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Examining the Interplay between Business Model and Commercialization Process Transformation

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Abstract

The challenge of connecting an innovation with a market has been addressed in two, separate discussions on business models and commercialization. Business models and commercialization processes can be seen as dynamic practices that coexist and transform, when a firm is bringing an innovation to a market. However, their relationship has received little attention and particularly, mechanisms behind such transformation are not thoroughly understood, and therefore this study addresses that gap. What kind of evidence (if any) the extant research holds about the existence of their interplay, and how that interplay occurs? The study draws on the current understanding of how business models change or are changed and how evolution or evolution of the commercialization process occurs. The overlapping and the differing conceptualizations of the concepts help to conclude, how the transformation of the business model is linked to the transformation of the commercialization process. The study suggests that by understanding the interplay in question, a business model can better serve as a dynamic managerial device for commercialization. Business model can be put to work by using it as a frame for action when commercializing.

Keywords

Business model transformation, commercialization process, interplay, practice, innovation

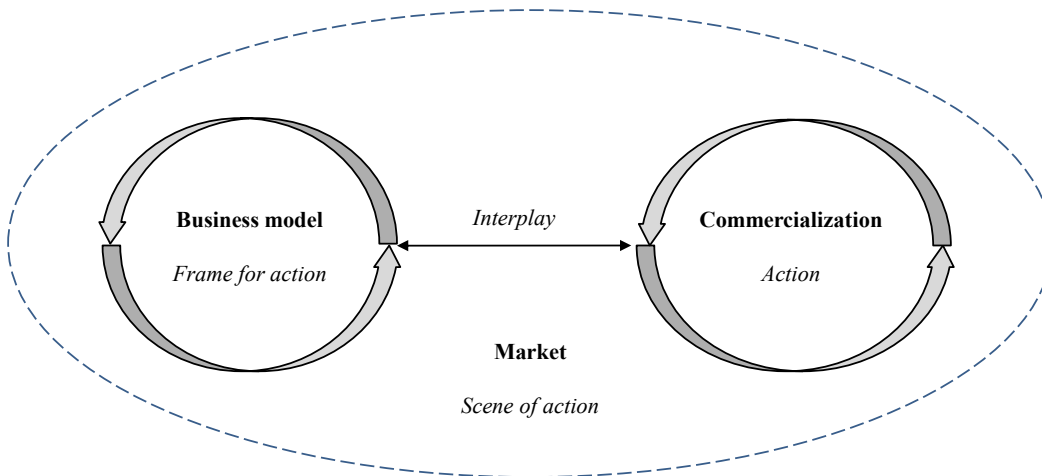
Introduction

While developing new innovations, companies often face challenges of taking those innovations to market and turning them into profit. Developing business models for and commercializing such innovations have been suggested as ways to address these challenges, both in research and practice. However, their relationship has received little attention despite their co-existence in the process of market creation or in the innovation process.

Business models can be seen as *frames for action* (Mason & Spring 2011; Mason & Palo 2012) in connecting an innovation with a market. Business model research has identified the need to develop business models to bring innovations to market (Teece 2010). However, it is challenging, and business models are often blamed for failures in innovation commercialization (Morris *et al.* 2005). How, then, can companies find the 'suitable' frame for a certain innovation and market? Business models are developed and transform through experimenting with the market (Chesbrough 2010) and through interaction with market actors (Storbacka & Nenonen 2011). However, the mechanisms behind business model transformation, innovation and change are not thoroughly understood and more research is needed on them (e.g. George & Bock 2011). That is where this study aims to contribute.

If business model is the frame, commercialization is the *action* aiming to bring an innovation into a profit making position (Jolly 1997). Commercialization research often describes business model development merely as an early task in the commercialization process (Jolly 1997). Nonetheless, the path from an idea to a profitable business is a long probing process (Woodside & Biemans 2005), and the business model and the commercialization plans transform along the way (Leifer *et al.* 2000). That transformation can happen, as learning about the market occurs (Lynn *et al.* 1996), or substantial changes emerge in the firm's business environment (Doz & Kosonen 2010).

Hence, business models and commercialization processes can be seen as dynamic practices that coexist, when a firm is bringing a new innovation to a market. In addition, the previous research indicates that the transforming nature of the business model and of the commercialization process originates from interaction with the market, which makes the market the *scene of action*. Based on the business model and commercialization notions above, a priori model describing the research setting where this study starts from is illustrated (Picture 1).



