

**Working Paper No 35/11**

**An analysis of the interplay among the dimensions of  
the business model and their effects on performance**

by

**Leif B. Methlie  
Sven A. Haugland**

SNF project no 1304

“Seamless Infrastructures, Business Models and Cultural Diversity”

**THE ECONOMICS OF MEDIA AND TELECOMMUNICATIONS**

This report is one of a series of papers and reports published by the Institute for Research in Economics and Business Administration (SNF) as part of its telecommunications and media economics program. The main focus of the research program is to analyze the dynamics of the telecommunications and media sectors, and the connections between technology, products and business models. The project “Seamless Infrastructures, Business Models and Cultural Diversity” is funded by The Research Council of Norway (VERDIKT).

INSTITUTE FOR RESEARCH IN ECONOMICS AND BUSINESS ADMINISTRATION

BERGEN, DECEMBER 2011

ISSN 1503-2140

© Dette eksemplar er fremstilt etter avtale  
med KOPINOR, Stenergate 1, 0050 Oslo.  
Ytterligere eksemplarfremstilling uten avtale  
og i strid med åndsverkloven er straffbart  
og kan medføre erstatningsansvar.

## **An analysis of the interplay among the dimensions of the business model and their effects on performance**

Leif B. Methlie  
Sven A. Haugland

### **Abstract**

The main research issue raised in this paper is the relationship between business model conduct and performance. We have in this paper developed and discussed a business model framework based on a literature review of business model frameworks published in the years 2001 – 2011. From this review, a four dimensional framework emerges where each dimension represents major conduct variables such as what value to offer the customer; how to approach these customers; how to create this value; and how to capture firm value. In addition, the purpose of this paper is to enhance our understanding of the complex interplay between these four dimensions, and to point out that specific decisions in one dimension may impact several other dimensions. To study these interactions, we have proposed a research model and developed a set of propositions. The framing of the propositions highlights some important consequences of making certain decisions in one dimension, and the consequences of this decision on other dimensions.

## Introduction

The new business environment imposed by heterogeneous electronic networks changes the markets of network services and forces players in the market to reposition themselves in the value creation processes. This repositioning is driven by the last generation ICT, symbolized by the Internet, providing services over various, converging digital platforms and giving end-users seamless access to services across different networks. Digital convergence thrusts telecom network operators, broadcasters, content providers, and internet players into one, common market, the *digital service market* where new bundles of services are provided. Providers from traditionally different sectors are suddenly competing for the same consumers. This new market creates new forms of rivalry and changes both the supply and demand side. On the supply side, some participants see new opportunities in this market; others feel compelled to enter to survive. Players that once were shielded from competition are increasingly being subject to competitive pressure by firms operating in apparently different markets. On the demand side, the total media consumption is increasing and consumer behavior is changing with new services and new terminal devices. Media consumption across services and demographics changes rapidly.

To position themselves in this new market, service providers are restructuring their operations. New owner positions are taken, but it is even more interesting that new alliances and partnerships are emerging. Recently, we have seen a tendency of horizontal integration towards so-called “media houses” in several sectors of the Norwegian media market. Newspapers, internet players and broadcasters broaden their scopes geographically and in number of services. The TV 2 Group, for instance, reorganized the whole operation in 2006 moving from a broadcaster with one single channel to a content platform provider of multi play services through multiple access channels.

We have also noted movements among the players towards taking owner positions vertically in the value chain. An example here is the establishment of NTV/RiksTV. This organization is owned by NRK, TV 2 and Telenor, companies that traditionally have played other and different roles in the media value chain. Especially, the positioning of Telenor playing many roles along the value chain has raised political debate. We have seen horizontal and vertical movements in other sectors as well. For instance in the market for fiber networks deployed by the energy companies two types of partnerships are emerging. Lyse Tele in Rogaland have taken a leading role in developing multi play services over fiber. They have formed partnerships with other energy companies in Norway to market the brand name “Altibox” in their local markets. Altibox is based on a closed business model where the platform owner controls the services to be offered on the Altibox platform. A competing

partnership is found under the brand name of “Bynett” organized by Norsk Bynettforening. The Bynett-companies provide open access for service providers to compete on their platforms. It allows the customers to freely select the individual service providers themselves.

Among the innovations carried out by the digital service market, new business models are central. In this paper, we view the business model as representing the decision space in which decisions concerning value creation and capturing logics are made with the aim of obtaining viable market performance. Central to this view is the idea that the provider of a service does not take simple decisions on price or market segmentation, but instead is assumed *to design* a business model in an attempt to maximize certain demand effects, for instance adoption of a new service. The design of this business model is like most design tasks, not a single optimization task but choices of options spanned out by the business model.

The purpose of this paper is to establish a framework of the business model that enables empirical analysis of the impact of choices of business model variables on the performance of a service in the market. Thus, the level of analysis in this paper is on the service. In the next section, an analysis of the business model concept and existing frameworks based on a literature review is presented. Based on this review, a synthesis is made and a holistic business model framework is developed. This framework consists of four dimensions spanning the decision space of business development. Each dimension, as well as the interplay between dimensions, is described with high degree of granularity. Subsequently a research model is specified focusing on the relationship between the supply and demand sides, particularly how new value networks of allied partners change the business models of digital service platforms; how these changes can be measured; and how, in turn, they affect market performance in terms of innovativeness, adoption and user behavior. Finally, we offer propositions about the interplay among the business model design dimensions and their collective impact on the performance of the firm.

## **The business model concept**

In the mid 1990s along with the use of Internet as a vehicle for ecommerce, the term “business model” started to play a significant role in business management vocabulary. The ability of Internet to disaggregate and re-bundle information content created new customer value propositions. Value chains decomposed vertically resulting in new customer relationships on the demand side, and value networks on the supply side (Methlie, 2000). However, being a hype in the Internet boom age around the 2000 millennium shift, the term “business model” only occasionally was given serious academic attention. The last decennium, however, has shown an upsurge of business model papers

in academic journals and several literature reviews of business model concepts have been done. In 2005 two different reviews were published. Osterwalder et al. (2005), using Business Source Premier database of scholarly business journal, found that the popularity of the term “business model” in titles, abstracts and full text exploded in the first years after the millennium. Zott et al. (2011) list business model papers according to journals where only journals ranked in the ISI Web of Knowledge were included. Their final list contains 78 journal papers from year 2000 and onwards of which only 19 papers were published before 2005. Horsti (2011) has also studied the use of the business model concept in publications. His study confirms the increasing interest in academics for this topic.

While the term is extensively used recently in the academic debate, there is no widely agreed-upon definition and conceptual framework of what constitute this concept. In more general terms, business models are used to describe new ways of doing business, particularly in electronic commerce (Methlie and Pedersen, 2007). According to Magretta (2002), a good business model should answer Peter Drucker’s old questions: Who is the customer? And what does the customer value? How do we make money? And what is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost? Teece’s (2010) verbal description of the business model is that it “articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value” (pp: 179). One of the first definitions of the business model was given by Timmers (1998): “The business model is an architecture for product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues” (op.cit.: p. 32). From the above verbal definitions of the business model concept, certain elements or aspects recur such as value proposition (Customer and customer value), value creation (economic logic supporting the value propositions including business actors and roles), and revenue and costs. Most authors include these three aspects in their business model definitions.

A more confined definition of the business model concept is given by Amit and Zott (2001). Based on a thorough investigation of the theoretical foundation of value creation in e-business they arrive at a definition of the business model that is confined to a structural template of how a focal firm transacts with customers, partners and vendors; that is, how it chooses to connect with factor and product markets. Their formal definition of a business model is that it “... depicts the content, structure, and governance of transactions designed to create value through the exploitation of business opportunities” (op. cit.: p 511). This definition excludes both the revenue generation and the marketing strategy from the business model and is only concerned with what the firm offer

(content) and how it organizes the value creation (structure and governance). Amit and Zott's article has a strong theoretical underpinning and is one of the first articles to appear in a leading academic strategy journal. However, their understanding of the business model concept compared to the interpretations referred to above is more a matter of definition than grounded on theory. In a more recent article, they phrase their business model definition slightly different. Business models can be characterized by their design themes, which capture the common threads that orchestrate and connect the focal firm's transactions with external parties. The design themes describe the holistic *gestalt* of a firm's business model, and they facilitate its conceptualization and measurement. (Zott & Amit, 2008).

