

Business model innovation in strategic alliances: a multi-layer perspective

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Business model innovation (BMI) has recently become a topic of interest for research as well as corporate practice. However, we lack specific insights into actors, drivers, and different forms of BMI as the concept is by now mainly addressed in a very general way. In this paper, we analyze how BMI takes place in strategic alliances with the focus of enhancing the recent knowledge about BMI by developing a concept that links firm-level BMI with alliance-driven innovation of business models. Against the background of an in-depth explorative qualitative study, we shed light on the basic nature business model innovation alliances (BMIA) and their effects on both, alliance level and firm level. We develop a process model of BMIA that is the first model providing a holistic picture of this particular type of BMI. Our findings allow for deep insights into BMI processes in incumbent companies and uncover in detail the importance of boundary spanning activities in this realm. By providing these insights, we pave the ground for a new stream of BMI research that focuses on the in-depth understanding of the role of collaboration and network effects in recent BMI processes. In addition, we show practical benefits for partners in BMI alliances. These insights may help to overcome the traditional fear of negative effects that is still very often prevalent in companies when it comes to issues of partnering with firm external players in strategic issues.

1. Introduction

Established companies acting in a high-technology setting recently find themselves facing a dynamic business environment characterized by fast technological advancement, high complexity, and rising uncertainty (McGrath, 2010). Megatrends such as the blurring of industry boundaries and the need for collaboration caused by an ongoing specialization of companies have changed the competitive

game significantly (Casadesus-Masanell and Ricart, 2010; Lee et al., 2012). Established companies need to be aware that competition is very often triggered by new market players bridging traditional industry boundaries (Zott and Amit, 2010). However, these new market players may open up new opportunities for collaboration and for innovation as they are equipped with a completely different mindset. Therefore, it is becoming increasingly difficult not only to identify potential competitors, their strategy,

and their possible future acting, but also to predict the development of the business environment as a whole (Bettis and Hitt, 1995) and to distinguish between possible enemies and friends.

Against this background the question arises how to ensure a sustainable market presence. As studies on business models, innovation, and technology management reveal, technological innovation matters for market success but may not be enough to ensure company survival in the long run (Doganova and Eyquem-Renault, 2009). Since technology by itself has no inherent value (Chesbrough, 2006, 2010), companies need to wrap it in a unique purpose-built business model (Johnson et al., 2008) in order to realize its full economic value (Chesbrough and Rosenbloom, 2002; Zott et al., 2011). The need for coevally analyzing these two different levels of change calls for employing a holistic perspective (Baden-Fuller and Mangematin, 2013). This is where BMIA come into play as BMIA are strategic partnerships that allow for coevally transforming and innovating the business models of the partner companies.

The business model (BM) as a tool of analysis allows for both addressing strategic issues and taking the operational level into account (Chesbrough, 2010; Laukkanen and Patala, 2014). This is underlined by Casadesus-Masanell and Ricart (2010, p. 195) who describe the BM as the ‘...reflection of a firm’s realized strategy’ whereas the operational role of the BM is highlighted by Spieth et al. (2014). Furthermore researchers agree that new BMs represent a valuable source of wealth as well as a great opportunity in today’s economy (Massa et al., 2017).

Involving strategic partners in new value-creating activity systems has several advantages: it helps companies to keep innovation costs at bay, gain access to additional resources such as knowledge and technologies, and allows companies to spread the risk entailed by all forms of innovative activities with hard-to-predict economic value (Mitsuhashi and Greve, 2009; Zott and Amit, 2010). Given the mentioned turbulent environments, alliances have become a key factor in many industries and have shifted from cost-driven alliances to knowledge-intensive alliances, where two or more partners are sharing knowledge (or other resources) and are learning from each other (Douma et al., 2000; Draulans et al., 2003).

Business model innovation (BMI) and specifically BMI that is carried out by making use of alliances has by now received little attention in business model and innovation literature. This is unsatisfactory as networks that cross borders between market players are growing rapidly and very often determine the nature of 21st century innovation processes. In other words, the scope of company acting has declined

rapidly during a very short period of time due to changing market conditions. Nevertheless, network innovation processes are complex which makes it difficult to research them and predict their outcome.