Picture 1: A priori model for the interplay between business model and commercialization process transformation

Based on the discussion above, it could be claimed that the business model and commercialization approaches may have some interacting and even overlapping areas, which could explain the transformation of business models and commercialization process. Therefore, the purpose of this study is to understand the mechanisms behind business model transformation by examining the interplay between business model and commercialization process transformation. That aim is addressed through two research questions. *What kind of evidence (if any) the extant research holds about the existence of such interplay? How that interplay occurs?*

The study draws on the current understanding of how business models change or are changed, and how evolution or evolution of the commercialization process occurs. As a result the linkages between these issues are revealed and ideas for further studies are proposed. The study suggests that by understanding the interplay in question, a business model can better serve as a dynamic managerial device for commercialization. The lessons learned during commercialization can be actively used for business model transformation, and business model transformations can be experimented in the commercialization process.

Method

This study is based on an integrative literature review, where key references are selected from the management, entrepreneurship, marketing, engineering, and innovation studies, where the issues close to the phenomenon of interest are discussed. Through an integrative literature review it is possible to review and synthesize representative literature on a particular topic and create new frameworks and perspectives as (Torraco 2005), as is intended here. For the search for business model articles, key terms were combinations of business model or commercialization process development, and specified with concepts such as change or transformation, process, and acting/action. In order to capture the dynamic side of these concepts, existence of terms such as adjusting, design, discovering, implementation, evolution, evolution, probing, learning, and experimenting were paid attention to. As both commercialization and business models are often discussed with innovations and strategy, those terms were also noted.

Before data collection, also the sources of potentially relevant studies need to be defined (Cooper 1982). Due to the cross-disciplinary nature of the phenomenon, databases including a variety of disciplines such as EBSCOhost and Scopus were utilized instead of the selection of sources based on journal elimination. Based on authors' expertise, one author focused on doing searches among business model research, and one among commercialization research, and one among both. All authors worked on integrating the findings.

Theoretical perspective

The theoretical part first discusses definitions for business models and commercialization, and then discusses their transformation, compares their overlappings and similarities, with an aim to understand their possible interplay.

Defining business models and commercialization

The business model literature is fragmented and draws on ideas from a range of disciplines, resulting in diverse conceptualizations. Accordingly, the role of business model in the firm is often debated (Osterwalder *et al.* 2005). Two extremes of the business model conceptualizations can be claimed to be as static and internal, as opposed to dynamic and external, from which we emphasize the latter. These are shortly discussed below.

After the dot com boom, interest on business models grew dramatically both among scholars and practitioners. Business models were conceptualized as rather static being internal to the company, describing how the company does business at a single point in time. Hence, at the most basic level, a business model is seen as the firm's economic model which describes the logic of profit generation (Morris *et al.* 2005), or business model can be simply regarded as "*the architecture of the revenue*" (Chesbrough & Rosenbloom 2002). A common way of conceptualizing business models has been to classify the concept into smaller elements or components, providing simplified descriptions of companies (e.g. Osterwalder *et al.* 2005; Shafer *et al.* 2005). Such definitions share a common view of the business model; a description of reality beyond the firm (Doganova & Eyquem-Renault 2009).

More recent developments conceptualize business models based on what they can do, instead of what they are, revealing their dynamic side. Related to this, scholars are aiming to understand the *work and practice* of business models (Doganova & Eyquem-Renault 2009; Mason & Spring 2011; Mason & Palo 2012). Business models have been acknowledged as devices to explore the market (Doganova & Eyquem-Renault 2009), to shape and coordinate action (Mason & Spring 2011), and to address change and focus on innovation (Demil & Lecocq 2010). This way, business models are prospective, demonstrating a future venture and its value creation logic, feasibility and worth to the needed partners (Doganova & Eyquem-Renault 2009). Furthermore, business models need to be implemented and transformed into more concrete elements such as business structure and processes (Osterwalder *et al.* 2005), and in the end, into business practices (Doganova & Eyquem-Renault 2009). Business models have been suggested to act as narratives (Magretta 2002), mental models (Storbacka & Nenonen 2011), and collective cognitive representations (Doz & Kosonen 2010).

