in.

Originality/value: As a theoretical contribution, this paper empirically investigates value creation challenges in a specific context, lowering the level of abstraction in the mostly-conceptual business model literature.

Keywords: business model; value creation; retail; multichannel retailing
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Introduction

The development of online services and the diffusion of information technology have enabled new ways for consumers to interact with retailers. For example, Forrester Research predicted in a 2012 report that electronic commerce would grow 62 percent by 2016 in the United States and 78 percent in Europe (Trendwatching, 2012). In addition to online retailing, smartphones and other mobile devices have thoroughly altered the retail landscape. Mobile devices have changed the way customers seek products, pay for them and tell others about them (Grewal, Roggeveen, Compeau and Levy, 2012). For instance, according to a recent study by ComScore two thirds of smartphone owners have undertaken shopping activities (e.g., comparing prices, using coupons or locating stores) on their phones (Retail Customer Experience, 2012).

Online and mobile shopping and communication mechanisms, or channels, are frequently used by customers. Channels are "mechanisms for communication, service delivery, and transaction completion" (Berry, Bolton, Bridges, Meyer, Parasuraman and Seiders, 2010, 155). Channels are, for example, brick-and-mortar stores, vending machines, kiosks, mobile devices, catalogs, and online storefronts (Berry et al., 2010). The multichannel customer group is found to be increasing in size and importance to retailers (Wakolbinger and Stummer, 2013; Rangaswamy and Van Bruggen, 2005; Verhoef, Neslin and Vroomen, 2007), but traditional retailers have failed to react to the emergence of new channels. Walmart and Target, for example, have online sales under two percent of total sales (Rigby, 2011). Multichannel customers tend to spend more money than single-channel customers (Rangaswamy and Van Bruggen, 2005; Neslin, Grewal, Leghorn, Shankar, Teerling, Thomas and Verhoef, 2006), at least those customers who purchase products from multiple categories or from more hedonic categories, such as cosmetics and video games (Kushwaha and Shankar, 2013). However, former studies have suggested that multichannel customers have higher expectations for the quality of service than single-channel customers (Wallace, Giese and Johnson, 2004). Traditional retailing formats simply won't suffice any longer (Rigby, 2011), because forerunner retailers are exploiting cross-channel synergies to create unique value propositions for customers. Thus, retailers are faced with the challenge of reconfiguring their conventional business models.

Existing research on multichannel retailing has mainly compared channels without contributing to a holistic understanding of how different channels coexist in the same business model. It has also largely explored customer behavior in multichannel settings, focusing on channel usage, channel migration over time, and channel switching behavior. For example, goals, needs, customer inertia, perceived risk and situational factors affect the selection and use of different shopping channels (Neslin et al., 2006; Ansari, Mela and Neslin, 2008; Thomas and Sullivan, 2005; Valentini, Montaguti and Neslin, 2011). At the same time the company perspective has been largely neglected in empirical studies (with the exception of Avery, Steenburgh, Deighton and Caravella, 2012). It is not known how retailers are adopting multichannel business models and what challenges they meet.

A multichannel retail business model utilizes multiple channels in the creation of customer and firm value. A single-channel business model, in contrast, only utilizes one channel for value creation. The adoption of multichannel business models increases complexity in terms of creating value for both parties. To better understand how retailers are responding to changes in technology as well as customer behavior, this study's purpose is to identify and analyze the challenges of value creation in multichannel retail business models. This objective is addressed through semi-structured interviews with top executives from different retailing environments. An analysis of the challenges of multichannel business models will enable retailers to avoid or solve these challenges and develop the academic understanding of business models in general.

Theoretical background

Value creation can be understood through the business model concept. It is *"a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network"* (Shafer, Smith and Linder, 2005, 202). Doganova and Eyquem-Renault (2009) see business models as "market devices",

i.e. calculative and narrative tools that allow entrepreneurs to explore a market and to materialize their innovation, e.g. a new product. They build on Magretta's (2002) view of business models as *"stories that explain how enterprises work"* (with a plot, characters and their motivations). A business model captures managerial choices and their consequences, e.g. contracts, decisions, and practices related to policies, assets, and governance (Casadesus-Masanell and Ricart, 2010). A business model thereby is based on management's expectations regarding sales, costs, and the behavior of customers and competitors, which is why it needs to be constantly updated in evolving markets (Teece, 2009). For a business model to be successful, it also has to be coherent, and the calculations need to work, i.e. the economics behind the value creation logic need to result in profits (Magretta, 2002).

Value creation in business models

A business model describes customer and firm value creation as well as the value creation of all stakeholders. Thus, a business model is more than a revenue model, i.e. *"the specific modes in which a business model enables revenue generation"* (Amit and Zott, 2001, 515). For the purposes of this paper, customer value is seen as the result of customers' subjective evaluations of a product, experience or any other offering (Holbrook, 1999; Zeithaml, 1988; Noble, Griffith and Weinberger, 2005). This evaluation is based on benefits and sacrifices related to the offering. The evaluation can be related to monetary aspects as well as social interaction, symbolism, and experiential aspects (Balasubramanian, Raghunathan and Mahajan, 2005). Customers then choose the alternative which leads to the most customer value (Holbrook, 1999; Zeithaml, 1988).

The sources of value creation, or value drivers, are factors that enhance the total value created by the business. For example, in electronic business, value drivers are novelty, lock-in, complementarities, and efficiency (Amit and Zott, 2001). In the retailing context, the creation of customer value is tightly connected to creation of shopping experiences (Sorescu, Framback, Singh, Rangaswamy and Bridges, 2011). Customer value is created when the customer and the retailer utilize and combine different resources during the shopping experience. These resources can be tangible, such as the products and the retail space, or intangible, like the creativity of a customer or the competence of a salesclerk. Firm value in turn is created by the achievement of company goals, such as acquiring customer information, achieving high customer satisfaction, or earning profits.

Business model elements

Various categorizations of business model elements exist in the literature. For example, Chesbrough (2010) lists value proposition, market segment, value chain structure and assets, revenue mechanism, cost structure and profit potential, firm position within the value network and competitive strategy as functions for the business model. Johnson, Christensen and Kagermann (2008) argue that the business model consists of a customer value proposition, a profit formula, key resources, and key processes. Shafer, Smith and Linder (2005) in turn classify business model components into four categories: strategic choices, the value network, creating value, and capturing value. Yet another categorization is presented by Doganova and Eyquem-Renault (2009). They group business model components into three building blocks: the value proposition (the offering), the architecture of value (partners and channels), and the revenue model. Amit and Zott (2001) see the business model as consisting of transaction structure, content, and governance. The content of transaction refers to the goods or information exchanged, and the resources and capabilities required in the transaction. The structure refers to the participating parties, their links, and how they interact. Transaction governance *"refers to the ways in which flows of information, resources, and goods are controlled by the relevant parties. It also refers to the legal form of organization, and to the incentives for the participants in transactions"* (Amit and Zott, 2001, 511).

Table 1 presents selected business model definitions that in addition to being perhaps the most accepted ones, highlight the variety and similarity of different definitions in the literature. From the definitions, a few generalizations can be made. First, it is clear that the business model describes both customer and firm value creation (e.g. value propositions, value delivery, exploitation of opportunities, and revenue models). Second, business models are strategic tools for innovation and

Table 1: Selected business model definitions

Authors	Definition	Implications
Amit and Zott, 2001	"A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities." (p.511)	Business model innovation can be achieved through value drivers: novelty, lock-in, complementarities, and efficiency.
Teece, 2010	A "business model defines how the enterprise creates and delivers value to customers, and then converts payments received to profit." (p.173)	A business model should be non-imitable and honed to meet specific customer needs.
Chesbrough, 2010 (based on Chesbrough and Rosenbloom, 2002)	A business model's elements are (p.355): - value proposition; - market segment; - value chain structure and assets; - revenue mechanism; - cost structure and profit potential; - firm position within the value network; and - competitive strategy	Business model innovation is a tool to achieve competitive advantage, but managerial emphasis, such as experimentation and leadership of culture, is needed to drive the organizational change.

differentiation. Third, business models describe the selection and coordination of activities, i.e. they take an 'activity system perspective' (Zott and Amit, 2010) to value creation.

Retail business models

In the retail context, Sorescu et al. (2011) build on Amit and Zott's (2001) business model definition, and argue that the retail business model *"requires explicit consideration of interdependencies among, and choices of:(1) the format that describes the way in which the key retailing activities will be sequenced and executed, (2) the diverse activities that need to be executed to design, manage, and motivate the customer experience, and (3) the governance of actors that perform these activities, the roles they play and the incentives that motivates them."* (Sorescu et al. 2011, S5). Thus, Sorescu et al. (2011) propose that the retail business model consists of three interconnected elements: retailing format, activities, and governance. These elements and their interdependencies define *"a retailer's organizing logic for value creation and appropriation"* (Sorescu et al. 2011, S5). Retailing formats position the retailer to meet the preferences of desired customer segments. Formats entail decisions about location, opening hours, products, price level, promotions, level of service, the customer interface, and store atmosphere. The structure of value creation directly affects the scalability, adaptability and flexibility of the customer experience (Amit and Zott, 2001). The chosen format sets the boundaries and content of retailing activities (Sorescu et al., 2011). Activities are the processes needed to create customer value within a particular format. Activities are for example purchasing, logistics, warehousing, displaying of products, customer service, selling, data mining, and branding. Retailing governance concerns the roles

and motivations of the participants of value creation. Roles can for example mean, how much self-service is expected from customers (Sorescu et al., 2011). Key retailer stakeholders are customers, employees, competitors, suppliers, IT and other service providers and governmental stakeholders. Governance describes the ways in which information, product and resource flows are managed by the parties of value creation.