As changing ecosystem conditions require acting without delay, especially companies that are experienced in collaborating with network partners tend to rely on their extant network to overcome their resource and knowledge constraints when striving for BMI – a way of acting that is in line with suggestions from innovation literature (e.g. Mariti and Smiley, 1983; Hagedoorn, 1993; Gulati, 1999). Yet, the linkage between collaborative innovation research and BM research is weak – although Chesbrough and Schwartz (2007) and Chesbrough (2007) call for deeply linking both research streams. While researchers agree on the important role collaboration may play in terms of BMI and emphasize the boundary-spanning nature of BMs (Zott and Amit, 2010), we do by now not know much about how different partners contribute to BMI and what the resulting BMs look like (Baden-Fuller and Mangematin, 2013; Spieth et al., 2014, 2016).

Prior research on BMI has focused on (1) conceptualizing and operationalizing the focal construct (e.g. George and Bock, 2011; Zott et al., 2011; Spieth et al., 2016), (2) exploring possible antecedents (e.g. Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Doz and Kosonen, 2010), and (3) determining consequences and effects on subsequent changes (e.g. Casadesus-Masanell and Zhu, 2013; Sabatier et al., 2010; Kim and Min, 2015), but neglected to explore BMI processes on alliance level as well as interaction effects with the focal and partners’ BMs.

Knowledge about BMI processes (e.g. Sosna et al., 2010; Baden-Fuller and Mangematin, 2013) on alliance level is scarce. Therefore, it is important to have a deeper look at changes on the BM level (Dmitriev et al., 2014; Laudien and Daxböck, 2017) aiming at providing a holistic perspective of the design of BMs in the 21st century. It is especially necessary to uncover to what extent digitalization-based ways of doing business allow for an increased number of possible business configurations that may appear in terms of new collaboration opportunities and new network designs leading to new, partner-based value propositions (Bask et al., 2010). In line with extant BMI literature (e.g. Demil and Lecocq, 2010; Bucherer et al., 2012; Laudien and Daxböck, 2017), this study extends our understanding on this matter by exploring how BMI processes occur within alliances and which challenges arise related to different process stages. Moreover, possible interaction effects between the firm’s extant BM and the newly evolving, alliance-based BM are by now widely unexplored.

Consequently, we address these shortcomings and seek to deepen our understanding of business model innovation alliances in the current BMI and collaborative innovation literature by exploring how BMI processes occur within alliances and which challenges arise related to different process stages. Additionally, we investigate how the internal BM and the newly developed alliance-based BM influence each other. As dimension and intensity of the ecosystem change require a reorganization of the entire value creation process causing a strong tendency for BM change, an effect on both cooperation partners is plausible. Therefore, we also establish two different perspectives – an internal, firm-focused BM perspective and coevally an external, alliance-based BM perspective – when trying to understand BM change in this context. Allying for the sake of jointly innovating a BM is likely to follow different rules compared to traditional types of strategic alliances (see e.g. Hamel, 1991; Gulati and Singh, 1998; Das and Teng, 2000).

We approach these research objectives against the background of a qualitative-empirical study embedded in automotive industry. Our unique sample, which includes matching data that cover information on the internal, firm-focused BM as well as the external, alliance-based BM, allows for establishing a processual perspective on the evolution of both types of BMs. Therefore, our study coevally contributes to alliance literature and BMI literature as we link these two research streams and develop an empirically grounded process model of BMI in alliances that takes the interplay with the companies' extant BM into account.

2. Conceptual background

2.1. Business model

To date research has not reached a commonly agreed definition of the BM yet (Zott et al., 2011; Wirtz et al., 2015; Massa et al., 2016). Hence, this study follows the useful distinction by Zott and Amit (2010, p. 216) who define a BM '*...as a system of interdependent activities that transcends the focal firm and spans its boundaries*'. However, we do explicitly not rely on the more detailed BM conceptualization by Amit and Zott (2001) who name content, structure, and governance as key elements of the BM, as we regard this perspective as mainly company focused and therefore not helpful for our research context. Instead, we prefer the BM elements of Teece (2010), who states that a

BM articulates how a company approaches value creation, value delivery, and value capture in interaction with partners – a viewpoint that is widely shared especially by papers aiming at understanding BMI (e.g. Chesbrough, 2007, 2010).