An issue raised in current literature on business models is whether market strategy is a constituent part of the business model or not. Zott and Amit (2008) claim that a firm's business model is distinct from its product market strategy. By empirical analysis, their study underscores the complementary nature of the business model and product market strategy relationship. To support their view they refer to Christensen (2001) and to Magretta (2002). Christensen (2001), however, never defines his business model concept. Magretta (2002) makes a distinction saying that a business model shows how the pieces of a business fit together, while strategy also includes competition. However, she uses strategy and business model interchangeably without any clear distinction between the two. Osterwalder et al. (2005) finds the distinction between the two prevailing in literature because of the focus of business models on describing the elements and relationships that outline how a company creates and market value. Our analysis documented below shows, however, that most of the frameworks reviewed contain aspects of market strategy. To separate market strategy from the business model, we claim is a matter of definition of the business model concept. With Amit and Zott's (2001) definition of the business model, market strategy is by definition excluded from this concept. Their question in Zott and Amit (2008 p:6): "Which business model fits best the firm's choice of product market strategy" indicates that the two are part of the same decision space.

## **The business model components**

### **A review of key factors in the literature**

When discussing the business models it is said again and again that there exists no generally agreed upon conception of this concept. There are as many different business model frameworks proposed as there are authors! In trying to make a new attempt, we shall propose a framework that builds on the shoulders of the many proposed frameworks presented in the literature. Furthermore, we need a framework that lends itself for empirical studies.

Reviews of the literature on business model with the aim of extracting main components have been done before. Osterwalder et al. (2005) have surveyed fourteen papers with respect to published frameworks. From this survey, nine building blocks emerge in their business model ontology. All papers surveyed are published in the years 2000 to 2002. Morris et al. (2005) make a survey of nineteen papers published in the period from 1996 to 2003, fourteen of which are in the years 1999 to 2001. For each paper reviewed, specific components of the proposed business model framework are specified. Finally, a more recent summary is published by Zott et al. (2011). It includes nine papers, six of which are published in the years 2000 and 2001; the most recent in 2006.

In our review, we have included ten papers scattered along the period 2001 to 2011. Of the older papers we have looked for well cited papers and for the newer ones, more for their newness. Table 1 shows the authors, publication year, citation and summary of main findings. The number in first column is used for reference in the following text.

The Table lists the key factors used to describe the business models in ten selected articles followed by second order factors, here called explaining variables. From the Table we see that the number of key factors used to describe the business models varies from three to six. We have allocated the factors found in the table to four main groups as follows:

*Group1: Factors concerning what a firm offers in the market*

In (1<sup>1</sup>) aspects of the offering are contained in the construct *transaction content*. *Product* is used by (3, 4), *service* by (8), and *offering attributes* by (5) to characterize the offering while (6) uses the term *matching the demand and supply*. Five frameworks contain the term *value proposition* to designate the value offered to the customers (2, 7, 8, 9, 10).

*Group 2: Factors concerning who the offering is meant for and how it is delivered (market factors)*

Factors mentioned are *market segment* (2), *customers* (3), *customer segment* (4), *target group* (8), *competitive strategy factors* (5), *generic strategies* (3), *market strategies* (7, 10), and *competitors* (3).

---

<sup>1</sup> The number refers to articles listed in Table 1.

**Table 1: Review of articles focusing on business model components since 2001**

	Authors	Cited	Concept	Key factors	Explaining variables
1	Amit & Zott (2001)	1703	Design elements	<ul style="list-style-type: none"> <li>• Transaction <i>content</i></li> <li>• Trans. <i>structure</i></li> <li>• Trans. <i>governance</i></li> </ul>	<ul style="list-style-type: none"> <li>• Offers, resources and capabilities</li> <li>• Exchange parties and relationships</li> <li>• Control of flows</li> </ul>
2	Chesbrough & Rosenbloom (2002)	850	Functions	<ul style="list-style-type: none"> <li>• Value proposition</li> <li>• Market segment</li> <li>• Value chain structure</li> <li>• Cost structure and profit potential</li> <li>• Value network</li> <li>• Competitive strategy</li> </ul>	.
3	Hedmann & Kalling (2003)	233	Components	<ul style="list-style-type: none"> <li>• Offering level</li> <li>• Market level</li> <li>• Activity level</li> <li>• Resource level</li> <li>• Management processes</li> </ul>	<ul style="list-style-type: none"> <li>• Offering</li> <li>• Generic strategies</li> <li>• Customers</li> <li>• Competitors</li> <li>• Suppliers</li> <li>• Activities and organization</li> <li>• Resources</li> <li>• Scope of management</li> </ul>
4	Osterwalder, Pigneur & Tucci (2005)	414	Pillars and building blocks	<ul style="list-style-type: none"> <li>• Product</li> <li>• Customer segment</li> <li>• Infrastructure management</li> <li>• Financial aspects</li> </ul>	<ul style="list-style-type: none"> <li>• Value proposition</li> <li>• Target customers</li> <li>• Distribution channel</li> <li>• Relationship</li> <li>• Value configuration</li> <li>• Core competency</li> <li>• Partner network</li> <li>• Cost structure</li> <li>• Revenue model</li> </ul>
5	Morris, Schindehutte & Allen (2005)	328	Components	<ul style="list-style-type: none"> <li>• Offering attributes</li> <li>• Market factors (customer)</li> <li>• Internal capability factors</li> <li>• Competitive strategy factors</li> <li>• Economic factors</li> <li>• Personal/investor factors</li> </ul>	
6	Brousseau & Penard (2007)	16	Dimensions	<ul style="list-style-type: none"> <li>• Matching</li> <li>• Assembling</li> <li>• Knowledge management</li> </ul>	<ul style="list-style-type: none"> <li>• Transaction costs</li> <li>• Network extern.</li> <li>• Differentiation</li> <li>• Economies of scale</li> <li>• Incentives/diffusion</li> <li>• Access and quality</li> </ul>
7	Methlie & Pedersen (2007)	22	Dimensions	<ul style="list-style-type: none"> <li>• Service strategy</li> <li>• Governance form</li> <li>• Revenue model</li> </ul>	<ul style="list-style-type: none"> <li>• Value proposition</li> <li>• Market strategy</li> <li>• Open vs. closed</li> <li>• Content vs. transp.</li> </ul>
8	Bouwman, de Vos & Haaker (2008)	65	Domains	<ul style="list-style-type: none"> <li>• Service</li> <li>• Technology</li> <li>• Organization</li> <li>• Finance</li> </ul>	<ul style="list-style-type: none"> <li>• Value proposition</li> <li>• Target group</li> <li>• Service delivery sys.</li> <li>• Division roles</li> <li>• Network strategy</li> <li>• Revenue model</li> <li>• Costs</li> </ul>
9	Demil & Lecocq (2010)	24	Components	<ul style="list-style-type: none"> <li>• Resources and competences</li> <li>• Organizational structure</li> <li>• Value propositions</li> </ul>	<ul style="list-style-type: none"> <li>• Sources</li> <li>• Value chain activity</li> <li>• Value network</li> <li>• Trans. content</li> </ul>
10	Iden & Methlie (2011)	-	Drivers	<ul style="list-style-type: none"> <li>• Value proposition</li> <li>• Revenues</li> <li>• Market strategies</li> <li>• Value networks</li> </ul>	<ul style="list-style-type: none"> <li>• Newness, customization, task support, brand, price</li> <li>• Pricing models and objects, revenue sharing, costs</li> <li>• Segmentation, platforms, new markets, context advertising</li> <li>• Lock-in, new trans. structures, user networks, complementarities, asset sharing</li> </ul>

*Group 3: Factors concerning how the firm organizes its value creation*

Factors concerning value creation are *transaction structure and governance* (1), *value chain structure* (2), *value network* (2,10), *activities and organization* (3), *resources* (3), *infrastructure management* (value configuration, core competency, partner network) (4), *internal capability factors* (5), *governance form* (7), *organization* (resources and capabilities) (8), *organization structure* (9), and *assembling* (6).