Value creation in multichannel business models

To exploit the best features of channels, multichannel retail business models are adopting new formats, such as "click-and-mortar" (Rangaswamy and Van Bruggen, 2005) or the "online-and-mobile retail" business model (Lin, 2012). For example, the option to return products to the stores might lower the barrier to order online. Channel characteristics include for example, availability, possibility of real-time communications, adaptability of the customer interface, and ease of use. Channels also vary in terms of how easily customers can change to a competitive retailer's channel (lock-in), and their ability to capture information on customer behavior (Dholakia, Kahn, Reeves, Rindfleisch, Stewart and Taylor, 2010).

Multichannel business models can enhance value creation through segmentation, efficiency or customer satisfaction (Neslin and Shankar, 2009). For example, adding new channels to the business model can be an efficient way to reach new market segments, enhance customer satisfaction or customer loyalty (Berman and Thelen, 2004; Zhang, Farris, Irvin, Kushwaha, Steenburghe and Weitzf, 2010). To achieve efficiency, a multichannel business model is used to lower expenses related to serving customers. The goal is to guide customers into using low-cost channels. From the segmentation point of view, a multichannel business model is a way of segmenting the market, i.e. serving different segments in different channels. Customers are categorized according to their channel preferences (Neslin and Shankar, 2009). However, there are myriad possible criteria for segmentation, such as channel purchases (Konuş, Verhoef and Neslin, 2008), other metrics of channel use, or responsiveness to marketing activities (Ansari et al., 2008; Thomas and Sullivan, 2005). Customers do not always choose the channel that is most optimal for the retailer, so directing marketing activities are needed (Neslin and Shankar, 2009).

The multichannel business model can also be a way of increasing customer satisfaction, for example by encouraging customers to use the channels that best suite them in different phases of their shopping process. This type of model requires close integration of channels (Neslin and Shankar, 2009). The objective is to encourage customers to make use of all retailer-provided channels. This broader interaction, for example purchases from different channels, can be seen as the development of the customer relationship (Venkatesan, Kumar and Ravishanker, 2007). If the channels support each other, customers will make additional purchases and the customer relationships are utilized more efficiently.

Method

The purpose of this study is to identify and analyze the challenges of value creation in multichannel retail business models. To meet this purpose, qualitative interviews with top executives from different retailing environments were used to generate the data. These environments differed in terms of the offering (e.g. specialty products like videogames and fishing equipment; products for larger audiences, like electronics; department stores with wide product ranges), amount of competition (high or low), and the adoption of multichannel business models by firms (common or uncommon).

The interview is a way to quickly generate data from a practical phenomenon. It is also a suitable method when studying complex phenomena such as multichannel business models. However, the interview data does not describe actual behavior, but the interviewees' thoughts, evaluations and reasoning (Silverman, 2005). Overall, seven interviews were made between December 2011 and March 2012. The interviewees were CEOs, heads of business units, and senior consultants. Purposive sampling was used to select the interviewees in order to gather varied views on the phenomenon. The interviewees' amount of experience, role within their organization, as well as the organization's business model and environment were considered in the selection. Both female and male interviewees were included in the data generation. Interviews were made until no new themes emerged in the following inter-

views. The interviews lasted an hour on average, with the interview transcripts being 12-18 pages in length in the word processing program's default settings.

The interview form used in this study was semi-structured, i.e. it had narrow, confirmatory questions as well as explorative ones that acted as a list of themes to discuss. First of all, the interviewees were asked to describe their current position in the organization and how they saw the current retailing environment. Secondly, the interviewees were asked how the multichannel environment is affecting retailers' business models. Thirdly, the interviewees were asked to discuss the major challenges their organization or retailers in general are facing in the multichannel environment. It is worth mentioning, however, that the nature of the interviews was open-ended, meaning that the interviewees were encouraged to speak from their own perspective and introduce themes and opinions they considered important to multichannel retailing. Follow-up questions relating to these themes were asked.

The data analysis began by organizing data into three categories representing the retail business model elements (i.e. format, activities, and governance). Comments relating to retailing formats, for example, were grouped into the format category. Data that did not fit into the categories (e.g. answers to questions about the interviewee's role in the organization) was used as background information in the analysis. The analysis continued by separating value creation challenges from the rest of the data and then exploring these challenges further. Finally, the identified challenges were labeled as value mismatch, customer experience integration, and internal conflict. In the next section, the findings are discussed in more detail.

Findings

The multichannel environment presents a host of challenges for retail business models. The findings suggest that adopting a multichannel retail business model requires critical rethinking of the basic building blocks of value creation. First of all, the structure of value creation, i.e. the retail format, becomes more complex as retailers use and combine different channels to create new types of customer interfaces. Secondly, the activities that enable value creation have to be integrated to manage value creation across channels. Thirdly, governance of the value creation has to be realigned to avoid internal conflict among channels. These findings will be presented in the following sections.

Challenge for retailing formats: Value mismatch

In a multichannel business model, the retailer chooses a mix of customer value-adding or cost-lowering channels to create company value. However, as customers effortlessly move between multiple channels, multichannel formats can lead to a mismatch between customer and company value. Multichannel customers might change retailers as they move from one channel to another (see for example van Baal and Dach, 2005). Customers can "cherry-pick" benefits, like customer service and advice, from different channels and retailers. This form of customer behavior is dubbed "showrooming" or "research shopping" (Neslin et al., 2006; Konuş et al., 2008). The value creation challenge, therefore, is to choose a mix of channels that not only create customer value but also capture the economic value equivalent to the customer value created. As one interviewee observes, a combination of high-reach and low-cost channels might be a viable multichannel business model:

"If your prices are competitive, then you should go multichannel. People go to electronics stores and check the shelves. And if they could find lower prices from competitors in an easy way, then they would go there. But in the future, people's use of time will be emphasized. So that if you're easily reachable and the competition is not, you will have more sales because of it."

-Development director, specialty retailer

The multichannel environment can have negative consequences on loyalty, since it is easier to find and compare alternatives. For example customers that migrate from traditional channels to the online channel are found to have smaller purchases and loyalty over time, possibly due to decrease in interaction between the retailer and its customers (Ansari et al., 2008). Mobile applications have also made customers more price-sensitive by being able to compare prices anywhere (Grewal et al., 2012). On the other hand, multichannel customers are argued to be more loyal than single-channel customers (Kumar and Venkatesan,

2005), and they might be willing to pay higher prices to interact with retailers and brands they know and trust (Neslin et al., 2006). Thus, a business model aimed at fostering customer loyalty might be effective against showrooming:

"I don't know if it's a threat. It is possible and it happens. [...] But if you're a patron of a certain retailer, you tend to concentrate your purchases. You stay in those assortments, chains, formats. But of course if you're looking for a certain service or a product that is easy to compare among different retailers, then it is possible that when you switch channels, you also switch retailers."

-CEO, grocery retailer

Some interviewees did not view showrooming as a major concern. They saw customer loyalty schemes as tools for motivating and engaging customer to the value creation. This lock-in via loyalty schemes (Amit and Zott, 2001) might then be an effective way to fight showrooming. Another way to motivate customers is to stage superior shopping experiences, as one interviewee comments:

"If you succeed in that, the degree of engagement will grow. What I mean is, when you can make the interaction with us... When the customer feels the interaction is effortless, easy. He or she can do it at a convenient time. I think the result is a higher brand image and engagement."

-Development director, specialty retailer

While the interviewees recognized showrooming behavior as a challenge to value creation, they also proposed that it could be managed by developing rational and emotional ties between the customer and the retailer. Retailing format decisions such as positioning, offering selection, pricing, service, and store atmosphere are means of developing ties to specific customer segments.

Another problem with showrooming behavior is the difficulty in proving whether it happens and to what degree (Stephens, 2013):

"It's difficult to say. We have this [...] customer loyalty system and if we look at the average customer, he or she visits our stores two times a year [in offline store chain]. And the [online store chain] customer surfs the website frequently, but only makes purchases a couple of times a year. The problem is this: how many times the [offline store chain] customer visits the store without buying anything?"

-CEO, electronics retailer

Retailers do not have the abilities to measure customer visits to stores, especially when customers only visit the store to browse items. Measurement difficulties also apply to online channels, when customers do not login to the retailer's service. Retailers therefore should avoid over-relying on their existing measures of customer behavior, and utilize additional information sources, such as in-store surveys or market research, to acquire a more complete view of customer paths to purchase.

Challenge for retailing activities: Customer experience integration

The second value creation challenge is the integration of different channels. That is, retailers face pressures to use their activities to form integrated total offerings to customers. Retailers must choose which value-creating activities are coordinated across channels to utilize synergy effects and create more value for the customer.

In many cases, customers use multiple channels to look for and evaluate products before committing to a purchase decision (Balasubramanian et al., 2005; Rangaswamy and Van Bruggen, 2005; McGoldrick and Collins, 2007). For many customers the online channel has become a useful information tool for comparing prices, checking availability and evaluating different brands, but the actual purchases are made in the store channel (Berman and Thelen, 2004; Rangaswamy and Van Bruggen, 2005). According to the interviewees, this change in customer behavior creates a need to coordinate value propositions and other marketing activities across channels:

"The promise that is given there, for example about product information or availability, naturally must be kept. That's the core of the business. That whatever is promised online is also kept.