The BM element that is usually considered first when creating a BM is value creation (Massa et al., 2017). Central in this realm is the articulation of the value proposition matching the identified market segment (Chesbrough, 2010). Following, it is important to outline the value delivery element which illustrates the mechanisms how to bring the created value to the customer (Dahan et al., 2010). Finally the value capture element deserves attention as this element gives an answer to the question how to earn revenues by monetizing the proposed, created, and delivered value (Chesbrough and Rosenbloom, 2002).

2.2. Business model innovation

A BM needs to fit ecosystem conditions to be successful which imposes the challenge to constantly monitor the viability of the applied BM configuration (Teece, 2010; Bucherer et al., 2012). In case of an identified misfit, the BM needs to be adjusted to the new ecosystem conditions (Morris et al., 2005; Demil and Lecocq, 2010; Doz and Kosonen, 2010). This adjustment is called BMI.

In line with BM literature, extant research on BMI provides a heterogeneous understanding of the phenomenon. In this study, we follow the BMI definition of Khanagha et al. (2014, p. 324): '*Business model innovation activities can range from incremental changes in individual components of business models, extension of the existing business model, introduction of parallel business models, right through to disruption of the business model, which may potentially entail replacing the existing model with a fundamentally different one*'.

While some scholars state that BMI has to be new to the industry (Santos et al., 2009), we follow a second stream that argues that BMI can also be new to the firm (Osterwalder et al., 2005; Johnson et al., 2008; Bock et al., 2012).

The same fragmentation is true for research on BMI processes. While Demil and Lecocq (2010) define it as a continuous reaction to changes in the environment, Dunford et al. (2010) describe it as an evolutionary process. Other authors consider it as an ongoing learning process (Chanal and Caron-Fasan, 2010; McGrath, 2010; Sosna et al., 2010) or an analytical approach (McGrath, 2010; Smith et al., 2010; Sosna et al., 2010).

2.3. *Openness of business models vs. business model innovation alliances*

Chesbrough (2006, 2007) states that BMs are closed by nature. However, he was the first who distinguished between open and closed BMs. The term ‘open BM’ was originally used in the context of collaborative innovation research but was used more broadly later on referring to all aspects of the BM (Sandulli and Chesbrough, 2009). The phrase collaborative innovation characterizes innovation processes that require a high degree of openness against and collaboration with partners. Collaborative innovation literature (e.g. Enkel et al., 2009) shows that by means of collaboration companies are enabled to enhance their knowledge and resource base and to overcome inflexibilities or even inertia. Saebi and Foss (2015) discovered that different companies benefit to a different extent through the use of collaborative innovation and state that this phenomenon could be explained by the fact that their BMs are not attuned to collaboration. Therefore, collaborative innovation calls for new, open BMs which facilitate the sharing or licensing of technologies (Chesbrough, 2007, 2010). Chesbrough and Schwartz (2007) emphasize the impacts of co-development on BMI. However, they only refer to additional BM options resulting from co-development partnerships. While they focus on new product development rather than on BMI, the co-development partnership does not actively innovate the BM. Yet, present collaborative innovation research mainly looks at how the integration of diverse stakeholders, customers, suppliers, and competitors improves technology development and thereby advances product innovation (West and Lakhani, 2008; Bogers et al., 2010; West and Bogers, 2014) but rarely focuses on BMI aspects. Extant research stresses that BM needs to be aligned to the innovation practices of the firm or the business unit (Magretta, 2002; Casadesus-Masanell and Ricart, 2010; Casadesus-Masanell et al., 2015; Santos et al., 2015).

Hence, we introduce the concept of Business Model Innovation Alliances (BMIA) to add the integration of alliance partners into the BMI process. BMIA depict strategic alliances as they are based on asset pooling or resource exchange agreements between companies (Stuart, 1998). The suitability of an alliance is measured by the coherence of the alliance partners’ internal strategy, structure, and processes (Nielsen and Gudergan, 2012). In a narrow definition, the strategic fit between allying companies can be understood as the match between the allies’ strategic approaches (Nielsen,

2010). A broader perspective relates strategic fit to similarities in technology, products, and markets, separating it from organizational fit with organizational processes and logics (Nielsen and Gudergan, 2012). Greater fit of organizational processes and dominant business logics implies that companies can more easily leverage resources to joint value-creation opportunities (Lado et al., 1997). ‘The key challenge of alliances in general is to coordinate the activities of two independent entities, as two or more potentially opposing characteristics regarding structure, culture and process velocity need to be reconciled’ (Spieth and Meissner, 2018, p. 6). Hienerth et al. (2011) strongly recommends companies should follow collaborative innovation strategies to arrange in line with the organizational aspects of their BM to external knowledge sourcing and its subsequent integration into the internal knowledge base and finally its exploitation for innovation (Spieth and Meissner, 2018). In our view, BMIA are established to jointly create an innovative, shared BM as well as to capture value from it. This is what happens on the alliance level. However, the alliance BM can also have implications on the company level as it may affect the internal BM of each partner as a consequence of the learning process in a BMIA.