Tikkanen *et al.* (2005) define business models to consist of both material aspects (strategy and structure, network, operations, finance and accounting) and cognitive components (reputational rankings, industry receipts, boundary beliefs, and product ontologies).

Casadesus-Masanell and Ricart (2010) suggest that a business model reflects the company's realized strategy. This way, the object of strategy is the choice of a business model, and the chosen business model determines the tactics available to the firm. Hence, business models function at different levels in the company: at the operational level, business model describes the architecture of internal processes and design of infrastructure that enable the firm to create value, whereas at the strategic level, business model emphasizes the overall direction in the firm's market positioning, interactions, and growth possibilities (Morris *et al.* 2005). Similarly, Osterwalder *et al.* (2005) describe the business model's place in the company as a blueprint of how the company does business, translating strategic issues into a conceptual model stating how business functions. However, more external views of business models have been put forward as well. Business models have a boundary-spanning nature (e.g. Doganova & Eyquem-Renault 2009) and demonstrate how an organization is linked to external stakeholders (Zott & Amit 2007).

The functions of a business model are to articulate the value proposition, identify the market segment, define the structure of the value chain, estimate the cost structure and profit potential, describe the position of the firm within the value network and formulate the competitive strategy (Chesbrough & Rosenbloom 2002). Similarly, Teece (2010) determines the decisions in the business model design as the selection of technologies and features to be embedded in the offering, determination of the benefits to the customer of the offering, identification of market segments, confirmation of available revenue streams, and design of mechanisms to capture value. Amit and Zott (2001) state the business model represents the design of the content, structure and governance of transactions to create value by exploiting business opportunities. This way, business models can be used in different ways in commercializing innovations.

Chesbrough (2010: 354) states that "*the economic value of a technology remains latent until it is commercialized in some way via a business model*", suggesting that "*companies commercialize new ideas and technologies through their business models*". Hence, business models and commercialization are essentially linked concepts, and business model can be seen as a commercialization device for new ideas and technologies. Innovation cannot rely only on technology or R&D, but it must consider business model, as well (Chesbrough 2007). Before moving on analyzing the possible interplay between commercialization and business model transformation, we take a look into what commercialization is. Commercialization, like business model, is a concept that has been used in many domains and several ways. Depending on the view, commercialization can concern anything from commercializing research results to commercializing new product features. At least four views on commercialization can be identified.

First, commercialization is used as a concept to discuss how to bring new *technologies into a profit making position* (Jolly 1997). Second, commercialization can refer to bringing new *products or services* (more or less innovative) *to markets*. In this domain, commercialization is sometimes treated

similar to launch, which means that it includes the activities at the late phases of a new product development process that introduce the new product to the market and initiate sales (e.g. Tzokas *et al.* 2004; Chiesa *et al.* 2009). However, sometimes launch concept is used to cover not only the latter tactic but also the earlier strategic decisions in new product development, such as considering the product strategy, market strategy, competitive stance and their relation to firm strategy (Hultink *et al.* 2000). We consider this broader view on launch to be rather close to the concept of commercialization.

Third, mixing these first two domains, commercialization is discussed as a last phase of an *innovation* process, following the fuzzy front end and the technical development (e.g. Buckler 1997, Zien & Buckler 1997). The end result of an innovation process can be novel technology or a novel product. Often innovation process is treated equal to new product development even though the product is not remarkably innovative. This confusing use of the innovation process concept has already received critics (O'Connor 2012). We follow O'Connor (2012) and concern innovation process to be different from what firms continuously do when developing new products.

Fourth, commercialization is used as *a framing activity for business*, which results in an answer to the question, how to make profit, and in a business model. This broader view holds that commercialization includes activities starting from when management commits to a new concept (Crawford 1997), and continues with diverse activities along the technical development of a new product (Prebble *et al.* 2008; Prenkert 2012), until the new product or service is at the market and brings profits. This represents the view adopted in this study. *Commercialization is understood here as a process that evolves from the beginning along the technical and business development aspects when bringing new products to markets.*

Overall, commercialization includes rather broad set of aspects such as strategic choices, business planning, pathways to market, and launch (Prebble *et al.* 2008), and the basic idea underlying the different domains of commercialization is that something *new* is brought to the market for the *first time* (Lehtimäki *et al.* 2008). Interestingly, having multiple aspects on commercialization have been found to be important in business practice; strong market, technology, entrepreneurial, and, in addition, networking orientation are all needed to support effective organizational learning, which leads to enhanced new product commercialization (Mu & Di Benedetto 2011). However, several aspects are not commonly discussed together in commercialization research.