-Director, retail consulting

"With the online store, we want to highlight what we're selling in our offline stores. And that is, that we are a department store. You can have anything. And if we have those products in our online store, then you'll probably realize that we have the same products at our offline stores."

-Head of online channel, department store

Customers form expectations from all encounters with the retailer, and these expectations must be met on each channel. Retailers can also use these effects to promote other channels, like in the quotes above. Likewise, an experience at a single channel will affect the image of the whole retailer. The elements needing integration discussed in the interviews were: pricing, offering, the overall customer experience, and information systems.

"Some of our competitors have different pricing strategies, but we have consistent prices. What you see online, you can get it at the same price offline."

-Managing director, specialty retailer

In general, retailers tend to use the same pricing scheme across all channels, because price differences might lead to customer confusion or cannibalization and conflict between channels. However, in some cases retailers can use different prices, by using channel-specific promotions, additional payments for collection and delivery, and selling different products at different channels (Neslin and Shankar, 2009). Nonetheless, the overall opinion was that most activities and elements should be integrated:

"In Finland a lot of retailers start going multichannel by opening online stores. To me that scenario is risky. Because if you start your online operations in a way that the end experience is bad for the online customers... if the pilot is using a too narrow offering or a different brand so that it doesn't appeal to the customers like the brick-and-mortar brand... if that experience is bad, then it can result in rejection and going to the competitors'. "

-Senior retail consultant

Retailers develop their channel-specific capabilities through pilot projects. The pilot is usually a new, standalone business unit, so that it can be eliminated quickly if necessary. The new pilots as standalone units face the risk of frustrating customers, if they are too distant in terms of the customer experience:

"*The important thing is that there aren't just a lot of channels. [...] The most important thing is how the customer experiences it. Does she view the online channel as a different thing than the traditional way to interact? Many are saying that the retailer should appear similar in all channels. Whether the customer goes to a store or views the mobile device or the internet, the "look and feel" should be the same. The experience should be the same. -Senior retail consultant*

We should serve the customer how and where he or she wants. [...] I mean we should be available in an easy way in all channels that our customers use. And the activities between these channels should be seamless. You order a product with your smartphone, and then return it to the offline store. The experience for the customer should be such that customer sees it as a coherent and seamless service."

-Development director, specialty retailer

Instead of only focusing on having the same "look and feel" across channels, the activities performed should also be integrated to allow flexible customer journeys. The design of the customer journey involves decisions about how and in which channels sales and customer service takes place (Peterson et al., 2010). In an integrated business model, sometimes called cross-channel retailing (Chatterjee, 2010), information, money and products can move freely across channels from the customer's point of view, and the customer can also be seen as being in charge of the process. The customer can exploit channel-specific benefits and avoid channel-specific sacrifices throughout the shopping process (Chatterjee, 2010):

"The overall offering, that is being multichannel, is the thing. You have to enable the customer to act in a multichannel way. That's the catch: that you give the option. The customer can go to our website and find a nice product, so he or she can check that it is available in these two stores, but it can also be delivered to him or her."

-CEO, electronics retailer

This integrated model creates great demands for re-

tailers in terms of product logistics, identification of customers and information system integration. The channels cannot be too different in terms of offerings, prices and other elements, which might lower the channels' ability to respond to local customer needs and competition (Chatterjee, 2010). For example, the need for cross-channel customer information was apparent in the interviews:

"In order to serve your multichannel customers, you would need information from all the channels and it would have to be in real time. [...] If the customer has for example bought a product online or from the stores and there's a problem with it the next day... So he or she calls the retailer's customer service. If the customer service doesn't know what's up, it won't leave a good purchase experience. The different channels really must be closely integrated in the sense of information systems."

-Director, retail consulting

Customer information should be available to each channel in real-time, which requires integration of information systems. However, too much integration might lead to inability to exploit the distinct nature of different channels and to adapt to differing customer needs:

"You can't tie down the online store in any way. The connection needs to be loose. You cannot set your goals too closely, because customers' shopping habits are changing so rapidly. But whether the online and physical stores should have the same assortment... there are a lot of opinions. Some small adjustments, like what is specific to the current market, like what can be done in in-store marketing, is acceptable. But if you stray too far, you lose the concept. But I do emphasize that you can't shackle the border of online and offline stores, because the situation is evolving so quickly."

-CEO, electronics retailer

The challenge is to find the right degree of integration between channels. The interviewees emphasized that customer behavior is so complex and in constant change, that the retailers are facing great challenges in keeping up with the change. As a solution, the business model could be designed so adaptable that it could serve a variety of customer needs and situations. On the other hand, too loosely integrated channels might lead to customer frustration, if the offerings, prices and activities differ significantly across channels. The shared view was that the company should find the optimal degree of integration through a process of trial-and-error.

Challenge for retailing governance: Internal conflict

Adopting multiple channels might lead to the creation of organizational silos with conflicting goals, lowering the firm value created when serving customers. Hence, the creation of the right kind of organizational structure is said to be the most pressing challenge in multichannel retailing (Zhang et al., 2010). The same view was apparent in the interviews. However, decentralized governance of channels might be a viable option in some cases:

"First retailers are piloting and keeping the online store separate. That way it's easier to establish and experiment. And you gain evidence of the implications. This way you don't have to solve these channel conflicts yet."

-Senior retail consultant

"Governance can be decentralized to business units. If the units have high growth goals, they are given the liberty to arrange their own activities. Then a certain business unit can have differing strategies from the rest of the business. For example, in these large retailers that are heavily investing in combining the online and brick-and-mortar channels, there are certain forerunner business units leading the change. In those business units, the managers are in charge of implementing this strategy."

-Director, retail consulting

A large number of retailers use decentralized governance models so that each channel has its own logistics, marketing and other functions. Another common governance mechanism is to separate channels into remote and store channels, because they differ so greatly in their value creation activities (Zhang et al., 2010). The decentralized organization enables a better focus and flexibility to respond to channel-specific competition and customer needs. When establishing online operations, for example, many retailers give the new channel's management freedom to adapt the business to channel-specific characteristics. Nonetheless, de-

centralized governance might be inefficient, because each channel has to organize its own activities (Zhang et al., 2010). It might also create situations where different channels of the same retailer compete:

"This channel conflict or jealousy between channels is a problem. We need tools to fight things like resistance to change. The activities at the traditional, physical stores are… they've been the same forever. And we need change in a lot of places. Resistance to change is normal for people. But we need to start thinking in terms of the whole."

-Development director, specialty retailer

The elements related to managing internal conflict were work assignments and training, attitudes, measurement, and incentives. Some interviewees expressed the opinion that conflict arises from not understanding the other channels. Where possible, employees could have work assignments that let them see how different channels are part of the same business:

"The same employees run the brick-and-mortar store and the online store. Everyone's doing everything."

-Managing director, specialty retailer

"So far everything is going well. The stores are really motivated. They feel that this change is also bringing them more customers. Of course it is a challenge to train 2,500 store employees. It is a challenge, but so far it is going well for these stores."

-Head of online channel, department store

The employees will be more motivated, if they see the multichannel business model as creating more value for not only the company, but also their specific channel. The right attitude should be oriented around the customers and the business as a whole rather than having a business unit-centered view:

"The employees need to be taught the right attitude, so that… in a way, the people at our stores need to realize that the online store isn't the enemy, that they both have the same goals. In many cases the viewpoint is centered on business units, so they only see their own unit… they don't see the company's benefit. I guess this is common."

-Development director, specialty retailer

Business unit or channel-centered views to business were seen as harmful to the overall value creation in the business model. Beyond training and attitudes, performance measurement was named as a challenge to the governance of the multichannel business model:

"Broadly speaking, the principle is that we should measure the company through the total development of revenues, not from the view of a single channel's evolution. Because it can't be based on anything other than the total company's volumes in sales, customer visits, purchase times and so on. Whether that is developing positively independent of whether the purchases are made online or in-store. There are a lot of ways in which to distribute resources for development, but the overall view is the starting point."

-Director, retail consulting

More important than performance measurement are the reward policies and incentives of managers and staff. The incentives should be aligned to meet the retailer's overall goals:

"The organizational incentives are one of the most critical elements. The leadership and management of people and the whole concept should begin with personnel incentives and the right triggers to drive the organization into being multichannel. […] Of course, also training and communications and other kinds of leadership are needed as well, but in my opinion the incentives are the critical element."

-Director, retail consulting

A careful orchestration of value creation is needed to determine the roles and incentives of the channel parties involved. The choice of retailing governance is not a simple choice between the dispersed and the integrated business model. Rather, it is about finding the right degree of integration, i.e., which activities are coordinated at the corporate level and which at the channel level (Zhang et al., 2010).