*Group 4: Factors concerning value appropriation – revenue models*

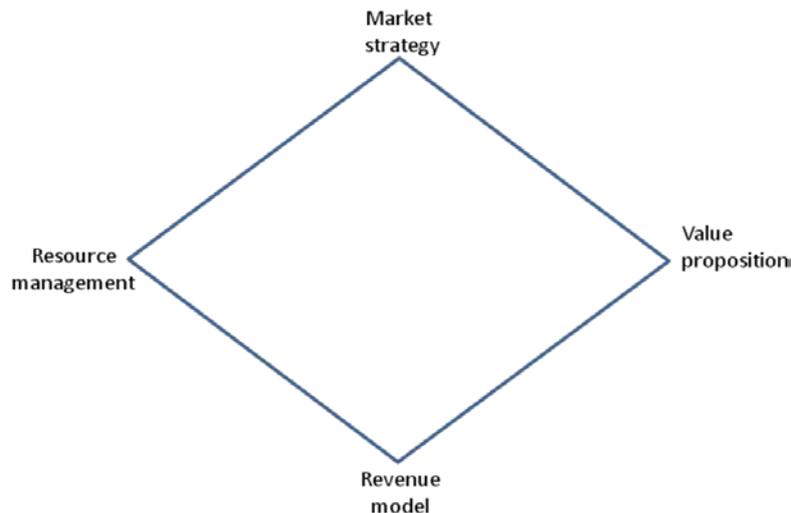
Included here are: *revenues* (7, 10), *costs structure and profit potential* (2), *financial aspects* (cost and revenues) (4), *economic factors* (5), and *finance domain* (8).

**A holistic business model framework**

These four groups cover the principal decisions with which the business model should be concerned:

1. Decide what to offer, i.e. formulate a *service value proposition* to increase customer value.
2. Decide how to offer this service, i.e. to choose a *marketing strategy* based on the value proposition's positional advantage in the market.
3. Decide how value can be created, i.e. to establish the resources and capabilities required to generate the service offering (*resource management*).
4. Decide how values can be captured and shared, i.e. formulate a *revenue model* to appropriate value for the network partners.

In accordance with Brousseau and Penard (2007) we shall denote these principal decisions as “dimensions” to indicate that the creation of a business model is to position the firm within a multi-dimensional space. The business model represents the conduct of the firm; i.e. decisions are made as to which market strategy to choose; which pricing model and prices the firm should use as their revenue model; how resources and capabilities should be made available governed; and which values to be offered to the customers for the firm to obtain performance differentials in the market. The choices along the different dimensions are interdependent; i.e. a choice in one dimension affects choices in other dimensions. For instance, the choice of being a low cost provider as the firm's market strategy affects the revenue-dimension with respect to pricing model and prices, while the choice of pursuing a differentiation strategy requires different value propositions. The four components are shown in Figure 1 below.



**Figure 1: The four dimensions of the business model**

In the choice of revenue model, costs are affected by the resources used, and price is determined by the market strategies applied. In a network service market where services are produced and consumed in networks the decision of value sharing is part of the business model. Through governance form, the responsibility among the value network partners is distributed. We shall therefore look at the business model as a system of interdependent choices.

We have defined four dimensions in our business mode framework. These four dimensions are interconnected and there are causal relationships between the different dimensions. In the further elaboration of this framework we shall start with the value proposition.

**Value proposition** corresponds to the positioning option used in marketing. Positioning is defined as a particular bundle of benefits selected by a firm and delivered to the target customer in terms of a service offering (Ghosh and John, 1999).

Amit and Zott (2001) use the term transaction content to describe the offering to the customer where the emphasis on specific characteristics depends on the business model construct chosen (Efficiency, Complementarities, Novelty, and Lock-in). For example customized services are emphasized in Lock-in; complementarities and horizontal services in Complementarities, new products in Novelty. Hedman and Kalling (2003) include customer-perceived quality/price position of the offering. Osterwalder and Pigneur (2004) defines the value proposition as an overall view of a firm's bundle of products and services that together represent a value for a specific customer segment offers its customers. The value proposition is closely associated with the offering which is characterized by properties such as reasoning (why the offering has value), life cycle phase, value

level and price level. Brousseau and Penard (2007) focus on digital goods and services which are of a modular nature. Its components can be bundled and packaged (assembled). They look at value proposition as the match between the producer and the user. They introduce the concept of two-sided markets to indicate the need for two different value propositions for the same service; one for each market. Methlie and Pedersen (2007) study mobile data services. They claim that the value proposition is service dependent and related to the specific gratifications sought by the services. They suggested two options for the value proposition: uniqueness and scope (breadth). Bouwman et al. (2008) include value proposition and target customer group in the service domain of their business model framework and claim that customer value is the most relevant aspect of the service. They propose four interrelated concepts: intended and delivered value on the part of the provider, and expected and perceived value on the part of the customer. Demil and Lecocq (2010) focus its value proposition on customer value as well as how and to whom the offer will be marketed. Finally, Iden and Methlie (2011) include the following elements in the value proposition: newness, performance, customization, task support, brand, and price.

Central to the value proposition is the concepts of customer value. Thus, the value proposition is an articulation of these values. A value proposition must be formulated for each target customer segment. Market segmentation is further dealt with as part of the market strategy below. In two-sided markets, concerted formulation of value propositions for each side must be done. Drivers to consider are: uniqueness, customization, newness, complementarities, horizontal services/bundles/packages (scope), task support, quality/price position, and life cycle phase.

**Market strategy** is an antecedent of the value proposition. Designing viable value propositions requires segmenting the market and creating one value proposition for each segment. Furthermore, market strategy is the way in which a firm chooses its position against its rivals in the service market. According to Zott and Amit (2008), the main drivers of customer demand are price, quality, and timing. A firm can leverage these drivers by making two fundamental strategic decisions: What type of product market positioning approach to adopt and when to enter.

By definition of the business model concept, Amit and Zott (2001) exclude product market strategy from the business model. Consequently, no factors related to strategy are mentioned. Although Chesbrough and Rosenbloom (2002) make a clear distinction between the business model and strategy they include both market segmentation and competitive strategy by which a firm will gain and hold advantage over rivals as elements of their business model. Osterwalder et al. (2005) include market segmentation but no positioning strategy in their business model. Hedman and Kalling (2003)

only implicitly include aspects of strategy in their description on how their business model works, but strategy is not an element of its own in their model proposal. Morris et al. (2005) clearly include competitive strategy factors such as operational excellence, low cost/efficiency, innovation leadership, and quality. The approach of Brousseau and Penard (2007) to a digital business model concept does not lend itself to general positioning strategies known from marketing and strategy. Methlie and Pedersen (2007) apply the generic strategies as proposed by Porter (1985) in their study. Targeting is a critical design issue of the service domain in Bouwman et al. (2008), but no positional strategies are included. Demil and Lecocq (2010) follow Amit and Zott's (2001) definition of the business model and thus exclude product market positioning from the business model. Iden and Methlie (2011) use the two generic strategies broad-based and focused market scopes which they develop further into such as market segmentation, distribution platforms, and new markets entering.

From the above, we can conclude that among these ten articles, only four articles include positional strategies in their business model frameworks. These articles all relate to Porter's generic strategy options. However, most of the ten articles emphasize targeting and market segmentation in relation to creating the value proposition.

**Resource management** involves setting up the value creating system in which value is produced in terms of a service offering. On the whole, the main construct used by the reviewed articles in Group 3 to build the value creating system of a business model is the *value network*. Adopting a network perspective, the focus of value creation is not on the firm or the industry, but on the network. Resources and capabilities are drawn from a network of relatively autonomous firms who operate together in a framework of common principles and service level agreements (Pepper and Rylander, 2006). A value network consists of a number of legally independent actors who collaborate in creating customer value and network value by means of a specific service offering. Exchanges of tangible and intangible resources and capabilities take place between the actors involved in the network. Value networks in a business model context are deliberately organized structures, negotiated roles and goals that can be managed in order to be efficient (Dyer, 1996; Dyer and Singh, 1998).

The value network concept has attracted the attention of strategic management and marketing researchers and become the most prevailing value creation logic in businesses characterized by network mediated services. The concept of a value chain (Porter, 1985) has been the dominant tool for value creation analysis in traditional industries for several decades. However, although successful in these industries, researchers and practitioners have questioned its appropriateness for

understanding firms with different underlying value creation logic (Fjeldstad and Ketels, 2006). Achrol (1997) and Achrol and Kotler (1999) observed a fundamental shift in the 21<sup>st</sup> century from a dyadic perspective of interorganizational exchange relationships towards a network perspective of value creation. The importance of value creation networks has continued to increase greatly during the last decade (e.g. Parolini, 1999; Pepper and Rylander, 2006; Møller and Rajala, 2007).