Based on the discussion above, the elements and the purpose of the business model and commercialization are summarized in Table 1.

Table 1: Summary of the business model and commercialization discussion

<i>What is a business model</i>	<i>What is commercialization</i>
<ul style="list-style-type: none"> • <i>Strategy</i> implemented/described in a more operational level, how to do business (Osterwalder <i>et al.</i> 2005; Casadesus-Masanell & Ricart 2010) • <i>Revenue making structure and business logic</i> described in a more operational level, realizing value from new ideas and technologies (Amit & Zott 2001; Chesbrough 2010; Chesbrough & Rosenbloom 2002; Teece 2010) • <i>Devices that</i> affect behavior, guide and create action (Magretta 2002; Doganova & Eyquem-Renault 2009; Doz & Kosonen 2010; Mason & Spring 2011; Storbacka & Nenonen 2011; Mason & Palo 2012; 	<ul style="list-style-type: none"> • <i>Strategic and tactic decisions</i> on how to bring an innovation/a new product to the market (Hultink <i>et al.</i> 2000, Chiesa & Frattini 2011) • <i>Activities</i> aiming to introduce innovations to the market to initiate sales (Buckler1997; Crawford 1997; Zien & Buckler 1997; Tzokas <i>et al.</i> 2004; Lehtimäki <i>et al.</i> 2008; Chiesa <i>et al.</i> 2009), and to put innovations into a profit making position (Jolly 1997) • <i>A perspective</i>, parallel to the technical perspective, to new product development or innovation process including strategic choices, business planning, pathways to market, and launch (Prebble <i>et al.</i> 2008; Prenkert 2012) • <i>Probing process</i> aiming to find a winning combination of product and market (Lynn <i>et al.</i> 1996)

Business model and commercialization process transformation

As noted, both business models and commercialization can be characterized as dynamic ‘processes’, involving multiple market actors performing different types of practices. These are elaborated next.

Development of a new product requires also business model development, defining ‘go to market’ and ‘capturing value’ strategies, and outlining the logic of earning a profit (Teece 2010). The dominant view is, that to create value from a new offering (product, service or technology), a new business model needs to be developed or an existing model needs to be transformed or changed. When a fairly definite and formal model has been developed, adjustments and ongoing experiments follow (Morris *et al.* 2005). The development of a business model can start from an “overflowing” situation, with multiple possible but uncertain applications of the technology, and the actors then choosing a path to follow, and limiting the possibilities (Doganova & Eyquem-Renault 2009). Doganova and Eyquem-Renault (2009) view the development of a business model as a series of experiments in market creation. These consist of encounters with potential partners that transform the network being built by the entrepreneur’s innovation. A company can learn ahead of its market with new and potential configurations of the business model elements to probe nascent markets (Chesbrough 2010). At the same time, when firms attempt to design markets to fit their resources, they change their business models (Storbacka & Nenonen 2011).

Hence, the business model is connected to the market. While providing some stability for the firm to

develop its activities, the business model still needs to be flexible enough to allow for change (Cavalcante *et al.* 2011). Indeed, the business model is never complete but the testing of the business model should be ongoing and iterative, including experimenting and learning (Shafer *et al.* 2005; Teece 2010), and strategic discontinuities and disruptions require companies to transform their business models even more rapidly, frequently, and far-reachingly (Doz & Kosonen 2010). Processes of experimentation and effectuation have been suggested as ways to innovate business models (Chesbrough 2010). Doz and Kosonen (2010) see strategic agility as a prerequisite of successful business model transformation. Accordingly, Cavalcante *et al.* (2011) have identified four major types of business model change: creation of new processes, adding new processes, changing existing processes, and terminating existing processes.