3. Methodology

Main objective of this paper was to explore BMI processes within BMIA and challenges related to distinct process stages. Additionally, we investigate how the internal BM and the newly developed alliance-based BM influence each other.

As BMIA are a newly emerging phenomenon, we followed suggestions by Eisenhardt and others (Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Yin, 2014) and decided for a qualitative way of proceeding, making use of an inductive case-study approach. A qualitative approach fits best with our research aims as it allows for gathering rich, in-depth insights and is especially helpful to understand complex, multi-layer phenomena, such as the analysis of BMI processes on two different levels: the firm level as well as the alliance level (Marshall and Rossman, 2006; Graebner et al., 2012).

3.1. *Data sample and data collection*

We base our analysis on a unique primary dataset. Our sample is anchored in the German automotive industry and allows us to trace all BMI alliances of one German car manufacturer, covering data from

both sides – the car manufacturer and the respective alliance partners.

We pursued a purposeful sampling strategy (Patton, 2002; Denzin and Lincoln, 2005) to select a sample that fits our predefined criteria: (1) the alliance needs to be a BMIA, which means an alliance built to jointly develop as well as execute a new BM. (2) The alliance objective has to be new to all alliance partners to ensure that BMI takes place. (3) The alliance is set up by the focal company together with established companies that run at least one separate BM in parallel to the developing alliance BM to check for interaction effects between the internal and alliance-based BM. (4) The alliance has to be already established. Those criteria guarantee similar features, which raises the probability that differences and similarities are of general relevance and allow for theorizing (Gerring, 2007).

BMIA are a newly evolving phenomenon that first surfaced in the automotive industry. As a result, finding alliances that match our criteria was challenging as especially BMIA in infant stages tends to be kept a secret and is thus very difficult to detect. Therefore, we additionally employed respondent-driven sampling (Heckathorn, 1997; Salganik and Heckathorn, 2004), asking each interviewee if he or she was aware of similar, planned, or already established alliances. Following this procedure, we were able to identify five BMIA in which the automotive OEM (= Original Equipment Manufacturer) we looked at is currently involved. Each of these BMIA has a different focus on the areas' mobility, charging, energy, storage, and parking. Table 1 shows sample details.

Our sample consists of 18 initial face-to-face interviews. We supplemented the interview data with additional data collected via phone calls so that in the end we approached each informant several times and ended up with more than 38 hours of interview recordings. It enables us to employ a portfolio perspective on the phenomenon under research. Our dataset consists of six interviews with representatives of the alliance partners, two with the managing directors of the created joint ventures and 10 interviews with firm's internal alliance managers from the focal company, one with a focus on business administration, and one for the technical aspects for each of the alliances. All interviews were conducted between September 2015 and March 2016. The initial interviews lasted about 1.5 hours.

Aiming at collecting process data, we used semi-structured interviews to get a wide range of both past- and present-oriented accounts from people who are experiencing the phenomenon of BMIA in their day-to-day business. Furthermore, we only approached top-level key informants as we needed to

ensure the expert status of our informants to maintain data quality.

The interviews are based on four different question sets exploring the role of processes/structure, governance, culture, and learning in BMIA. In the course of the study we carefully revised the initial interview guideline, concentrating on emerging themes as recommended by Glaser and Strauss (2009). Analyzing the data did not directly follow the data collection in a linear way but was rather a recursive process as data collection and data analysis overlapped with each other (Eisenhardt, 1989).

In a second step, we supplemented the interview data with internal and external archival data such as annual reports, presentations, and media articles to allow for data triangulation with the aim of delimiting a possible retrospective bias.