A key aspect of value networks is governance - how should these networks be managed. Governance typically comprises the coordination of resources and activities and control of the actors and their activities (Westerlund, 2009). Specifically, the term governance is used to refer to mechanisms that are used to safeguard, coordinate and adapt the exchange of resources (Jones et al., 1997). Organizational science literature suggests that there are three main options to governance, i.e. market, relational and hierarchical (e.g. Ghosh and John, 1999). The market form uses price mechanism, the relational form uses contract, and the hierarchy uses authority to coordinate and control transactions. These three governance mechanisms have been applied in an empirical study of business model choices for value creation of mobile services by Methlie and Pedersen (2007). However, governance is simplified to two forms in their model – open access or closed access indicating the degree of control of access by the operator's service platform. Adler (2001) proposes three governance mechanisms: hierarchy that is authority based; market which is price-based; and community which is trust based. Ritter et al. (2004) point out that the research focus in interorganizational networks is shifting from structures and governance to managing business networks and relationships. Westerlund (2011) claims that network governance traditionally has been considered a structural construct with less emphasis on managerial aspects. From a managerial perspective leadership and management should be added. Leadership includes finding partners, influencing them to participate and committing them to the network goals. Management includes coordination and control of the network.

Although the core components used in the ten articles in our review vary, the underlying text in almost all articles points to various aspects of networking when it comes to value creation. Amit and Zott (2001) use the key factors "transaction structure" and "governance" which refer to parties that participate in exchange and how these are linked and controlled (governance). They include ideas from strategic network theory that there is a link between network configuration and value creation and that the locus of value creation may be the network rather than the firm. The term "value network", however, is not an explicit term of their framework. Osterwalder et al. (2005) use the term "infrastructure management" which consists of value configuration (arrangement of activities and resources), core competency, and partner network. Morris et al. (2005) use the term "internal

capability factors” for sources of resources. Although this term signifies internal resources it does include networking/resource leveraging. Brousseau and Penard (2007) use the term “assembling” to collect service components and “assembling platforms” to provide packages building among other things on literature on economics of networks, and strategic network formation. Bouwman et al. (2008) use “organization” to denote resources and capabilities of the business model. In the design of the organization, actors, value network, and resources and capabilities are key design elements. In Demil and Lecocq (2010) “organizational structure” is used as a core component. Its building blocks include value chain of activities and value network. In Chesbrough and Rosenbloom (2002) and Iden and Methlie (2011), value network is one of the core components. The latter article includes elements such as lock-in, new transaction structure, user network, complementarities, and asset sharing in the value network concept. Hedman and Kalling (2003) is the only paper that do not include value network in their business model description. They use the concept of value chain.

Given the central notion of networking in almost all articles we shall use the term “value network” as a key construct in our business model design. The concept of value network contains two main aspects: the structure of the network and the control of transaction exchange in the network (governance). The drivers of the structure identified are the resources and capabilities required; core competency, asset sharing with network partners, and complementarities. As governance mechanisms we suggest using the trichotomy found in the marketing literature; i.e. market, relational, and hierarchy but aspects of leadership and management as found in Westerlund (2011) should be considered.

**Revenue model.** Porter has said that “in the most basic sense, a business model is the method of doing business by which a company can sustain itself – that is, generate value” (in Chesbrough and Rosenbloom, 2002). A revenue model is concerned with the financial aspects of providing services in the market and includes what methods of payment are used, what is being paid for, and thus in what way income is generated (Bouwman, et al., 2008). It includes what sources of revenue exist, pricing strategies and pricing. Revenue models also have to include revenue sharing mechanisms for partners in a value network. Costs are derived from the value creation activities as input to the revenue model.

As for market strategy, Amit and Zott (2001) explicitly exclude revenue model from their business model framework. They state that “a revenue model refers to the specific modes in which a business model enables revenue generation” (op.cit. pp: 515). Chesbrough and Rosenbloom (2002) include estimation of the cost structure and profit potential of producing the offering in their business model

framework. Osterwalder et al. (2005) include cost structure and revenue model without further details. Morris et al. (2005) list some economic factors to consider: pricing and revenue sources, operating leverage, volumes, and margins. Methlie and Pedersen (2007) include revenue valuation and sharing and distinguish between content- and transport-based revenues. A content-based revenue valuation means that end-users pay per unit of the content, and revenue share indicates that a relatively larger proportion of the revenue is redistributed to content providers. Bouwman et al. (2008) include revenues, risks, pricing and costs. Finally, Iden and Methlie (2011) focus on revenues that are driven by new pricing models, new pricing objects, revenue sharing among partners, and cost.

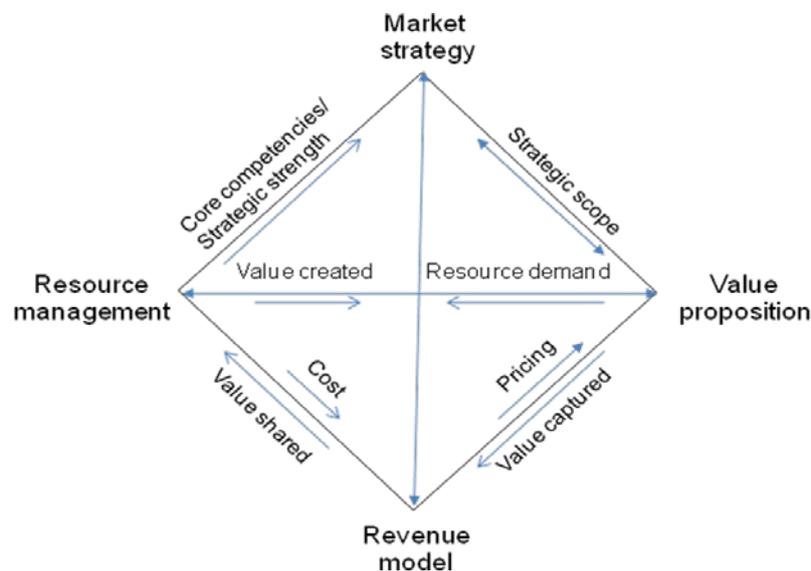
The revenue model should be concerned with revenue valuation, capturing and sharing. The drivers are customer value, pricing models, pricing objects, pricing, profit, costs, and value sharing.

### **Interactions between the dimensions of the business model**

Most of the business model frameworks presented in the literature specify the components of the business model. Very little is said about the interactions between components. Both Chesbrough and Rosenbloom (2002) and Hedman and Kalling (2003) have both outlined relationships between components. Hedman and Kalling (2003) describe causal relations between the different components. In order to offer a favorable quality/price position to a particular customer segment, an effective configuration and execution of value chain activities and organizational structure is required. This requires resources to be acquired from the factor market and from suppliers. Change can appear both in exogenous and endogenous processes. A poor offering may initiate change programmes that result in reformed activities and reconfigured resource base. It can also work the other way, new ways of combining resources can result in new offerings. Whatever the modification, it will affect other components (Hedman and Kalling, 2003). Also Chesbrough and Rosenbloom (2002) outline the interactions between components by describing the process of designing a business model. It starts with a preliminary definition of the value proposition followed by an interaction with market strategy in terms of defining market segments. Identification of the market is “required to define the “architecture of the revenues” – how a customer will pay, how much to charge and how the value will created will be apportioned between customers, the firm itself and its suppliers” (op.cit. p: 534). Once the firm has defined the value chain needed to deliver the offer, the resource management must decide how the value creation can be performed by itself or by complementary assets through a value network of partners. The value network increases the supply of complementary goods on the supply side, and can increase the network effects among customers on

the demand side. This shortened description from Chesbrough and Rosenbloom (2002) illustrates the interactions between value proposition, market strategy, and resource management. Morris et al. (2005) claim that model components must demonstrate consistency which is described in terms of internal and external fit where internal fit is concerned with a coherent configuration of key activities within the firm and external fit address the appropriateness of the components given external conditions. The latter we shall deal with below. Also Bouwman et al. (2008) show interactions between the four domain components of their model but they do not describe what these interactions are or how they work.

In our business model, as shown below, we have indicated by arrows the interactions between dimensions indicating not only a holistic, but also a systemic view of the business model.



**Figure 2: A holistic four-dimensional business model**

Since the value proposition is defined for a specific market segment, market strategy must decide on the strategic scope, i.e. how broad the market should be and define the market segments. Along with defining strategic scope, market strategies are defined, for instance cost leadership or differentiation. The choice here, will impact on the revenue model with respect to choice of pricing objects, pricing mechanisms, and prices. These choices will subsequently impact on the value proposition. The value proposition requires resources in order to produce an offering. Resource management will define a value chain and allocate activities according to resources and competencies to market, own firm, and partners of the value network. The impact backwards on the value position is the offering which may consist of a bundle of services including complementarities.