The main findings and their implications are summarized in Table 2. First of all, multichannel formats face the threat of customer showrooming behavior, i.e. customers utilize a retailer's services to determine the best products and then purchase the products from low-price competitors. To add to the challenge, the ex-

Table 2: Value creation challenges in multichannel retail business models

Retail business model element	Multichannel value creation challenge	Implications
Format	How to align firm and customer value creation?	The channel mix should balance customer value creating (e.g., high level of service) and firm value creating channels (e.g., low costs, high reach). The channels should be designed to create rational or emotional ties between the retailer and its customers, so that customers utilizing high-cost channels would purchase from one of the retailer's channels.
Activities	How to enable value creation that utilizes multiple channels?	Retailers should coordinate some activities across channels to allow customer value creation from cross-channel synergies (e.g. order online and pick up at store, or compare in-store and order online). This customer experience integration requires harmonizing positioning, branding, pricing, and offering across channels, as well as investments in centralized information systems and logistics.
Governance	How to avoid internal conflict in organizing value creation across multiple channels?	Designing performance measures, incentives, rewards, and internal culture to motivate internal coordination and discourage harmful competition between channels.

tent of showrooming behavior is very difficult to measure. Secondly, retailing activities should be coordinated and integrated to a degree that enables customers to seamlessly interact with the retailer across channels. This would require the coordination and integration of pricing, offerings, customer experience, and information systems across channels. Thirdly, the adoption of new channels and the integration of existing ones forces retailers to rethink their governance models. The governance model (e.g. performance measurement and incentives) should motivate employees and managers to maximize the total value created by the business instead of maximizing value in certain channels.

Discussion and conclusions

The aim of this paper was to explore the challenges of value creation in multichannel retail business models. The challenges were analyzed in terms of the retail business model elements, i.e. the retailing format, activities and governance. First of all, retailing formats, that have traditionally been the stages for both serv-

ing customers (customer value creation) as well as receiving customer information and payments (company value creation), are now facing pressures as customers switch to other purchasing channels after receiving benefits, such as advice or product information. This form of customer behavior, dubbed "research shopping" or "showrooming", is forcing retailers to reinvent their formats. What is needed is a better way to tie-in the customers to the retailer so as to allow for company value creation (sometimes referred to as value capture). Creating such ties in retailing is challenging, because retailers ultimately sell customer experiences. This business model design theme of lock-in (Amit and Zott, 2001) is difficult to achieve, because the ties are not contractual or technological in nature but more based on customer satisfaction and motives for repeat patronage.

Secondly, retailing activities needed to create superior customer experiences have to be coordinated across channels and formats. The elements discussed were, for example, pricing, offerings, and the overall customer experience. The degree of integration seems to be a choice between higher adaptability to channel-specific characteristics and a more coherent customer experience / brand image. Third, in line with earlier research (Zhang et al., 2010), retailing governance is perceived as the greatest challenge for value creation in multichannel retail business models. If the value creation is managed separately among channels and business units, internal conflicts can emerge to hinder value creation.

As a theoretical contribution, this paper empirically identifies value creation challenges in a specific context, lowering the level of abstraction in the mostly-conceptual business model literature. The business model reflects a firm's logic of value creation for itself and its customers, but due to the complex nature of multichannel business models, aligning these two goals becomes challenging. This challenge of value mismatch can be enlarged in situations where retail executive's focus too much on the customer value creation logic of their business models, ignoring or downplaying the role of firm value creation (Shafer et al., 2005). For example, retailers might create a lot of value for their customers through value-adding format and activity choices, such as service, product demonstrations, long opening hours, and store atmosphere, but end up losing sales to low-cost competitors.

As a practical contribution, this paper has analyzed the challenges retailers face in adopting multichannel business models. Customer tendencies for showrooming behavior highlight the need for generating efficient lock-in strategies. Customized, personal offers and information are ways to increase customer value, differentiate from competition, and achieve lock-in. Retailers have utilized their loyalty schemes, CRM activities and analytical capabilities to create such offers (Grewal et al., 2012). On the other hand, price-driven retailers can find ways to benefit from the situation by encouraging showrooming. Conflicts can be avoided with clearly defined roles and incentives. Managers should think of the company in terms of the whole and set performance measurement as well as incentives accordingly. In contrast to previous business model literature, this study did not adopt a network-centric view. By embracing the boundary-spanning nature of the business model (Chesbrough, 2010), other challenges and elements might have been discovered (e.g. challenges in managing relationships with suppliers). However, the focus of this study was on the value creation of retailers and their customers, and the interaction between these parties. Future research could therefore concentrate on investigating value creation drivers and challenges in a broader scope that encompasses more stakeholders.

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The Evolution of Network-based Business Models Illustrated Through the Case Study of an Entrepreneurship Project

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Abstract

Purpose: Existing frameworks for understanding and analyzing the value configuration and structuring of partnerships in relation such network-based business models are found to be inferior. The purpose of this paper is therefore to broaden our understanding of how business models may change over time and how the role of strategic partners may differ over time too.

Design/methodology/approach: A longitudinal case study spanning over years and mobilising multiple qualitative methods such as interviews, observation and participative observation forms the basis of the data collection.

Findings: This paper illustrates how a network-based business model arises and evolves and how the forces of a network structure impact the development of its partner relationships. The contribution of this article is to understanding how partners positioned around a business model can be organized into a network-based business model that generates additional value for the core business model and for both the partners and the customers.

Research limitations/implications: The results should be taken with caution as they are based on the case study of a single network-based business model.

Practical implications: Managers can gain insight into barriers and enablers relating to different types of loose organisations and how to best manage such relationships and interactions

Originality/value: This study adds value to the existing literature by reflecting the dynamics created in the interactions between a business model's strategic partners and how a how a business model can evolve in a series of distinct phases

Keywords: Network-based business models, stakeholders, strategic partners, longitudinal case study
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Introduction

In the near future, when markets are expected to become truly globalized and where technological developments potentially will enable even micro-companies to tap into global supply chains with great ease and flexibility, and where the same companies have the ability to reach global consumers and business-to-business marketplaces through the Internet, established companies will need to understand new ways of collaboration in order to sustain their businesses. The overall trend clearly points towards more collaboration between organizations (Gulati & Gargiulo 1999). In such a setting, the ability to create profitable network-based business models will become ever more crucial.

The ongoing global financial crises illustrates that in a global business cycle downturn, companies tend to focus on cutting their costs to a minimum, in turn reducing key resources and activities in their respective business models. Inevitably, such cost-cutting exercises will result in restrictions to the value proposition for customers. However, imagine the case where creating a network-based business model leads to both lower unit costs and a higher value proposition seen from the perspective of the customers. It is the objective of this longitudinal case study to understanding how partners positioned around a business model can be organized into a network-based business model that generates additional value for the core business model for both the partners and the customers. The ability to create such a structure ought to be the primary objective of any network-based business model in order to outweigh deficiencies such as lacking control, trust and inefficiencies.

In most cases when a company cuts it cost-base, take for example an airline carrier, it will have an impact on the service-level provided to the customers. Routes may be closed, flight-frequency reduced, service desks in local airports closed, in-flight service reduced etc. and all of these factors have a very direct impact on the value proposition towards the customer. In a recent contribution, Rindova *et al.* (2012) identifying three mechanisms linking partnering portfolios in strategic entrepreneurial networks that have an impact on firm growth: 1) configuring partnering portfolios to pursue distinctive logics for sourcing external resources, 2) aligning resource-sourcing and resource-linking logics in new product development, and 3) embarking on different growth trajectories, which contribute to different performance patterns. Hence, it is an interesting proposition to study whether new network-based business models factoring in openness, peering, sharing, and global positioning, could enable the possibility of enhancing the value proposition while at the same time reducing costs through partnering. This article reports the study of a network-based business model with precisely this ambition.

In studying the development of a network-based business model, Eye in the Sky (henceforth EIS), from an explorative perspective, we are able to map out a number of phases over which the business model developed and the barriers and enablers related to each phase. The results of this longitudinal research project provide insight into the implications of collaborating on delivering value to customers from a network-based perspective and provide valuable insight into the interdependent innovation (Kleinbaum & Tushman 2007) from inter-firm perpsective. Furthermore, this research provides a strong theoretical contribution relating to the tools for analyzing, developing and optimizing business models, in that the study finds weaknesses in relation to properly understanding and modeling the value creation that takes place between existing business models in the form of strategic partnerships and transactions. This study accentuates previous studies in the field. In particular, we advance the findings of Demil and Lecocq (2010), who also consider business model evolution. While Demil and Lecocq (2010) are specifically concerned with the dynamics created by interactions between a business model's components, this study adds value by reflecting the dynamics created in the interactions between a business model's strategic partners.

The remainder of the paper is structured as follows: Section two provides theoretical insight into, and discusses the value configuration of business models while the subsequent section reviews the notion of modeling network-based business models. Section four accounts for the methodology and provides a description of the case, while section five illustrates the evolution of "Eye in the Sky" network. Finally, the results are discussed and related back to theory in section six.

Understanding the value configuration of business models

New types of value creation. We have heard that song before. In the mid 1990's there was an overflow of literature documenting how new types of value creation spawned several new fields of interest such as e.g. intellectual capital, networks and e-business as important "new" drivers of value creation (cf. Zott *et al.* 2011) in the wake of the dot.com era. However, neither intellectual capital, networks nor e-business are by themselves new types of business models. Rather, they represent important sub-elements of business models. Intellectual capital has e.g. become a greater part of competitive advantage, while networks and e-business represent choices for customer contacts and customer-targeting strategies respectively. Another way of denoting this is that the value configurations that companies apply to become successful have altered as Sweet pointed out already in 2001.

Our postulate here is that as new types of value configuration emerge, so do new business models. Therefore, new models and tools for working with the identification, analysis and development of value are needed in order to illustrate the effects of managerial decisions on value creation. Accordingly, managers must recognize that business models are made up of portfolios of very different resources such as networks, competences, customer loyalty, and not merely traditional physical and financial assets. Therefore, "every company needs to create a business model that links combinations of assets to value creation" (Boulton, Libert, & Samek 1997, 33).