3.2. Data analysis

Our data analysis is based on a two-step coding procedure as described by Gioia et al. (2013) that we applied to the synthesized data of both data sources, interview data, and archival data. Following a thorough transcription process, we used an open-coding technique, sticking close to the words originally used by the informants whenever possible (*in vivo* codes). Otherwise we summarized the statement in a simple descriptive phrase (first-order codes) (van Maanen and Schein, 1979; Strauss and Corbin, 1998; Gioia et al., 2013). To begin with, we grouped the data in first-order concepts according to underlying basic concepts. Then we looked for similarities and differences between the categories using axial coding in order to condense the first-order concepts into second-order themes. Only after this task had been completed, we conducted an extensive literature analysis that allowed us to go back and forth between literature and emergent theory and thereby to support confidence in the findings as well as to re-sharp our emergent theory in confrontation with conflicting literature (Eisenhardt, 1989). This process was again iterative in nature; constantly cycling between data, emerging patterns, and relevant literature resulted in a synthesis embedded in both the collected data and theory developed in the literature. Last, we made use of selective coding to further condense related themes into overarching dimensions (Strauss and Corbin, 1998; Gioia et al., 2013).

To further enhance the trustworthiness of our data, we took several steps including careful management of our data (contact records, interview transcripts, documents). This includes that one member of the research team took an external role as devil's advocate with the aim of enhancing objectivity as

Table 1. Sample description

#	Code	Interviewees	Partnering firms	BMIA	Objective	Benefit automotive OEM	Benefit partner(s)
1	M1	Automotive OEM 1 Business	Automotive OEM & Car Rental	Mobility	Short-term mobility-on-demand solutions	Expands its BM to include additional mobility services	Complements its BM by integrating a free floating car sharing system
2	M2	Automotive OEM 1 Technology					
3	M3	Car Rental 1					
4	M4	Joint Venture: Mobility 1					
5	P1	Automotive OEM 2 Business	Automotive OEM & Integrated Parking Solutions	Parking	Easy access to parking space	Adding further mobility services to its portfolio	Gaining a valuable distribution channel
6	P2	Automotive OEM 2 Technology					
7	P3	Integrated Parking Solutions 2					
8	C1	Automotive OEM 3 Business	Automotive OEM & Charging Infrastructure	Charging	Premium service to find, use and pay charging stations	Access to complementary products and services to support electric vehicle field	Benefits from an additional customer base
9	C2	Automotive OEM 3 Technology					
10	C3	Charging Infrastructure 3					
11	E1	Automotive OEM 4 Business	Automotive OEM & Heating Systems	Energy	IT-based energy consulting	Both partners benefit from entering a new business area, enabled by their complementing know-how	
12	E2	Automotive OEM 4 Technology					
13	E3	Heating Systems 4					
14	E4	Joint Venture: Energy 4					
15	S1	Automotive OEM 5 Business	Automotive OEM & Energy Supplier & System Integrator	Storage	Stationary energy storage	Like it is for the alliance 'Energy' case, entering this new market alone would be very cost-, learning- and time-intensive for the participating firms	
16	S2	Automotive OEM 5 Technology					
17	S3	Energy Supplier 5					
18	S4	System Integrator 5					

well as keeping the higher level perspective crucial for informed theorizing (Eisenhardt, 1989; Nemeth et al., 2001; Gioia et al., 2013).

4. Results

Against the background of the employed coding procedure we were able to gather interesting insights into the run of BMI in alliances. Our data reveal that two distinct aggregate dimensions can explain BMI in alliances: (1) BMI processes on alliance level and (2) Interaction of BMs on firm level. BMI processes on alliance level can be explained by the four phases: concept, foundation, development, and operation. Interaction effects on firm levels are considered by the four phases: identification, consolidation, creation, and adaption. The detailed results of the coding process are displayed in Figure 1. In the next subsections we elaborate in-depth on these two dimensions.

4.1. BMI processes on alliance level

On *alliance level*, the first phase of the BMI process is a phase we call the *concept phase*. It is characterized by the search for approval of a newly evolving, promising idea. This idea can either arise in a more scientific setting (e.g. conferences), within a preceding project, or in the company itself. Following the emergence of a new idea, the company has to investigate the idea's commercial potential, alongside conducting a market and competitor analysis in the respective market. Moreover, the company needs to examine which distinct requirements this idea entails and for which parts of these requirements the company may need the support of a partner. Furthermore, the question of funding is essential: is it more viable to invest alone or with a partner? When all of those aspects are clarified, they are summarized in a first draft of a business case. *'The business case describes the innovation/product requirements that determine what we can do on our own and for which aspects we need external support'* (E2). Based upon this business case the company seeks internal approval for the evolving idea as well as a formal permission to rethink established BM components and to develop a parallel BM with the help of an alliance partner. As interviewee E1 puts it: *'then we start going to committees using a power point presentation with an attached price tag to get internal approval'*.