Finally value proposition will return revenues captured from the customer value delivered which in turn will be shared with network partners.

## **The business model and performance**

Research on business models has focused primarily on two complementary streams: taxonomies and frameworks (Osterwalder et al., 2005). This research is mainly descriptive and proposes normative implications directly from descriptive models (Methlie and Pedersen, 2007). It helps the decision maker to think through the problem by understanding the firm and its environment (Porter, 1991). There has been little prior empirical research on the question whether different types of business model innovations have different effects on firm value and performance (Sosna et al, 2010; Ho et al., 2011). Since business model innovations can be able to seize market opportunities, in response to the external environment and the state of the competitors, the external environment is an important contingent factor to business model design (Ho et al., 2011).

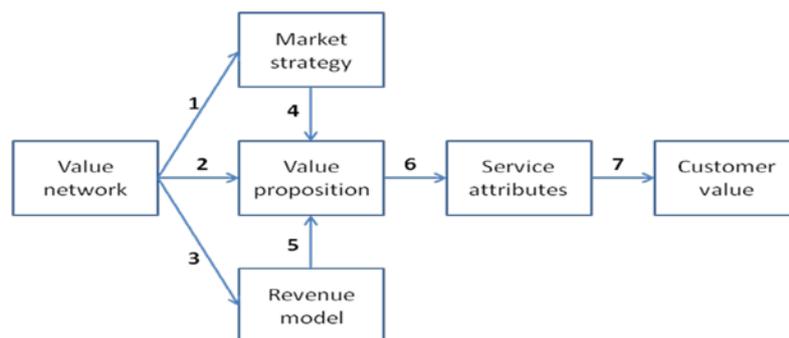
Morris et al. (2005) introduce the term “external fit” to describe the consistency between choices in the dimensions of the model and conditions in the external environment. A business model must accommodate changes in the environment to be sustainable. The ultimate goal of the business model design, however, is to maximize customer value of an offering in order to achieve competitive advantage and performance differentials in the product market. To derive at performance, Porter (1991) defines the chain of causality. He says “To explain the competitive success of firms, we need a theory of strategy which links environmental circumstances and firm behavior to market outcome, My own research would suggest a chain of causality for doing so ....” (Porter, 1991, pp 99). This chain of causality relates to the old structure – conduct – performance (SCP) paradigm in Industrial Organization (Bain, 1951). According to this paradigm, a firm’s performance depends on the choices made in the business model – its conduct, which in turn depends on basic structural factors such as supply and demand conditions. The underlying logic of this paradigm is that that the business model options and choices are bounded by the environment in which the firm operates. It is based on a view that causality flows from external conditions down to corporate decisions that seek to exploit those conditions (Kim and Mauborgne, 2009).

Another aspect of the external environment concerns the growing interest in new organizational forms that transcend traditional firm boundaries. In our business model framework developed above we include value networks as the typical organizing modus of value creation of digital services. In this paper we seek to understand the performance of a firm by analyzing how value network governance

affects the other dimensions of business model and their links to performance. Westerlund (2009) examines the role of network governance in business model performance from a managerial perspective where leadership and managerial capabilities are emphasized. In a dual study of the relationship between business model conduct and performance using theory on two-sided markets as an organizing framework, empirical data from the supply side were collected from providers while data for the demand side were collected from end-users. These two sides are usually studied independent of each other. In this study, focus is on the interdependence. The results of the supply side study are documented in Methlie and Pedersen (2007). On the demand side, performance of business model choices is studied by analyzing the relationship between service attributes and perceived customer value (Thorbjørnsen et al., 2009). Other studies of business model design and business performance can be found in Zott and Amit (2007 and 2008).

## Research model

A business model analysis allows us to take into account the systemic nature of media service innovations. It opens up for both studying entire value networks providing an overview of the market as well as in-depth studies of the relationships between the dimensions. As pointed out above, the media market is characterized by firms cooperating through alliances and partnerships in larger constellations. In enhancing our understanding of such constellations, we need to link individual firm-level strategies with network-level strategies spanning individual firms. This is a research area with scant previous research and our aim is to contribute with new knowledge in this area. Based on the four-dimensional business model, we suggest the following research model shown in Figure 4.



**Figure 4: Research model**

As our review shows, there is no coherent agreement as to how the content of each of these dimensions should be described and defined. We therefore first need to define and delimit how we conceive these dimensions, and thereafter, we will develop propositions describing how the

dimensions are related to each other. The numbers in the research model shown in Figure 4 refer to proposition groups.

### **The dimensions of the business model**

By value network, we are primarily concerned with how the value network is governed and managed. Three commonly used governance mechanisms are market governance, hierarchical governance and relational governance. Market governance refers to the use of prices and market incentives, hierarchical governance relies on administrative controls and procedures, and relational governance is performed through relational norms and personal relationships.

Market strategy refers to Porter's (1985) generic strategies with special focus on cost leadership and differentiation. A cost leadership strategy implies that services are offered at the lowest possible costs and preferably at lower costs than competitors can offer, while a differentiation strategy aims at offering services with different attributes compared to competitors in order to target special customer segments and thereby charge a price premium.

The value proposition is an articulation of the benefits delivered to the customers. We will focus on two properties: customization and scope. Customization concerns the degree to which the service can be tailored to each customer or if it is a standardized service. Scope refers to whether the service can be bundled or packaged. This is related to the possibility of combining the service or service components to other services when it is offered to customers.

The revenue model explains how value is generated and shared by the involved actors. The offered service needs to deliver valuable results to the involved actors, or in other words, the service must capture a sufficient value to make it profitable for the actors to participate. Furthermore, the generated value has to be shared between the actors in an acceptable way.

We distinguish between three types of service attributes labeled as intrinsic attributes, user network attributes and complement network attributes (Methlie & Pedersen, 2007; Thorbjørnsen, Pedersen, & Nysveen, 2009). User network attributes and complement network attributes can be framed as extrinsic attributes (Thorbjørnsen et al., 2009). Intrinsic attributes are related to how the customer experiences the service when using it. Examples include usefulness, functionality, enjoyment, etc. (e.g., Methlie & Pedersen 2007; Nysveen, Pedersen, & Thorbjørnsen, 2005; Nysveen, Pedersen, Thorbjørnsen, & Berthon, 2005; Pedersen & Nysveen 2003; Thorbjørnsen et al., 2009). Extrinsic attributes, on the other hand, are related to the network by which the service is offered or used (Thorbjørnsen et al., 2009). User network attributes refer to network qualities such as size and

strength (Thorbjørnsen et al., 2009). For example, a service has higher value for a customer if a large number of other users use the service compared to if only few users use the service. If other services or products complement a specific service, this is called complement network attributes (Thorbjørnsen et al., 2009). These attributes are thus related to how a customer can use one service in relation to other services. For example, different services can be offered on the same platform, or the combined use of different services is more valuable for the customer than using the services individually.

The final dimension is customer value defined as the customer's perceived benefits of using the service. We include this dimension since the ultimate goal of any business model is to offer services which will be adopted by customers.

### **The relationships between the dimensions of the business model**

We start by discussing how value network is related to market strategy, value proposition and revenue model. As pointed out above, value network refers to how the relationships between the actors in the network are governed. The three different governance mechanisms are likely to impact the implementation and realization of different market strategies. For example, a cost leadership strategy aims at delivering services at low costs compared to services offered by competitors. For a value network to succeed with this strategy, all involved actors need to minimize their own costs, the relationships between the actors need to be governed in a cost efficient way, and there should be low switching costs enabling easy entrances to the network and exits from the network. Market governance with its focus on prices and market incentives is likely to be the preferred governance mechanism for value networks pursuing cost leadership strategies.

Differentiation with its focus on targeting specific market segments, on the other hand, requires another kind of network governance. Dickson and Ginter (1987: 4) define product differentiation as: "A product offering is perceived by the customer to differ from its competition on any physical or nonphysical product characteristic including price". The aim of any product differentiation strategy is to realize superior profit by, for example, price premiums or reduced price sensitivity (Sharp and Dawes, 2001). Offering differentiated products requires knowledge about customer preferences, and this kind of information is often tacit or sticky (von Hippel, 1994). One way of acquiring such information is through close relationships to customers. Furthermore, the implementation of a differentiation strategy in a value network requires coherent behavior of all involved actors. The need for close relationships to customers and the need for coherent behavior of the actors in the value network can be facilitated through close interaction and coordination spanning individual firm

boundaries. Both hierarchical and relational governance are considered useful mechanisms for obtaining close interaction and coordination within a value network. This allows the following propositions:

Proposition 1a: Value networks characterized by market governance are most suitable for pursuing cost leadership strategies.