The rising interest in understanding and evaluating business models (Nielsen 2011) can to some extent be traced to the fact that new value configurations are starting to outcompete existing ways of doing business. Already a decade ago, Sandberg argued that changes in the competitive landscape had given rise to a variety of new value creation models within industries where previously the "name of the industry served as shortcut for the prevailing business model's approach to market structure" (Sandberg, 2002; 3) and that competition was increasingly between competing business concepts (Hamel, 2000) and not between firms with different strategies. One attempt at defining what a business model is states that "A business model describes the coherence in the strategic choices which makes possible the handling of the processes and relations which create value on both the operational, tactical and strategic levels in the organization. The business model is therefore the platform which connects resources, processes and the supply of a service which results in the fact that the company is profitable in the long term" (ANON.). As such this idea correlates with Hamel's arguments and emphasizes that a business model is the platform, which enables the strategic choices to become profitable (see also Seddon *et al.* 2004).

Resources are often mentioned as central aspects in business model frameworks (Betz 2002). Klaila (2000) explains how the description of a business model helps, e.g. managers and employees, to identify the critical behaviors, competencies, and market conditions and account for the key resources that are present in the company. From such a resource-based perspective these resources are key inputs to the value creation process of the company (Boulton *et al.*, 1997). As it, for some organisations at least, can be rather complex to understand the roles of the many different resources in the total value creation of the company (Covin & Stivers, 1997), the business model approach becomes advantageous, because it, in the words of Miller, Eisenstat & Foote (2002) visualizes the capability configurations of the company, understood as the cohesive combination of resources and capabilities embedded within its infrastructure that generate value.

The value chain is a typical example of a value configuration. Porter defines the value chain as a tool for analyzing the sources of competitive advantage of the firm because "The value chain enables a systematic examination of all the activities a firm performs and how these activities interact" (Porter, 1985; p. 33). Every firm is essentially a collection of interdependent activities that are performed to create value. According to Shank and Govindarajan (1992) the value chain is "the linked set of value-creating activities all the way from basic raw materials to the ultimate end-use product delivered into the final consumers' hands" (ibid., 179).

Within the notions of business models, the value chain is argued to comprise the activities and organization

of the company (Hedman & Kalling 2003) and the structure of the company (Alt & Zimmermann 2001). In Bell *et al.*'s (1997) client business model framework for example, core business processes and activities, and the analysis hereof, are also viewed from a value chain perspective. Likewise, Chesbrough & Rosenbloom (2002) imply that the value chain perspective leads to the identification of the activities and assets (inputs) that are necessary to deliver the value proposition of the company (outputs).

However, there are alternative value configuration models to that of the value chain. Stabell & Fjeldstad (1998, 414) suggest that the value chain is but one of three generic value configuration models. Based on Thompson's (1967) typology of long-linked, intensive and mediating technologies, they define the value chain as a value configuration that models the activities of long-linked technology. Stabell & Fjeldstad (1998) argue that the distinction between these three generic value configuration models is the key to being able to analyze firm-level value creation.

Sweet (2001) identifies four strategic value configuration logics: value-adding, -extracting, -capturing, and -creating and argues that it is the ability to manage these logics well, rather than the ability to create new business models that leads to sustainable success. By stating this, he confirms the necessity of understanding how the business model and its value creating elements work, as a prerequisite for managing the company. Ramirez (1999) too, offers an alternative view to that associated with value creation in industrial production, arguing that technical breakthroughs and social innovations in actual value creation render the alternative, a so-called value co-production framework.

The first of the two alternative generic value configuration models proposed by Stabell & Fjeldstad (1998) is the value network logic. It models firms that create value by facilitating a network relationship between their customers using a mediating technology, e.g. like an infomediary or innomediary, as Sawhney *et al.* (2003) explicates. The second alternative to the value chain is the value shop logic. It concerns firms where value is created by mobilizing resources and activities to resolve a particular customer problem. Hence, both of these value configuration logics have significant similarities to our network-based business model setting.

This discussion naturally leads us to the field of networks, which has rendered much attention in recent years (cf. Castells 2000) and network analysis in order to frame an understanding of network-based business models. A network consists of specific roles and value interactions oriented toward the achievement of a particular task or outcome (Allee, 2008). Despite the fact that there has been a significant amount of attention directed towards understanding the role of interorganizational networks and alliances (Gulati 1998) and for example which contingencies that affect the success or failure of a relationship, (cf. Batonda & Perry, 2003; p. 1), very little attention has been directed towards the evolution of networks (Anderson et al., 1994; Håkansson & Snehota, 1995).

Batonda & Perry (2003) describe three schools in relation to network evolution: stage-theory, state-theory and joinings theory. The stage-theory contains two main theories: life cycle models and growth-stages models (Batonda & Perry, 2003; 1458), both focusing on how inter-firm networks gradually develop through sequential stages, and over a period of time (see also Ford, 1980; Van de Ven, 1992). State-theory comes from a different school of thought, and is in opposition to the sequenciality thoughts on which stage-theory is based. Instead, state-theory suggests that actors in a collaboration move randomly from one state to another (Anderson et al., 1994; Håkansson & Snehota, 1995). Joining-theory is more centered on what happens at the beginning of a network and how the entry has a major influence on the further development of the network (Thorelli 1986, Batonda & Perry 2003). This could for example be the case when the way in which partners are identified and recruited has an influence on the outcome of the network.

Batonda & Perry (2003) conclude that companies that are new in network settings often tend to think of the collaborations as following a sequence of stages, while more established companies or companies that are network-based themselves tend to accept the approach of the state-theory. Finally, Batonda & Perry (2003) argue that joining-theory is not applicable when focusing on inter-firm network development. This

study will utilize these experiences when conducting the research, but before outlining the specific use, it is necessary to describe the context of network analysis.

According to Lazzarini, Chaddad and Cook (2001), network analysis is based on the recognition that network structure constrains and at the same time is shaped by firms' actions (Granovetter, 1973; Nohria, 1992), and provides a series of techniques to map out the structure of interorganisational relationships. Lazzarini *et al.* (2001) introduce the concept of *netchain analysis*, which provides a framework, which is able to encompass the value-shop and value-network configurations of Stabell and Fjellstad (1998) and thereby constitutes a viable framework for analyzing network-based business models. A netchain analysis explicitly differentiates between horizontal (transactions in the same layer of the value chain) and vertical ties (transactions between layers), mapping how agents in each layer are related to each other and to agents in other layers (Lazzarini *et al.*, 2001; p. 7). The framework distinguishes between three types of interdependence in the network, namely sequential, pooled and reciprocal each of which spurs distinctly different types of value creation sources.

Allee (2008) argues that in order to facilitate the analysis of the value of a network, knowledge and intangible value exchanges must become an integrated part of the models applied in visualizing value configurations along side that of information, physical and monetary transactions. Even if network analysis is becoming more and more important, only few studies have contemplated how the intangible resources of companies interact to create value for the whole network (Allee, 2008; Solitander and Tidström, 2010; Peng, 2011; ANON.).

In the words of Zott and Amit (2009), business models go well beyond traditional views on network theory and emphasize the inclusion of factors such as purpose, acceptance, fairness, coherence and viability. Our synthesis here is therefore that the business model constitutes a value creation "core" based on the interaction of a number of generic building blocks (cf. Chesbrough, 2006; Osterwalder & Pigneur 2009), and that it is embedded in a network of partners and alliances that contribute to value creation through supplying resources or performing activities and that these partners are not only restricted to interacting on the traditional value chain perspective, but can perform downstream customer activities and even core value proposition enhancing activities. This is much in accordance with Zott and Amit (2010), who argue that a business model is a system of interdependent activities that transcends the focal firm and spans its boundaries and that the activity system enables the firm, in concert with its partners, to create value.

The process of designing network-based business models

One way of visualizing a business model is through the Business Model Canvas, a conceptual tool developed by Osterwalder & Pigneur from ca. 2003 to 2009 (Osterwalder & Pigneur 2009). The Business Model Canvas describes a business model as being based on nine interrelated building blocks where the centrally placed value proposition links the infrastructure of the company (down-stream activities) with the customer (distribution and after sales relationships).

Osterwalder & Pigneur's work (cf. Osterwalder 2004, Osterwalder, Pigneur and Tucci 2004; Osterwalder and Pigneur 2009) has provided a popular framework for describing, understanding and developing business models. This is primarily due to the fact that the canvas is an intuitively applied template from which to discuss the "how's" and "why's" of the activities and choices made by a company in order to achieve a sustainable position in their industry. The model does not prescribe any particular starting point for the analysis, or any particular order of discussion. Rather, it prompts the user(s) to focus on natural connectivities between the nine building blocks that make up the model. Osterwalder & Pigneur (2009) propose a process of applying the canvas to describe the "as-is" model of the organization, and thereafter to focus on strengths and weaknesses and finally try to narrow down potential "could-be's" and evaluating this business model innovation in a SWOT-like manner. A limitation to the framework is the static nature of the business model canvas, in view of the desire to generate new innovative business models.