In a second phase that we call *foundation phase*, the company searches for a partner that is able to provide the identified resources and capabilities that are necessary to realize the new BM idea. Two effects influence this partner foundation. First, a lack

of standardization opportunities makes every search process unique as each innovation idea requires an idiosyncratic set of resources and capabilities. Second, the requirements considerably delimit the number of available partners, which enhances partner search complexity. S3 describes this challenge as follows: *'naturally concerning new services it is a little different as regarding established business models. We have to be happy to find a partner at all that matches the project requirements. There is no detailed screening process anymore'*. Once the right partner is found, the alliance has to be established. In this stage, top-level commitment from both partners is essential as this eases contract negotiations. At this point of the process, the quality of the alliance contract is of major importance, as it lays the foundation for the future cooperation and will be consulted whenever difficulties occur. E4 underlines this by stating: *'...in a good cooperation the contract stays in the cupboard and is slowly forgotten as we take care of the operative business'*. Based on the specifications of the alliance contract, alliance structures and processes are established. They depict the framework for jointly developing and later operating the BM. Within this structure, all partners jointly conduct a thorough analysis of the innovation idea itself, its technical feasibility as well as the underlying BM, thereby they verify their initial business case drafts and compile a first project plan regarding time management and further steps of the development of both the BM and the resulting product or service. P2 highlights that *'...this phase ends with a detailed project plan: who does what when'*. A main challenge of this stage is the need for a constant alignment of the partner's goals.

The next phase named as *development phase* involves the development and experimentation with the new alliance BM. Furthermore, the product or service is developed according to the project plan. Constant monitoring and iteration loops allow the companies to adapt the evolving BM whenever necessary. According to C3 *'...this phase is defined by the milestones of the project plan and ends with the so-called acceptance test'* of the associated products or services it constitutes. During this phase, the measurement of the alliance success in relation to the input of each partner represents a key challenge. *'At this point it is crucial to show that the alliance generates more than a simple addition of its individual companies'* (M1).

This motive migrates into the next and last phase which we call *operating phase*. This is all about reaping the fruits of the precedent labor by taking the BM to market and capturing value from it. Therefore, an equilibrium between input and output