Proposition 1b: Value networks characterized by hierarchical and relational governance are most suitable for pursuing differentiation strategies.

How the relationships between the actors in the value network are governed may also impact the two properties of value proposition – customization and scope. In a similar vein as for the case of differentiation, offering customized services requires extensive knowledge about customer preferences, and moreover, this information needs to be made available for all actors in the value network. Value networks offering customized services thus need to have mechanisms for acquiring customer information and for transmitting this information throughout the value network. Studies report that strong and embedded ties between actors enable firms to exchange customized information and fine grained knowledge (e.g., Helper, 1990; Larson, 1992; Uzzi, 1996 ). Svendsen and Haugland (2011: 327) point out that “tacit or “sticky” knowledge is more readily transferred between firms if they are closely linked to each other, and close inter-firm linkages can be attained by relational norms”. Relational governance should thus be the preferred governance mechanism for value networks offering customized services.

Service scope concerns bundling or packaging of services and is related to whether a service or components of a service can be combined with other services. Service bundling can be organized in different ways, for example, by offering the customers a complete package of services, or delivering services or service components on a common platform enabling the customers to make the final bundling choices. Value networks offering services with a broad scope must therefore emphasize and facilitate this bundling process. Bundling requires flexibility in order to combine services in different ways, and simple and reliable routines and procedures for handling continuous bundling and re-bundling. Market governance relying on prices and incentives are considered suitable for handling flexibility by making it easy to combine different services, and hierarchical governance provides routines and procedures for managing bundling and re-bundling. We thus propose:

Proposition 2a: Value networks characterized by relational governance are most suitable for offering customized services.

Proposition 2b: Value networks characterized by market governance and hierarchical governance are most suitable for offering services with a broad scope.

The revenue model describes how value is captured and shared by the network actors. Value capturing can be described as an innovative process aiming at identifying the underlying mechanisms through which the offered services deliver valuable results to the network actors. Identifying the sources of revenue and developing pricing strategies are here core activities. This requires close interaction and openness between the network actors in order to find the best solutions for the entire network. The network actors cannot only be concerned with their own individual objectives, but they need to pay attention to all actors, as the aim is to capture value for the entire network. Relational governance by means of relational norms and personal relationships fostering a high level of trust in the network is likely to be the most suitable governance mechanism for realizing the potential value of a service.

Value sharing, on the other hand, describes how the captured value should be shared between the network actors. This is primarily a question of establishing principles and procedures for a fair sharing of value over time. If the network actors can agree on a set of principles and procedures, they can both determine the attractiveness of participating in offering the service and get an understanding of the expected benefits. Market governance in combination with hierarchical governance can be useful for such purposes. By using prices and incentives, market conditions can serve as an external benchmark to secure that all actors are competitive, and by using administrative controls and procedures, the actors can agree on a system taking care of value sharing. We suggest the following propositions:

Proposition 3a: Value networks characterized by relational governance are most suitable for value capturing.

Proposition 3b: Value networks characterized by market governance and hierarchical governance are most suitable for value sharing.

The choice of market strategy will have a great impact on the value proposition. The choice of cost leadership versus differentiation reflects the target customer groups to be served. Cost leadership aims at delivering services attracting a wide spectrum of customers because the services are cheaper than those offered by competitors. Such a strategy cannot to any extent take into account specific customer needs or be concerned with bundling or packaging as such activities will incur costs. These additional costs may in turn threaten the market position as the service now will become less

attractive to a wide spectrum of customers. Any move in the directions of offering customized services and services with a broad scope will necessarily imply some degree of differentiation and thereby imposing a need to select specific target customer groups. Cost leadership is thus only a feasible strategy for standardized services, while differentiation is necessary for both achieving customization and scope. We propose:

Proposition 4a: Cost leadership is most suitable for delivering standardized services.

Proposition 4b: Differentiation strategy is most suitable for delivering customized services and services with a broad scope.

The revenue model is concerned with how value is captured and shared between the network actors. It is evident that any revenue model needs to incorporate both dimensions. However, the two dimensions may impact the two types of value propositions differently. As customization seeks to identify the needs of specific customers and offer services which can be tailored to these needs, the value capturing dimension of the revenue model is important, as the focus should be on how customization can create value for the actors involved in offering the service. Offering a service with a broad scope, on the other hand, requires that the service can be related to other services through bundling or packaging. This requires that all network actors have incentives for participating in bundling or packaging activities. These incentives can be expressed through the principles for value sharing outlined in the revenue model. The following propositions are proposed:

Proposition 5a: A revenue model with focus on value capturing is most suitable for delivering customized services.

Proposition 5b: A revenue model with focus on value sharing is most suitable for delivering services with a broad scope.

The relationship between value propositions and service attributes expresses how the articulation of customer benefits is transformed into specific service attributes. As customization reflects to what extent the service can be tailored to the specific needs of individual customers, we should expect that as degree of customization increases, customer experiences in terms of usefulness, functionality and enjoyment will also increase. Furthermore, customization may also impact the service adoption rate as we should expect that users will more easily adopt a customized service compared to a standardized service. Customization can in this way indirectly increase the size of the network using the service. Customization is thus primarily related to intrinsic attributes and user network attributes. Scope, on the other hand, reflecting the bundling or packaging properties of services addresses

primarily complement network attributes. A key characteristic of a service which can easily be bundled or packaged is that the service is more valuable if it is combined with other services compared to an individual use of the service. A value proposition emphasizing scope is thus primarily concerned with offering a service with complement network attributes. This allows the following propositions:

Proposition 6a: Customized services are most suitable for delivering services with focus on intrinsic attributes and user network attributes.

Proposition 6b: Services with a broad scope are most suitable for delivering services with focus on complement network attributes.

The final linkage in the model concerns the relationship between service attributes and customer value. Services will generally vary to a large extent on how they score on the three service attributes. Some services will only be concerned with the intrinsic attributes, while other services may be more concerned with user network attributes or complement network attributes. However, a customer will not consider a service to be valuable if it does not have any intrinsic attributes at all, as there is no reason why the customer should adopt the service. The intrinsic attributes therefore define the baseline or a minimum level of customer value which is required for service adoption. Additional customer value can thereafter be added through user network attributes and complement network attributes. How individual customers evaluate all service attributes together may differ from one customer to another, and there may be tradeoffs between adding more intrinsic attributes compared to adding user network attributes or complement network attributes. We thus suggest:

Proposition 7: Intrinsic service attributes provide the baseline customer value, and additional customer value can be delivered through adding user network attributes and complement network attributes.

## **Discussion and conclusions**

“All businesses, either explicitly or implicitly employ a particular business model” (Teece, 2010 p. 191). The term “business model” has become part of the general business vocabulary. As such the meaning of it blurs. But in academia, why is it so difficult to agree on what a business model is? One explanation can be, as Morris et al. (2005) state that various business model definitions focus at different managerial levels. On the operational level, the model represents an architectural configuration. The focus is on infrastructure enabling the firm to create and capture value. On the other hand, definitions at the strategic level emphasize the firm’s market positioning, competitive

advantage and market strategies in addition to value creation and capturing logics. Depending on the chosen perspective one arrives at different definitions.

We have built a new framework by analyzing a selected number of published articles. This has been done before as referred above. So, why still another, new framework? We have two reasons for doing this analysis again. One reason is the publication dates of the articles in the previous reviews. These reviews include articles primarily published in the Internet boom period, that is, around the millennium shift. Even the most recent review (Zott et al., 2011) includes a majority of papers published in the beginning of this century. Given the upsurge of recent publications in academic journals, we want to include a more even spread along the last decade. The second reason is that our aim is to define a framework that lends itself for empirical analysis of the impacts of business model choices on firm performance. We offer a high degree of granularity in describing the business model variables (see Table 1).

A content analysis of the key factors and explaining variables of the frameworks in the ten selected papers led us to identify four main groups: 1) factors concerning the offering and the customer value; 2) factors concerning how the market is approached; 3) factors concerning the resources and capabilities required to create this value and how this value creation is organized; and finally 4) factors concerning how firm value is captured and shared. All ten frameworks reviewed cover 1) and 3) focusing on network-based value creation. Eight frameworks include aspects of market strategies (2), and six frameworks cover revenue aspects (4). One problem of choosing articles scattered along the first decade of this millennium is that they may not be independent of each other. The most cited paper and one of the oldest in the selection is Amit and Zott (2001). Thus, it is likely that this framework has influence on later developments. However, their framework or definition of the business model concept is the most restricted focusing entirely on organizing the value creation process with emphasis on boundary-spanning transactions with suppliers, partners and customers. Their definition excludes market strategy aspects as well as revenues. Still, we find all the others covering aspects of market strategies and most of the others including revenue factors.