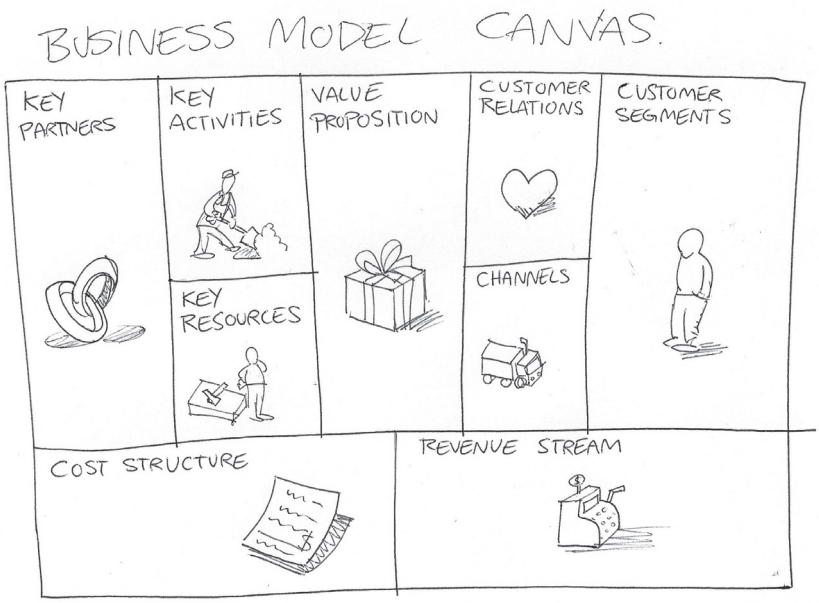

Figure 1: The Business Model Canvas

Furthermore, the Business Model Canvas framework encounters limitations in cases where several companies and individuals form a network in a new business model. There seems to be a need to develop an additional layer to the framework for each partner (stakeholder) and for the network at a whole so that it may encompass the network of partners and alliances that contribute to value creation through supplying resources or performing activities as described in section 2 above. A network-based business model is a business model where two or more, and often several, stakeholders create a joint value proposition or jointly affect a value proposition based on the key activities and resources of all stakeholders. The partners are not only restricted to interacting in a traditional value chain manner i.e. sequentially (Lazzarini *et al.* 2001), but can perform downstream customer activities and even core value proposition enhancing activities.

A company's ability to tap into and again tap out of these networks, interorganisational relationships and processes and its ability to innovate across the network capabilities that present themselves; will become a competitive advantage in itself. The notable success of several innovative network-based business models in recent years ,such as Apples network of App-companies and Groupon's success with merging sellers and buyers, supports the notion of including business partners in the design and innovation process of business models. Network-based business models may be constructed in a variety of ways. Below we provide a number of examples that illustrate this.

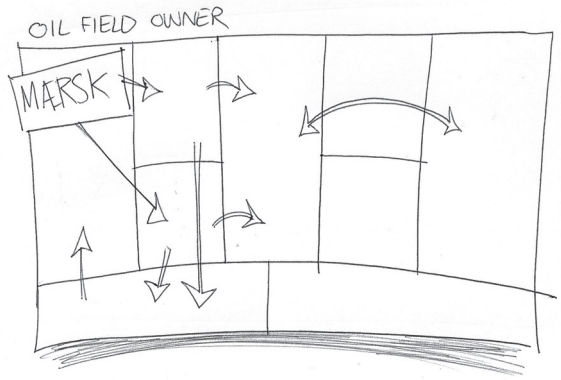

Figure 2: Partners can influence value creation

A network-based business model in the context of the Business Model Canvas (Osterwalder and Pigneur 2009) seems to lack an additional layer to capture the network dimension. The Business Model Canvas it self contains a building block entitled "network partners" enabling the user to identify who the key partners and suppliers are, which resources they are providing and which activities they perform. In the Business Model Canvas, the partners have a direct effect on the key resources and activities affecting the cost structure of

the company. If we take the example of an oil driller that offers owners of oilfield to develop, drill and produce oil they become a key partner in the business model of the oilfield owner. Figure 2 illustrates that the oil driller provides key resources; pioneering technologies, experienced personnel and machinery. They can implement key activities; preforming all tasks in drilling and processing the oil affecting the cost structure and the value to the customers in the oilfield owner's business model.

In this case the Business Model Canvas describes how the use of partners affects the value creation delivered to the customers. In other words it describes how partners or suppliers interact with the case company's business model. It can be argued that the above example is a network-based business model, hence, two or more partners affect the value proposition based on the key activities and resources of all stakeholders. In the case above, it is the oilfield owner's business model that is at the core and the Business Model Canvas provides a good platform for understanding the key attributes of their business model. In another type of business model, two or more companies may pool their resources and activities into a joint business model providing a joint value proposition for the customer as illustrated in figure 3.

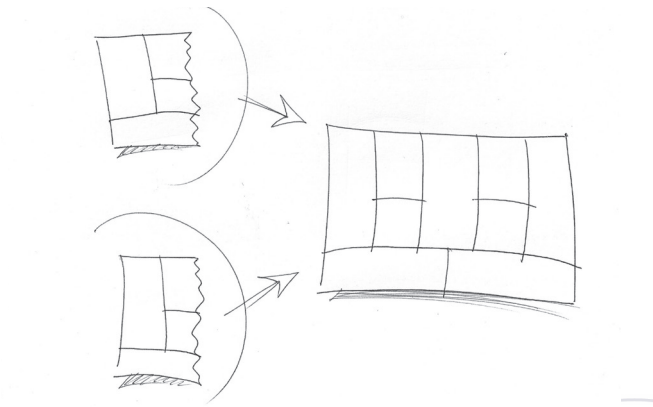

Figure 3: Partners as substitutes on the back-end business model

Such a setup occurs in various contexts like for example joint ventures, business collaborations, co-branding of products etc. In such cases, the limitations of the Business Model Canvas become clear in the context of describing network-based value creation. The Business Model Canvas does not provide a detailed enough description of the actions and relationships occurring between the stakeholders, nor the financial structure and risk between the stakeholders.

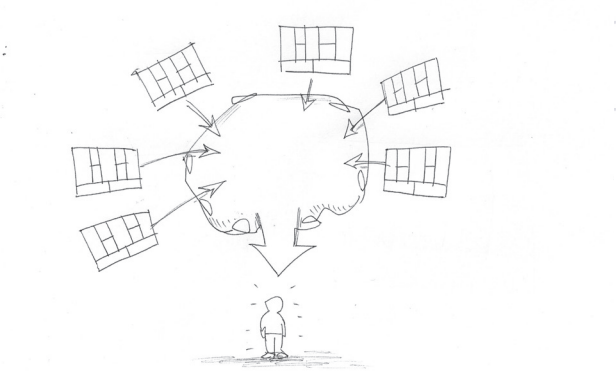

Figure 4: Several business model add value

A third example of a network-based scenario is the "equal partnership model" where two or more partners (in figure 4 exemplified by six Business Model Canvasses) add relevant core resources and activities into a joint business model creating a new "pure" network-based business model. These brief examples indicate a potential weakness of the Business Model Canvas when it comes to treating partners in relation to network-based business models, because the partners are creating business models in the network relationship itself. Furthermore, it may be problematic for understanding value creation flows that some customers also can be treated as strategic partners.

The DNA of a network-based business model

We hypothesize that network-based business models can be structured in different patterns, much like the existing literature on singular business models denotes (cf. Osterwalder and Pigneur 2009). However, in the network-based setting the characteristics of the stakeholders and the structure between them define the stakeholder patterns and are a part of what might be denoted *the business model DNA*. In this DNA, the stakeholders are the companies, organizations and individuals that make up the core company's business model.

Methodology and case description

Methods

In this section a case study is introduced to illustrate how a network-based business model arises and evolves and how crucial the awareness of the dimension of *multiple collaborators* is for the creation of a new business model. A Danish research program "International Center for Innovation" (ICI) was initiated in 2007, ending in March 2013. The project aimed to inspire and assist participants in a development process of innovating new network-based global business models and in providing a solid base for relevant qualitative data, parallel to a business and industry ambition of creating sustainable business models for the companies involved. The collaborating companies were structured into networks consisting of at least 5 companies. Each network was followed for at period of at least two years. ICI has since 2007 followed and documented the development of 10 network-cases including a total of 92 companies that were in the process of understanding their business model with the ambition to innovate their existing business models to become new global network-based business models.

The case study presented in this article is based on a longitudinal case study over a period of 3 years of a Danish start-up called Sky-Watch and its network partners in the ICI project called Eye in the Sky (EIS). The network of companies and individuals behind Core Company developed a new business model for drone helicopters. Sky-watch has about 20 employees and has an annual turnover of an estimated € 10 million.

The longitudinal study of EIS was a longitudinal interventionist research project (Lukka 2005) which was combined with a series of non-interventionist type semi-structured interviews (cf. Yin 2003). The research group mainly followed the whole network, including the founders of Sky-Watch, the CEO and senior staff from the company, as well as selected partners, consultants and researchers. The project had a defined goal to globalize its drone helicopter product. During the research project, there have been numerous meetings, workshops, reports and semi-structured interviews, which are recorded and/or documented with minutes, pictures or video. The terminology of the business model was introduced to all participants, and especially the use of the Business Model Canvas (Osterwalder & Pigneur 2009), and narratives exemplifying existing, successful business models.

The evolution of "Eye in the Sky" network

The following is an account of how the Eye in the Sky (EIS) network evolved through a series of phases. This case study illustrates how the business models of the related companies affect one another and how they form the value creation of the core company. The Eye in the Sky (EIS) network was one of the first projects in ICI and is a remarkable example on how a new business arises from a network of companies supported by a public innovation program. From the start in the ICI project, it was the assumption that the ideal network pattern for a network-based business model would follow the structure of a so-called "partner business model" figure 1, where it was hypothesized that at least five partners added their core resources and activities into a joint business model creating a pure network-based business model.