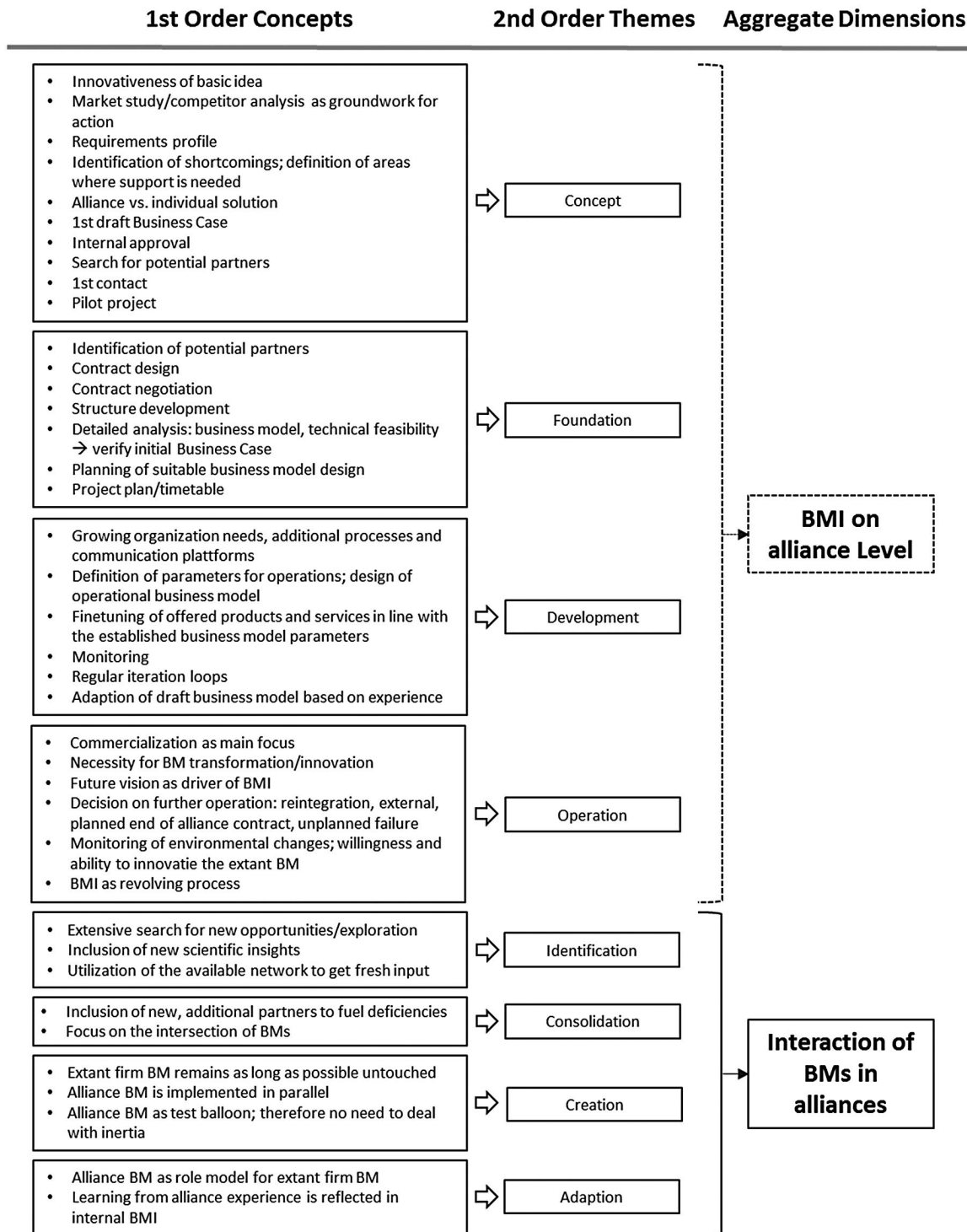


Figure 1. Coding results.

of all partners needs to be ensured. P1 stresses this challenge by stating ‘we often struggle to balance input and output of both partners as soon as intangible assets are involved. E.g. what is the financial value of data?’ Once the operation of the BM runs smoothly, the question of a vision for the future of

the alliance emerges. ‘The alliance BM can either be reintegrated in one of the mother companies, executed independently, or come to an end with the defined completion of the alliance contract. In each case, the right timing is crucial’ (S4). The least desirable option is an unplanned failure of the alliance

leading to an immediate termination. Once there is a vision for the future of the BMIA, the process starts anew with the emergence of an idea on how to further enhance the alliance BM.

4.2. Interplay between the BM on alliance and company levels

Our data show a distinct linkage between the newly developed BM on alliance level and the company's extant BM. This linkage includes four corresponding phases that we name identification, consolidation, creation, and adaption.

In the *identification phase*, independent companies look for new ways to enhance their BM regarding all three BM elements: value creation, value delivery, and value capture. Therefore, they engage actively in meetings with a scientific basis and use their existent network to get fresh inputs and establish new contacts. C1 explains that this *'may take place only related to one firm or related to all future partners at the same time'*. Often environmental dynamics such as technological innovation leaps, social developments, or regulatory requirements lead to new questions that preoccupy several industries concurrently. As interviewee M3 puts it *'at the moment nearly all companies deal with the same thoughts on how to improve their BM and approach each other with their ideas'*.

Within the *consolidation phase* again *'one company individually or both companies simultaneously make use of their network, complemented by other sources, such as trade-shows, venture capital, investment bankers etc., in order to identify potential partners'* (E3). According to our data companies still mainly focus on the value creation aspect of the BM. Once a potential partner is found, both partners look for an intersection in their BMs. This intersection lays the foundation for a future alliance. S3 claims that the consolidation phase starts with *'a rough strategic exchange how far contents would match. If two companies are active in the same field and both want a piece of this cake, it is essential to make sure early in the process that there are complementing, synergistic areas'*.