In this paper, we base our conception of a business model as a decision space spanned by four dimensions representing decision variables about what value to provide to customers, how to provide resources and capabilities for creating this value, how to approach the market, and how to capture and share value. We look at a business model instance as a choice of options in each of the dimensions. This choice of options is a design task and not a simple optimization task.

Having first defined the decision space, the dimensions are described in detail with references to both the reviewed articles and general literature on the topics. The aim is to approach measurable variables that lend themselves for empirical testing. A significant step further towards a research model is to analyze the interactions between the four dimensions of our business model. With a few exceptions most frameworks presented in the literature focus on specifying the content of the dimensions. By specifying these interactions we arrive at a holistic four-dimensional business model. The next step is then to relate this model to performance. The business model is linked to performance through the offering or service attributes. Here, we apply the approach described in Methlie and Pedersen (2007). Service attributes of network services emerge from two sources. Intrinsic attributes refer to inherent attributes of the service itself while extrinsic attributes emerge from networks that provide and use network services, either direct network effects driven by the number of users on the network or indirect network effects driven by complementary services offered on the network.

We have in this way described the complex interplay between the dimensions and pointed out that a decision made in relation to one dimension impact several other dimensions. We have by developing a set of propositions detailed this complex interplay and proposed how the dimensions influence each other. The framing of the propositions can in this way be considered as somewhat either or, while in practical situations, it is rather a question of finding a suitable balance between the dimensions. Nevertheless, the framing of the propositions highlights some important consequences of making certain decisions in relation to one dimension, and the consequences of this decision on other dimensions. Our objective has been to visualize these considerations and thereby illustrate that as network actors develop business models, there is a need for coherence between the dimensions in order to realize specific objectives.

## References

- Amit, R., Zott, C. 2001. Value creation in e-business. *Strategic Management Journal*, **22**: 493-520.
- Bain, J. 1951. Relation on profit rate to concentration: American manufacturing, 1936-1940. *Quarterly Journal of Economics*, **65**: 293-324.
- Bouwman, H., de Vos, H., Haaker, T. 2008. *Mobile service innovation and business models*. Springer Verlag, Berlin/Heidelberg.
- Brousseau, E., Penard, T. 2007. The economics of digital business models: A framework for analyzing the economics of platforms. *Review of Network Economics*, **6**(2): 81-114.
- Chesbrough, H., Rosenbloom, R. 2002. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, **11**(3): 529-555.
- Demil, B., Lecocq, X. 2010. Business model evolution: In search of dynamic consistency. *Long Range Planning*, **43**: 227-246
- Dickson, P. R., Ginter, J. L. 1987. Market segmentation, product differentiation, and marketing strategy. *Journal of Marketing*, **51**(April): 1-10.
- Ghosh, M., John, G. 1999. Governance value analysis and marketing strategy. *Journal of Marketing*, **63**(special issue): 131-145.
- Hedman, J., Kalling, T. 2003. The business model concept: theoretical underpinnings and empirical illustrations. *European Journal of Information Systems*, **12**: 49-59.
- Helper, S. 1990. Comparative supplier relations in the U.S. and Japanese auto industries: An exit/voice approach. *Business and Economic History*, **19**: 2-9.
- Ho, Y., Fang, H., Hsieh, M. 2011. The relationship between business-model innovation and firm value: A dynamic perspective. *World Academy of Science, Engineering and Technology*, **77**: 656-664
- Horsti, A. 2007. Essays on electronic business models and their evaluation. PhD Thesis, Helsinki School of Economics.
- Iden, J., Methlie, L. 2012. The Drivers of services on next-generation networks. *Telematics and Informatics*, **29**(29): 137-155.
- Kim, W., Mauborgne, R. 2009. How strategy shapes structure. *Harvard Business Review*, September: 73-80
- Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange relations. *Administrative Science Quarterly*, **37**: 76-104.
- Magretta, J. 2002. Why business models matter? *Harvard Business Review*, May: 86-92.

- Methlie, L., Pedersen, P.E. 2007. Business model choices for value creation of mobile services. *Info*, **9(5)**:70-85.
- Methlie L. 2000. A business model for electronic commerce. *Teletronikk*, **96(2)**: 8-19.
- Morris, M. Schindehutte, M., Allen, J. 2005. The entrepreneur's business model: Toward a unified perspective. *Journal of Business Research*, **58**: 726-735.
- Nysveen, H., Pedersen, P.E., Thorbjørnsen, H. 2005. Intention to use mobile services: antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science*, **33(3)**: 1-17.
- Nysveen, H., Pedersen, P.E., Thorbjørnsen, H., Berthon, P. 2005. Mobilizing the brand: The effect of mobile services on brand relationships and main channel use. *Journal of Service Research*, **7(3)**: 257-276.
- Osterwalder, A., Pigneur, Y., Tucci, C. 2005. Clarifying business models: Origin, present, and future of the concept. *Communication of the Association for Information Systems*, **15**(May): 2-40.
- Pedersen, P.E., Nysveen, H. (2003). Usefulness and self-expressiveness extending TAM to explain the adoption of a mobile packing service. Paper presented at the 16<sup>th</sup> Electronic Commerce Conference, Bled, June 9-11.
- Porter, M. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. The Free Press, New York.
- Porter, M. 1991. Towards a dynamic theory of strategy. *Strategic Management Journal*, **12**: 95-117
- Ritter, T., Wilkinson, I.F., Johnston, W.J. 2004. Managing in complex business networks. *Industrial Marketing Management*, **33**: 175-183.
- Sharp, B., Dawes, J. 2001. What is differentiation and how does it work? *Journal of Marketing Management*, **17**: 739-759.
- Sosna, M., Trevinyo-Rodriguez, R., Velamuri, S. 2010. Business model innovations through trial and error learning: The naturehouse case. *Long Range Planning*, **43(2-3)**: 383-407.
- Svendsen, M. F., Haugland, S. A. 2011. Host country institutional pressures and cross-border relationship governance. *International Business Review*, **20**: 324-337.
- Thorbjørnsen, H., Pedersen, P., Nysveen, H. 2009. Categorizing networked services. The role of intrinsic-, user network-, and complement network attributes. *European Journal of Marketing*, **43(3/4)**: 371-397.
- Timmers, P. 1998. Business models for electronic markets. *Journal on Electronic Markets*, **8(2)**: 3-8.
- Uzzi, B. 1996. The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, **61**(August): 674-698.
- von Hippel, E. 1994. Sticky information and the locus of problem solving: Implications for innovations. *Management Science*, **40**: 429-439.

Westerlund, M. 2009. The role of network governance in business model performance. Electronic working paper ISSN 1235-5674, ISBN 978-952-488-361-0, Helsinki, Finland.

Zott, C., Amit, R. 2007. Business model design and the performance of entrepreneurial firms. *Organization Science*, **18**(2): 181-199.

Zott, C., Amit, R. 2008. The fit between product market strategy and business model: Implications for firm performance. *Strategic Management Journal*, **29**:1-26.

Zott, Amit, R., Massa, L. 2011. The business model: Recent developments and future research. *Journal of Management*, **37**(4): 1019-1042.