This ideal network pattern was the platform for founding a new network based business model that in the case of the "Eye in the Sky network" evolved in a number of network stages providing us significant data showing how the network dimension evolves in stages.

Phase 1. The birth of a new network based business model

The Eye In the Sky network was initiated by Access2Innovation, a research program situated at Aalborg University with the aim of bringing together NGOs, universities and private companies in a triple helix construction, in order to contribute with a series of innovative solutions for the work done by relief organizations in third world countries. In the spring of 2008, five companies were invited to take part in a project working with a product development idea at the Department for Automation and Control at Aalborg University. The idea was originally identified by DanChurchAid's Humanitarian Mine Action group, a Danish NGO.

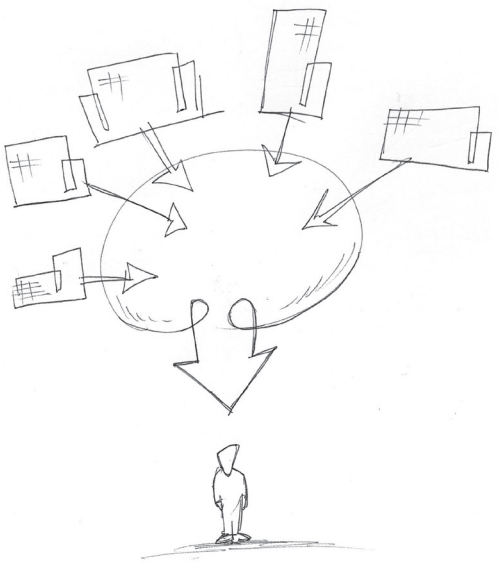

Figure 5: The partner business model

The starting point of the dialogue was an autonomous mine-seeking drone helicopter developed at Aalborg University. DanChurchAid had vast experience in landmine seeking and landmine removal, and could therefore provide knowhow. Relatively quickly they rejected the sustainability of the idea because their experience told them that such areas often were often prone to heavy competition. They instead identified a need for aerial photography to map out areas and creating an automated overview. These data are often outdated or not existing for landmine-infested areas in developing countries.

Combining the idea of an airborne mine-seeker and the demand for areal photos spawned the idea of a small versatile unmanned drone helicopter, which could take the required aerial photos of the minefields. With the project defined, the notion of a pure network-based business model was initiated by identifying which key resources and activities were necessary for developing, producing and manufacturing the drone helicopter.

This led to the gathering of 5 partners; **Mekan** contributing with mechanical competences, essential to manufacturing the first prototype. **Danish Aerotech** having competences on the manufacturing of mechanical, structural and electrical components for airplanes and the design of these. Additionally, they had experience with airplane and helicopter maintenance, and provided especially the mechanical knowledge and the maintenance of flying units had relevance to the project. **GomSpace** worked on components for satellites and the control hereof, offering knowledge on power source for the drone. **NetImage** had expertise delivering web-based solutions within e-trade, e-service and digital billing, and had therefore competences within data control and data-structure, along with competences within construction of the user interfaces to be utilized in the control of the helicopter. **SpaceCom** had knowhow in the field of satellite communication and radio connections, which were vital for the communication between the control-unit and the helicopter, and for controlling the geo-referencing of the picture material. **DanChurchAid** was, as mentioned, providing the demand for the product, and therefore constituted the reference customer for the drone. As such they were treated as a partner too, because of their ability to provide knowhow on the customer value proposition needed.

The five companies all had a natural interest in the project because their individual contributions were similar to what they were doing in their existing businesses, and at the same time not competing with their existing market. Furthermore another motivation was that the financial crises had started kicking in, and all of the involved companies were experiencing tougher times due to a downturn in the business cycle. This added to the interest for the project and the expectation of getting development activities fully funded by ICI was welcomed. This led to the start of the development of a prototype of the drone, and during this work it became clear that in order to lift the project each and every partner would have to commit to investing part of his or her own capital too. In this phase of the network, we identify elements of the problems that Zott and Amit (2007) encounter in relation to the counterproductive problems when entrepreneurs attempt to incorporate both efficiency- and novelty-centered design elements into their business models.

Phase 2. A Shake and Bake setup

The project was left in a critical state because the partners started losing interest in it. This was primarily due to the fact that they had been given the impression that

the development would receive full external funding via the ICI project, which was a misunderstanding. After a period of standstill, one of the employees started raising money for the project on his own. As the project was in a seed phase, only few funding opportunities were available. However, he managed to convince his father to invest and at the same time involved a local business incubator as a source of syndicated funding. This led to the registration of a separate company, Sky-Watch A/S.

The partners were still relevant to the project of developing a drone helicopter, but only a one of them was willing to invest money in the project. Therefore, the network making up the business model changed from the pure network model to what could be defined as a shake a bake setup (fig 6).

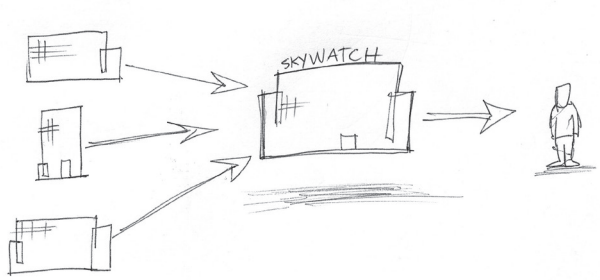

Figure 6: The shake and bake model

The shake and bake setup differs from the pure setup by having an entity that is the project owner, and that only assembles the ingredients from the other partners, combining their resources and activities into the final product. An ideal shake and bake setup is owned by all or most of the relevant stakeholders making up the business model or the stakeholders have some other significant incentive committing them to the project. In this case the "non owning partners" were still committed to the project through the anticipation of receiving a subsidy for product development, alternatively creating a potential customer for their existing business. This phase is identical to Zott and Amit's (2009) conception of a network-based business model, where there is a focal firm at the core of the network.

Phase 3. A "normal" business model

Most "normal" business models replicate the structure of the value chain, and thus consist of a central company that buys raw materials and components etc. from suppliers and where external stakeholders interact and affect the business model through relationships and monetary and physical transactions.

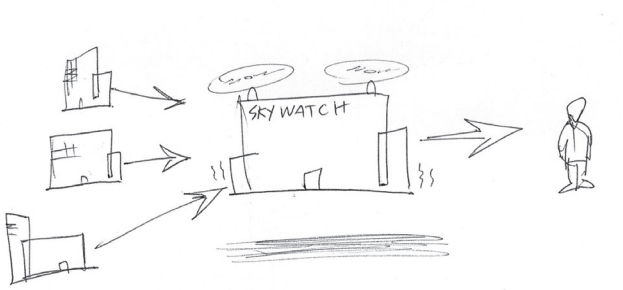

Figure 7: The normal Sky-Watch business model

Sky-Watch A/S was developing more and more into a separate company, devaluing the retention of its partners' stakes in the. Due to its organic growth, Sky-Watch started experiencing limitations in relying on its original partners, their technology and knowhow and identified the need of starting their own R&D department, which took place in the summer of 2010. This led to a regular break with the shake and bake setup.

On the one hand, Sky-Watch experienced problems in relation to their original partners' ability to deliver on time, which made it difficult to coordinate development and production. Most importantly, the software/hardware solution previously employed was very difficult to configure to the original purpose with the drone. This was in part due to a poorly managed database, along with inflexible hardware. Sky-Watch realized that in order to build a profitable business, they needed to be able to access several different customer segments. This in turn required them to take control on the central hard- and software competences, in order to produce a solution that was flexible enough to be quickly adapted to new market segments. Concurrently, this would also

increase the value of the firm, as they would come to possess a range of vital product competences within their field.

Many of the electrical components were bought off the shelf, while central circuit boards were designed in-house and subsequently made to order from suppliers. The manufacturing of the shell was to be handled by suppliers, based on the blueprints from Sky-Watch. Yet, the demand for rapid prototypes and the unreasonable costs associated with small batch productions later led the company to acquire a 3D printer. This was in part used to manufacture prototypes, but also to produce special parts for limited batch productions.

This entailed a large substitution of partners in and around the business model. With the control system in-house, Gomspace became largely redundant, yet collaboration with this partner continued on various shared components. NetImage proved not to possess the necessary competences for designing a user interface for a helicopter, as this required significant knowledge on how a helicopter operated. Furthermore, Mekan proved less relevant, as a larger part of the new design was to be in plastic. Danish Aerotech continued as a central partner, as they worked within a non-competing product in a similar segment. In that respect, Danish Aerotech had significant insights into the legislation within the field, while Sky-Watch could provide them with insights into a new interesting market segments. DanishChurchAid also continued as a partner, as they maintained an interest in the products and could help introduce Sky-Watch to the NGO segment. In that respect, they proved a valuable partner, by actively pushing the story of the collaboration to the press. This generated some attention towards the project, which in turn provided legitimacy, which could be used towards military and other commercial segments.

As such, the network encompassing Sky-Watch was structured in such a manner that it was consistent with the changed structure and purpose of the firm. In that respect, a new network was configured based on the more value-chain based approach, in which Sky-Watch would carefully choose which activities were essential to the company, and which were best served by outsourcing.