Mason and Palo (2012) perceive business models as *frames for action*, through which business models are translated into business practices. Hence, that way business models can bring about change in their environment, which in turn shapes the business models. The business practices are centred on *network architecture, technology and market offering* (Mason & Spring 2011), as key elements of business models. Changes in any of the elements bring about changes in the other elements. That view combines the multitude of perspectives presented above (partnering, technical aspect, operations, strategy and marketing) and the dynamic view. *Therefore this study chooses to conceptualize business models through those three elements.*

It has been stated that it is still unclear, whether business model change results in reconfiguration of the firm's organizational structure (Francis & Bessant 2005) or whether organizational design and knowledge management determine business model structure (George & Bock 2011). Based on the previous discussion, *it is assumed here that both can be true. Business mode can create change and changes in the organization or in its environment can change business models.*

Commercialization is also discussed as a *dynamic*, transforming, process, especially in context of highly innovative new products and services. For such new products and services, commercialization process does not follow any well predicted patterns (O'Connor 2012). The more unclear the actual end product or service usable for an end user still is, the more distractions and sidetracks are to be expected (O'Connor & Veryzer 2001). The markets or the market creation for new innovative products do not evolve in any expectably way (O'Connor & Rice 2012). Lynn *et al.* (1996) examine how to develop an understanding of the market for disruptive innovations. In such cases, the inherent uncertainties concerning the market, the technology and timing lead that to be a continuous probe and learn process because, for example, it is difficult to plan communications that would appreciate the value of the new product, as the value is so new to the customer (Lynn *et al.* 1996). As customers learn about the innovation and its benefits, their preferences may also change, leading to the firm altering its marketing decisions and activities and also the new product features (Bohlman *et al.* 2012). From the technical perspective, too, firms dealing with really innovative products need to iterate (Lynn *et al.* 1996). Therefore, we examine more this evolving nature of the commercialization process for innovative products and services.

Probing means experimenting through different means such as introducing early versions of the new

product to a relevant initial market, which provides learning about the underlying technology and its potential, about the market and the potential applications and market segments, about the exogenous factors (e.g. government regulations, regulatory approvals) and their influence (Lynn *et al.* 1996). The probing nature of the innovation commercialization process is discussed also under concepts experimentation, visioning and market creation. The aim of this iterative process is to eventually find a winning, profitable combination of product and market (Lynn *et al.* 1996). It can be argued that this iteration continues even after that, leading to new products, and new product features and versions sustaining the commercial viability of the commercialized innovation (Jolly 1997).

Lynn *et al.* (1996) consider that this iteration is to be done in the context of strategic relevance to the commercializing firm. The fit between the existing organization structure and the new innovation affects how business model development and market creation can be managed and interpreted (O'Connor & Rice 2012). However, in case of new firms, the strategy is developing, as well, and the limits for experimentation are broader. For continuous organizational learning O'Connor (1998) proposes experiments, approaching the potential customers, and offering the innovative new product first to the most familiar market and using a strategic ally familiar with the market to act as an intermediary between the market and the project team. Internal data and informal networks help to learn about the challenges the innovation might face and the potential markets (O'Connor 1998). However, if the new product is really different from what the market expects from a firm they already know, the firm is in a risk of harming its existing market (e.g. McDermott & O'Connor 2002), and therefore search for new markets may be needed.

Even though probing and experimenting are encouraged, the choice of the initial market is not random, and the market creation can be managed by the firm (O'Connor & Rice 2012). Instead of offering the new innovative product to the most familiar market, Moore (2002) proposes addressing the most tech-enthusiastic and innovative customers first, and to *learn* from the experiences achieved with them when preparing to target the broader, mainstream market. Hence, the firm is purposive in its iterations. Also external resources are typically needed for bringing really innovative new products from ideas to markets, requiring supporting and mobilizing a variety of actors in the related network (Story *et al.* 2009). That includes potential users and customers as well as other firms and public organizations (Aarikka-Stenroos & Sandberg 2012).

Hence, *commercialization is also connected to the market*, and changes both in the external and internal organizational environment can bring about changes in commercialization plans and vice versa. Based on the discussion above, the origins of the business model and commercialization process transformation are summarized in Table 2.