**PUBLICATIONS WITHIN SNF'S TELE AND MEDIA ECONOMICS PROGRAM**

**2008-**

- Leif B. Methlie  
Sven A. Haugland  
*An analysis of the interplay among the dimensions of the business model and their effects on performance*  
SNF Working Paper No 35/11
- Hans Jarle Kind  
Guttorm Schjelderup  
Frank Stähler  
*Newspaper differentiation and investments in journalism: The role of tax policy*  
SNF Working Paper No 32/11
- Stig Tenold  
*The Bergen wave and the media, 1990-2008*  
SNF Working Paper No 29/11
- Ruth Rørvik  
*Hvordan finansiere journalistikk? – Jakten på bærekraftige forretningsmodeller i en digital mediehverdag*  
SNF Working Paper No 28/11
- Jesper Hatletveit  
Ole-Jakob S. Lillestøl  
*Mergers in two-sided media markets: Pricing and welfare implications*  
SNF Working Paper No 24/11
- Marius Hagen  
Øyvind Nøstdal  
*Drivkreftene bak opplagsutviklingen til en landsdekkende norsk tabloidavis. En økonometrisk tidsserieanalyse av Verdens Gang fra 1978 til 2009*  
SNF Working Paper No 23/11
- Hans Jarle Kind  
Jarle Møen  
*Indirekte pressestøtte: Momsfritak vs skattefradrag*  
SNF Working Paper No 21/11
- Armando J. Garcia Pires  
*Advertising, news customization and media pluralism*  
SNF Working Paper No 54/10
- Armando J. Garcia Pires  
*Media plurality, news customization and the intensity of readers' political preferences*  
SNF Working Paper No 53/10
- Jarle Møen  
*Samfunnsøkonomiske perspektiver på pressestøtten*  
SNF Working Paper No 49/10
- Ida Rødseth Kjosås  
Henrik Hylland Uhlving  
*Konjunkturutvikling og annonseinntekter i redaksjonelle medier*  
SNF Working Paper No 44/10
- Øystein Foros  
Hans Jarle Kind  
Guttorm Schjelderup  
*Do advertisers or viewers decide TV channels' programming choice?*  
SNF Working Paper No 43/10

- Kenneth Fjell  
Øystein Foros  
Frode Steen  
*The economics of social networks: The winner takes it all?*  
SNF Working Paper No 42/10
- Stine Grønnerud Huseklepp  
Ole-Jon Norgård Lund  
*WiMP – Styling av verdinnettverk og digitale forretningsmodeller – en casestudie*
- Ådne Cappelen  
Erik Fjærli  
Frank Foyen  
Torbjørn Hægeland  
Jarle Møen  
Arvid Raknerud  
Marina Rybalka  
*Evaluation of the Norwegian R&D tax credit scheme*  
SNF Working Paper No 36/10
- Tor Jakob Klette  
Jarle Møen  
*R&D investment responses to R&D subsidies: A theoretical analysis and a microeconomic study*  
SNF Working Paper No 33/10
- Ørjan Robstad  
Øyvind Hagen  
*Optimal merverdibeskatning av mediemarkeder: En tosidig analyse*  
SNF Working Paper No 32/10
- Håkon Eika  
Linda Solheimsnes  
*Velferdsimplikasjoner av restrukturering i TV-markedet*  
SNF Working Paper No 22/10
- Simon P. Anderson  
Øystein Foros  
Hans Jarle Kind  
*Hotelling competition with multi-purchasing: Time Magazine, Newsweek, or both?*  
SNF Working Paper No 21/10
- Hans Jarle Kind  
Tore Nilssen  
Lars Sjørgard  
*Price coordination in two-sided markets: Competition in the TV industry*  
SNF Working Paper No 20/10
- Leif B. Methlie  
Jon Iden  
*The drivers of services on next generation networks*  
SNF Report No 09/10
- Per E. Pedersen  
Herbjørn Nysveen  
*An empirical study of variety and bundling effects on choice and Satisfaction: New telecommunication and media services*  
SNF Report No 03/10
- Kenneth Fjell  
Øystein Foros  
Dabashis Dal  
*Endogenous Average Cost Based Access Pricing*  
Review of Industrial Organization  
(2010) 36: 149-162
- Armando J. Garcia  
Pires  
*Media Bias, News Customization and Competition*  
SNF Working Paper No 14/10
- Armando J. Garcia  
Pires  
*Media Bias and News Customization*  
SNF Working Paper No 13/10

- Øystein Foros  
Hans Jarle Kind  
Greg Shaffer  
*Mergers and partial ownership*  
SNF Working Paper No 12/10
- Johann Roppen  
*Markedsfinansiering og privatisering av allmennkringkasting*  
SNF Working Paper No 11/10
- Peder Dalbæk Bruknapp  
Anne Marthe Harstad  
*Det norske TV-markedet – Hvorfor tilbyr distributørene kanalpakker, og vil sluttbrukerpris påvirkes av distributørenes kostnadsendringer ved overgang til enkeltkanalvalg?*  
SNF Working Paper No 42/09
- Kenneth Fjell  
*Online advertising: Pay-per-view versus pay-per-click with market power*  
SNF Working Paper No 32/09
- Jonas Andersson  
Jarle Møen  
*A simple improvement of the IV estimator for the classical errors-in-variables problem*  
SNF Working Paper No 29/09
- Øystein Foros  
Hans Jarle Kind  
Merete Fiskvik Berg  
Marit Bjugstad  
*Entry may increase network providers' profit*  
Telecommunications Policy 33 (2009) 486-494  
*Gjeldsfinansiering av immateriell investeringer*  
SNF Working Paper No 26/09
- Hans Jarle Kind  
Marko Koethenbueger  
Guttorm Schjelderup  
*Tax responses in platform industries*  
SNF Working Paper No 24/09  
Oxford Economic Papers 62 (2010): 764-783
- Øystein Foros  
Hans Jarle Kind  
Jan Yngve Sand  
*Slotting Allowances and Manufacturers' Retail Sales Effort*  
Southern Economic Journal, Vol. 76(1) 266-282
- Jon Iden  
Leif B. Methlie  
*Identifying and ranking next generation network services*  
SNF Report No 12/09
- Kjetil Andersson  
Bjørn Hansen  
*Network competition: Empirical evidence on mobile termination rates and profitability*  
SNF Working Paper No 09/09
- Martine Ryland  
*Hvordan påvirker termineringsavgifter små mobiloperatører som One Call?*  
SNF Working Paper No 08/09
- Terje Ambjørnsen  
Øystein Foros  
Ole-Chr. B. Wasenden  
*Customer Ignorance, price cap regulation and rent-seeking in mobile roaming*  
SNF Working Paper No 05/09

- Hans Jarle Kind  
Frank Stähler  
*Market shares in two-sided media industries*  
SNF Working Paper No 04/09  
Journal of Institutional and Theoretical Economics  
166 (2010) 205-211
- Hans Jarle Kind  
Marko Koethenbuerger  
Guttorm Schjelderup  
*Should utility-reducing media advertising be taxed?*  
SNF Working Paper No 03/09
- Morten Danielsen  
Magnus Frøysok  
*Muligheter og utfordringer i fremtidens rubrikkmarked på Internett*  
SNF Working Paper No 02/09
- Johanne R. Lerbrekke  
*Markedssvikt i TV-markedet og behovet for offentlige kanaler - sett i lys av digitaliseringen av bakkenettet*  
SNF Working Paper No 01/09
- Tore Nilssen  
*The Television Industry as a market of attention*  
SNF Arbeidsnotat 39/08  
Nordicom Review 31 (2010) 1, 115-123
- Per E. Pedersen  
Herbjørn Nysveen  
*The effects of variety and bundling on choice and satisfaction: Applications to new telecommunication and media services*  
SNF Working Paper No 33/08
- Øystein Foros  
Bjørn Hansen  
*The interplay between competition and co-operation: Market players' incentives to create seamless networks*  
SNF Working Paper No 22/08
- Per E. Pedersen  
Leif B. Methlie  
Herbjørn Nysveen  
*An exploratory study of business model design and customer value in heterogeneous network services*  
SNF Report No 09/08, Bergen
- Hans Jarle Kind  
Tore Nilssen  
Lars Sørgard  
*Business models for media firms: Does competition matter for how they raise revenue?*  
SNF Working Paper No 21/08, Bergen  
Marketing Science, Vol. 28, No. 6,  
November-December 2009, 1112-1128
- Helge Godø  
Anders Henten  
*Structural conditions for business model design in new information and communication services – A case study of multi-play and MVoIP in Denmark and Norway*  
SNF Working Paper No 16/08, Bergen
- Hans Jarle Kind  
Marko Koethenbuerger  
Guttorm Schjelderup  
*On revenue and welfare dominance of ad valorem taxes in two-sided markets*  
SNF Working Paper No 08/08, Bergen  
Economics Letters, Vol. 104 (2009) 86-88

Øystein Foros  
Kåre P. Hagen  
Hans Jarle Kind

*Price-dependent profit-shifting as a channel coordination device*  
SNF Working Paper No 05/08, Bergen  
Management Science, Vol. 8, August 2009, 1280-1291

Hans Jarle Kind  
Marko Koethenbueger  
Guttorm Schjelderup

*Efficiency enhancing taxation in two-sided markets*  
SNF Working Paper No 01/08, Bergen  
Journal of Public Economics 92(2008) 1531-1539