Phase 4. The channel partnership

As the drone moved closer to a commercial product ready for the market, Sky-Watch began looking thoroughly into the sales possibilities on the NGO market. This proved significantly difficult to penetrate, as NGO's typically do not contain the means to make investments. Any investments are typically brought in through sponsorships of specific projects. This meant that the lead-time would be very long and wrought with uncertainty. Furthermore, sales to the UN-system required suppliers to have an established sales record, along with inventory stock and other resources, which Sky-Watch, at the time, simply did not possess. As a consequence, the firm began uncovering the possibilities for serving other segments, especially focusing on industrial inspection and military usage. In that respect, the company continued to emphasize a network approach, by searching for potential partnerships with organizations that had existing distribution and sales channels in those segments. Therefore, we denote this the "The Channel partnership" phase. This resulted in a partnership with a stakeholder that opened to sales and a service organization to the global market.

Phase 5. Moving towards a Platform-based business model.

In our work with Sky-Watch we introduced the idea of a "platform business model". This is a business model where the product becomes a platform for new business models and at the same time provides value for existing customers. An example of a successful platform is Apple's products. When Steve Jobs back in 2010 introduced the Ipad he showed us a new product and at the same time manifested their business model as being a digital supermarket. In the process of working with the Apple-metaphor the company began uncovering more application possibilities, which emphasized the potential of the product. Through talks with different agents in different business segments that could be related to the drone helicopter, many different possibilities surfaced. However, each and every one of these different application possibilities would require specialized equipment beyond the current camera functionality.

This made Sky-Watch realize that fulfilling this business potential would be extremely difficult. They would have to develop or purchase specific components and

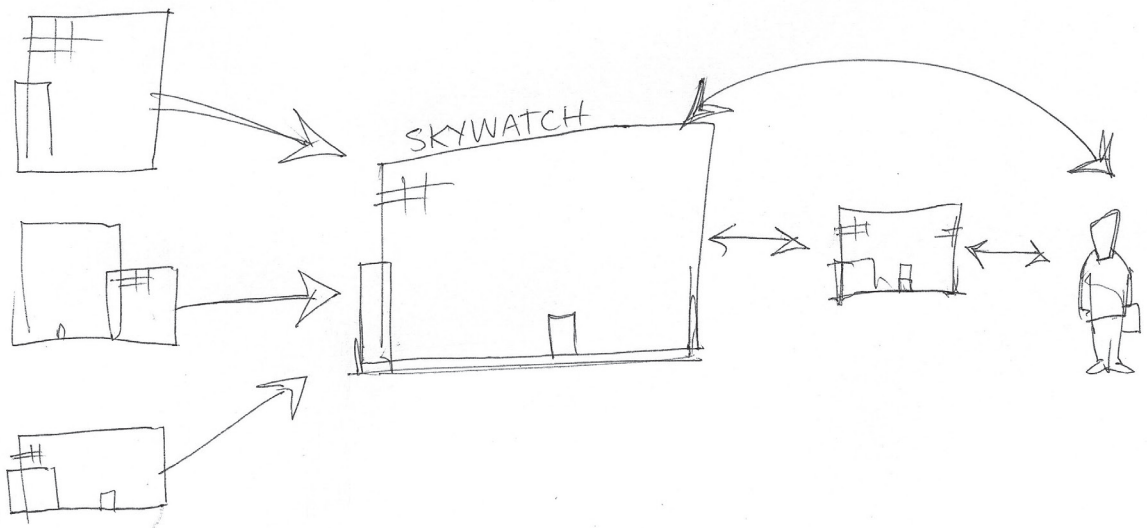

Figure 8: The channel partnership

integrate the necessary data treatment processes, associated with areas which they were not competent in. The solution was a new business model developed in collaboration with ICI. The helicopter was to be considered a basic unit, which contained different possibilities for attaching other components. Thereby, the functionality could be extended significantly. On the product level, this meant that the helicopter was to contain new functionalities, which would enable the unit to send data back to the control station along with the ability to control the attached equipment.

In that respect, Sky-Watch changed character. From having been a company focused on visual documentation through a camera, this functionality became a subcomponent in the guidance of the helicopter, on to which other components could be attached. In that respect, the firm created a platform where the possibilities would be highly dependent on the application possibilities developed by other partners. This enabled Sky-Watch to overcome the limitations they previously operated under, in relation to spreading the product to new segments. This would just require them to find the right partners to develop the application possibilities.
The context for this is also that Sky-Watch began reconsidering what constituted their core competencies. Rather than only considering themselves to be a development company specialized within UAV helicopter solutions, they realized that their competences were not necessarily specific to helicopter drones. Rather, it was the actual control of autonomous units that was their core competence. This indicated that the control and guidance competences of the firm could be applied to other units, for example drone submarines. Yet, the helicopter solution remained the core product, which was to drive the firm forward. This necessitated that the product was finished, manufactured and distributed. As such, the firm had laid out the groundwork for a two-sided business model, in which one targeted selling control and guidance competences, while the other targeted the helicopter solution. In order to build profitability, the firm chose to focus specifically on the helicopter solution, by building production capacity and distribution network for the helicopter specifically. Through this platform-based business model, Sky-Watch was able to turn potential competitors into customers, thus replicating one the three ways companies can compete through their business model (Casadesus-Masanell and Ricart, 2011).

Discussion and concluding remarks

The empirical section above is a detailed elaboration of the implementation process of a new network-based business models. It illustrates the involved entrepreneurs managed the uncertainties they were confronted with in their innovation process through five consecutive phases. Most importantly, it illustrates how the changes in network configuration over the five depicted phases challenge the existing frameworks for generating and analyzing business models. Particularly the application of the Business Model Canvas (Osterwalder and Pigneur 2009) and how it incorporates the relationships between stakeholders and their respective impacts on each other's value creation and value configurations are advanced.

Through the research conducted on the 10 network-based business models constituting the ICI project, several start-up business models have been analyzed. Initial evidence suggests that they often have a very poor overview over the relationships between the activities performed, the necessary resources, and how to configure the involvement of partners in their business model. The Sky-Watch case study presented in this article suggests that the entrepreneurs' ability to understand the business model and the ability to manage the network-evolution pattern are key success factors. Sky-Watch's success is particularly due to their ability to adapt the business model continuously and to understand and coordinate activities, resources, and how partners became involved in value creation.

In the first phase of the EIS network, the network of stakeholders took the form of a pure network. Here the core business model becomes a fusion of actors' activities, resources and partners. In the initiation phase they had not taken a position on the future form of the company but rather focused on how the stakeholders could create a joint product. The association/glue between the partners was a potential project financing, whereby the individual stakeholders would get subsidized for product development. When reality showed a more complicated financing structure, the network gradually dissolved. At the same time the stakeholders kept sympathy for the project they themselves had helped to set up, which meant that the "new company" Sky-Watch could create a shake and bake model where they were able to capitalize on the goodwill from the initial stakeholders.

In the ICI project three networks that attempted to maintain a network-based business model in a pure form with a varying number of key stakeholders. However none have been successful. Among the key problems is that it is difficult to create an ownership model and it is difficult to find projects where stakeholders are able to mix their existing business models to something new, without the new business models potentially interfering, hurting or directly cannibalizing their existing business.

Sky-Watch established itself initially as a Shake and bake setup. It enabled them to have access to resources and activities through the involvement of committed stakeholders. This simultaneously reduced the need for a number of costly resources such as know-how, production equipment and technology, at the same time reducing the need for capital. The shake and bake setup enabled them to successfully create proof of concept and gain access to additional financing. Finally, through the platform-based business model implemented in phase five, Sky-Watch were able to turn potential competitors into customers, thus replicating the mantra of Casadesus-Masanell and Ricart (2011, 8) who exclaim that the ability to build complementarities with rivals' cycles can result in substitutes turning into complements. This is precisely what Sky-Watch had succeeded in doing.

When juxtaposed to Stabell & Fjellstad's (1998) three types of value configurations, the Sky-Watch case illustrates how the network evolves from a value shop configuration to a value network configuration over the five network phases. This is surprising, as the pure network form starting out in phase one and the platform-based business model form ending in phase five each lend themselves more naturally to the opposite. The explanation is perhaps that the explorative nature of the network in phase one has a higher impact on the choice of value configuration. However, part of the explanation in this case study is the way in which the partners were joined and the particularities of the network partners, including their objectives for entering the initial research project. One might ponder if this

company had existed at all today if there had not have been a misunderstanding as to how the finance and subsidy structure at the beginning of the project was set up? As such this study touches upon the missing focus on networks in entrepreneurial contexts identified by Stuart and Sorensen (2007), who argue that a disproportionate quantity of research focuses on the consequences of networks at the expense of research on their origins.

The Sky-Watch case likewise shows us how a new network-based business model is implemented and legitimated through the application of storytelling about successful metaphors of doing business – in our case the platform-based business model applied by Apple and Groupon. The development of new interdisciplinary networks like for example Apples, however, contains a number of barriers and challenges going forward - both for businesses and for researchers. A significant paradox is, that although network-based business models have the potential to become vital catalysts of value creation through by becoming a hub for innovation and development of global business models, very few companies are potentially "leveraged" to practice the innovation of business models in networks. It goes without saying that companies are "handicapped" by their corporate culture and not least their "learning culture" which is typically characterized by hierarchy, "single business model thinking,", planning, and push and pull economy. It may require an entirely new knowledge set to cope with the "multiple collaboration" and "multi-business model" economy (see also Lindgren, Taran & Boer 2010). However, it is not enough to be able to get the ideas and concepts for new business models "merged" together - but it is also necessary to act on them commercialize them quickly, globally - and thus to different markets. As such, this article also contributes to understanding the institutional factors both favoring and impeding the emergence and success of network-based business models. The success in this particular network-based business model lies in the ability create multiple collaboration, by Rindova *et al.* (2012) denoted configuring partner portfolios.

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