Table 2: Origins of business model and commercialization process transformation

<i>Origins of business model transformation</i>	<i>Origins of commercialization process transformation</i>
<ul style="list-style-type: none"> • Business model design <ul style="list-style-type: none"> ○ Selection of technologies and features to be embedded in the offering, determination of the customer benefits, market segments, revenue streams, and mechanisms to capture value (Teece 2010) ○ Matching the technology, the market offering and the network architecture (Mason & Spring 2011) • Changes in the business environment: strategic discontinuities and disruptions (Doz & Kosonen 2010); what market actors do (Storbacka & Nenonen 2011) • Continuous development and revision of the business model: adjustments and ongoing experiments (Morris <i>et al.</i> 2005; Shafer <i>et al.</i> 2005) • Dynamic business model design <ul style="list-style-type: none"> ○ Experimentation and effectuation in order to innovate business models (Chesbrough 2010) ○ Learning and experimenting in business model design (Teece 2010) ○ Starts with multiple possible but uncertain technology applications, and the actors choose a path to follow, experimenting in market creation; encounters with potential partners that transform the network being built (Doganova & Eyquem-Renault 2009) <p>Business models can create change</p> <ul style="list-style-type: none"> • Business models can be used to shape and coordinate action (Mason & Spring 2011) • Changes in the organization structure (Francis & Bessant 2005) 	<ul style="list-style-type: none"> • Innovativeness: Uncertainties concerning the market, the technology, value for the user, and timing (Lynn <i>et al.</i> 1998, O'Connor & Veryzer 2001) <ul style="list-style-type: none"> ○ Complicates the commercialization path (O'Connor 2012) and market creation (O'Connor & Rice 2012) ○ Probing, learning, visioning and experimenting nature of the commercialization process for innovations (Lynn <i>et al.</i> 1998; O'Connor 1998; Moore 1999) • Sustaining commercialization and developing sales (Jolly 1997) • Changes in customer preferences when they learn about the new product and its benefits, leading to the firm altering its marketing and perhaps also the new product features (Bohlman <i>et al.</i> 2012) <p>Commercialization can create change</p> <ul style="list-style-type: none"> • For products for which the market does not yet exist, the choice of the initial market cannot be random, and the market creation can be managed by the firm (O'Connor & Rice 2012) • The fit between the existing organization structure and the new innovation affects how business model development and market creation can be managed and interpreted (O'Connor & Rice 2012). • External resources typically needed for bringing innovations to markets, requires supporting and mobilizing a variety of actors in the related network (Story <i>et al.</i> 2009)

Discussion and Conclusion

Evidence of the interplay between business model and commercialization process transformation

Based on the previous discussion, similarities can be found in business mode and commercialization process research findings, which provide evidence for the interplay between business model and commercialization process transformation.

First, business models are described as an operationalization of a strategy (e.g. Osterwalder *et al.* 2005; Casadeus-Masanell & Ricart 2010), and making strategic and tactic decisions and carrying them out are included in commercialization (e.g. Easingwood, Moxey & Capleton 2006; Chiesa & Frattini 2011). For example, pricing is a part of the business model (offering in Mason & Spring 2011) as well as of the tactic commercialization decisions (Chiesa & Frattini 2011). Hence, both activity and decision making perspectives are used. Second, making profit is expressed as an aim either implicitly or explicitly when discussing the concepts (e.g. Jolly 1997; Amit & Zott 2001; Chesbrough 2010).

Third, there are several similarities in the transformation mechanisms of business models and the commercialization process. First, both business models and commercialization processes transform as a result of changes in the business environment (e.g. Doz & Kosonen 2010; Storbacka & Nenonen 2011, Bohlman *et al.* 2012), and that transformation is essential and continuous (e.g. Morris *et al.* 2005; Jolly 1997). Fourth, both are seen as forms of active experimentation and exploring (e.g. Doganova & Eyquem-Renaul 2009; Lynn *et al.* 1996), where transformation is triggered by different forms of learning. Interaction with market actors during experimentation can be considered to result in learning by doing and as cumulated knowledge. Fifth, both business models and commercialization activities can bring about change in their environment (e.g. Mason & Spring 2011; O'Connor & Rice 2012).

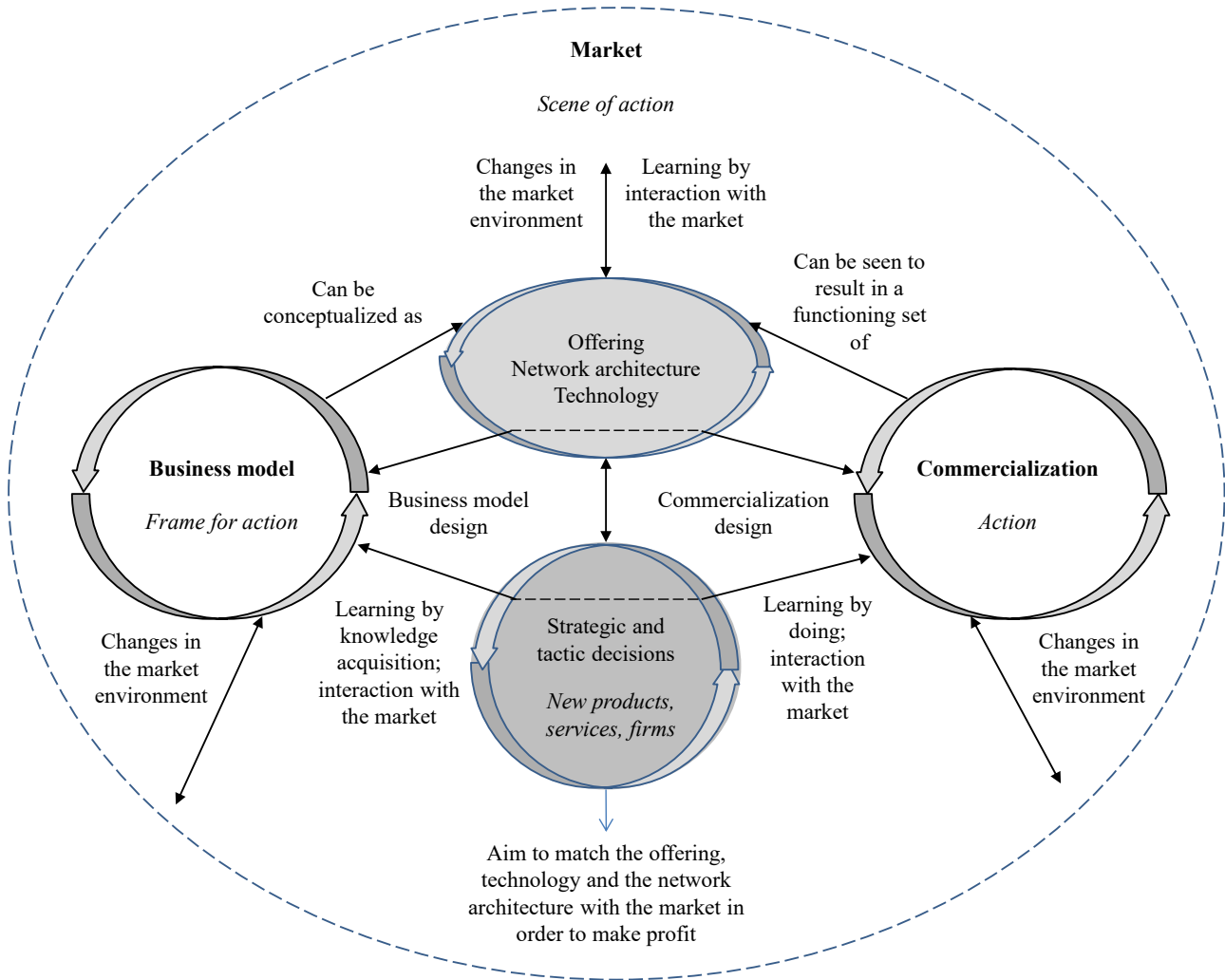
An important distinction is that whereas business model is conceptualized also as reality beyond the firm, *affecting* behavior (e.g. Magretta 2002; Osterwalder *et al.* 2005), and as a business logic (e.g. Chesbrough & Rosenbloom 2002; Teece 2010), commercialization is mainly considered as an activity, even though it might include strategic decision making (e.g. Buckler 1997; Crawford 1997). Thus, business model research appears to be less concerned than commercialization research about the practicalities, how to set up the organization to realize the business model and bring novelties to the market, even though also *acting* (e.g. Tikkanen *et al.* 2005) and practices (e.g. Mason & Spring 2011) have been integrated into the business model concept.

Another major difference was identified between dynamic views of the business model and the commercialization process. Business model design is explicitly discussed as a dynamic, *proactive* transformation (e.g. Doganova & Eyquem-Renaul 2009; Chesbrough 2010), but similar dynamic commercialization process design approach is only implicitly discussed through the probing and experimenting views (e.g. Lynn *et al.* 1996), and even then that is mostly concerned as a reaction to the high innovativeness of the new product or service (e.g. O'Connor 1998; O'Connor & Rice 2012),

when strict planning might not work.

Based on these notions, business model is considered here as *a frame for action* and commercialization as *the action* in context of new products, services and firms, as assumed in the a priori model. For business model and commercialization process transformation, *market is the scene of action*, as also assumed in the a priori model, which can be the origin or as the object of transformation. Hence, the business model can be translated into practice (see Doganova & Eyquem-Renault 2009; Mason & Spring 2011, Mason & Palo 2012) through commercialization, which in turn shapes the business model. These two are combined by strategic and tactic decisions related to new products, services or firms, for which business models are developed or transformed and commercialization activities are taken. Hence, the *interplay between the business model and the commercialization process is realized through strategic and tactic decisions. Furthermore, strategic and tactic decisions result in defining the market offering, network architecture and the underlying technology* (following Mason & Spring 2011). Hence, in that way the strategy is realized through a business model design, and the strategic and tactic decisions involved in commercialization design result in a functioning set of the offering, technology and actors (which can be continuously revised). However, there are different ways and motives to put a business model into practice (e.g. Doganova & Eyquem-Renault 2009), of which commercialization is one.

These considerations are summarized as a proposed model for the interplay between business model and commercialization process transformation (Picture 2). Business model transforms via intentional design, which results in revised strategic and tactic decisions about the new product, service or firm, but also through knowledge acquisition through interaction with market actors and due to changes in the environment. Commercialization process is transformed through the (revised) strategic and tactic decisions, but also by changes in the market environment, and learning by doing in interaction with market actors. Strategic and tactic decisions result in a set of market offering, network architecture, and the underlying technology. Learning or changes in the market environment can result in a change of any of these three elements, which then affects strategic and tactic decisions. In addition, business models and commercialization activities can intrique change in the market environment. Market is a source of changes and learning.



Picture 2: Synthesized framework for the interplay between business model and commercialization process transformation

Conclusions

Based on this study, there is evidence for the interplay between business model and commercialization process transformation, which mainly becomes evident in the strategic and tactic decisions concerning how to bring a new product, service, or firm into a profit making position in a market, and the resulting combination of the market offering, network architecture, and technology. This notion is important because companies often face challenges of connecting a technology, product or service with a market, and need tools and understanding to do this. Business models and commercialization address these aspects of the innovation; business model as a ‘longer-term’ frame how the firm aims to make profit while commercialization more of a shorter-term action, how to bring an innovation into a profit making position. However, putting the business model into practice through commercialization, and transforming the business model based on this, can result in a stronger business model in the future.

The main contribution of this study is the identification of the interplay mechanisms between

business model and commercialization process transformation. By doing that, we contribute both to business model research as well to commercialization research and show that those can learn from each other. First, commercialization approach can contribute to the business model research. Commercialization represents a way in which business models can be transformed and put to practice. Through the commercialization activities/practices and the learning of the market gained in interaction with the market and market actors, the business model and its elements are transformed. This complements our understanding of the practice of business models (e.g. Doganova & Eyquem-Renault 2009; Mason & Spring 2011) and the business model innovation and transformation (e.g. Doz & Kosonen 2010; Chesbrough 2010). Second, the business model approach contributes to commercialization research by integrating a more dynamic aspect of it to dynamic business model design; not only considering that as a task in the early phases of the commercialization process.

Managers need to understand that developing or transforming business models and commercializing innovations are interrelated, coexisting processes, that can, at best, ‘serve’ as inputs for each other. Through trials and errors, different combinations of business models can be experimented in the commercialization process. By understanding this interplay, business models can be more efficiently utilized in the dynamic process of commercializing innovations.

Limitations and further research

The main limitation of this study is that the literature review was selective and in the future a systematic integrative literature review is conducted in order to provide critical evaluation for the results of this study. Empirical research is then needed in order to deepen the understanding of the phenomenon. Particularly, the initiated approach in this study could further develop understanding of the practice of business models and the mechanisms behind business model transformation.

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