The *creation phase*, which takes the remaining two BM elements – value delivery and value capture – into consideration, is characterized by the fact that innovation only takes place on the alliance level and not within the company boundaries, as companies do not want to jeopardize their extant BM. The new BM is – for example under the roof of a joint venture – executed in parallel to the extant BM, *'serving as some sort of test balloon'* (M4). Therefore, an adjustment of the extant BM does not

take place. This independence allows the company to especially benefit from the innovated BM as it is not necessary to deal with inertia. Furthermore, it enables the alliance to *'promote its business without being held back by corporate structures and processes as speedboat next to the big tanker'* (M2). Another key element of the creation phase is BM experimentation *'with its regularly iteration loops and adjustments of the BM'* (S2). Interviewee C2 emphasizes the importance of BM experimentation by asking *'How likely is it to hit the bull's eye first time when we decide to do something entirely different?'*

Only in the next phase, the *adaption phase*, which focusses on finally capturing value from the newly developed BM, this innovative BM provides some kind of role model for the extant BM. P3 highlights the learning aspect as he states that it is essential to *'integrate the knowledge that has been generated within the alliance into our own, internal business model'*. This leads to internal BMI. Nevertheless, another interviewee adds that companies *'often struggle to spread the lessons learned within the company'* (M2).

However, the learning effect can even be increased when the process starts anew. In this case, every partner starts into the new cycle with an internal BM adapted according to the knowledge created in all former BMI alliances. This adapted internal BM allows each company to additionally learn from each former BMIA its partner has conducted so far. Resulting from this discovery the importance of strategic partner selection processes cannot be overestimated.

4.3. Cross-alliance comparison and clarification of results

Although we see similarities between the analyzed BMIA, we need to highlight that the alliances under research are somewhat different with regard to their detailed technical purpose as well as their development status. By now, not all of the alliances have reached the operation/adaption phase yet. For example, Storage is still in the development/creation phase continuously improving their BM. Moreover, only Mobility has already reached the final status, where learnings from the shared BM have actually been (re-)integrated into the internal BM of each partner company and the process is starting again. Car Rental, mainly known for stationary rental stations, added a free-floating system to its BM, whereas the automotive counterpart applied their learnings to their fleet management services. All other alliance partners we

talked to expressed the intent to translate their alliance experiences into learnings for their own BM, although some of them already predicted difficulties in spreading the learning in their companies. According to our interviewees, the creation of a joint venture even reinforces this issue. Therefore, the two cases that encompass a joint venture call for an extra emphasis on regular knowledge exchange with the mother companies.

Despite these differences regarding their current stage, all alliances showed in our analysis the same development steps and critical points which points to the relevance of the uncovered similarities. Nevertheless, there is no set duration of each phase and the process does not necessarily continue straight through all four phases to restart again. Instead, it is possible to fall back to the last stage, for example, when difficulties between the alliance partners come up. Heating started into the process and completed the concept/identification as well as the foundation/consolidation phase only to find out that the alliance was not robust enough in terms of culture compatibility and the alignment of internal processes of both partners to carry out the BM development. Therefore, they went back to the foundation/consolidation phase and looked for a new alliance partner. Once this partner (Heating) was found, they set the process in motion again and are now in the development/creation phase. The same is true for Storage, which currently seems to be stuck in this phase, also due to coordination difficulties among the three alliance partners. In contrast, Parking went right through the overall process without noteworthy struggles and took the BM to market. Yet, the shared BM still needs some refinements and both partners decided to continue the BM on their own, which is in this case not that critical as Integrated Parking Solutions is located in the United States and they split their target markets.

Interestingly, all alliances mentioned the same critical points throughout the phases. First, in the concept/identification phase the main challenge is to create a viable business case in order to get internal approval for the new idea and a possible alliance. Second, the foundation/consolidation phase calls for a contract that clearly defines the future working relationship. Third, in the development/creation phase the focus lies on ensuring a win-win situation for all partners over the entire alliance lifecycle. Fourth, in the operation/adaption phase the alliance BM presents a role model for the extant BM; however, the companies often struggle to (re-)integrate the generated knowledge into their internal BMs.

5. Discussion and conclusion

5.1. Theoretical implications

With this paper we respond to recent calls for studies that examine how BMI processes take place in established companies and thereby contribute to their theoretical understanding (Arend, 2013; Baden-Fuller and Mangematin, 2013; Massa and Tucci, 2014; Demil et al., 2015). As we observed that incumbents are often relying on partners when searching for new BMI opportunities, we had a closer look on the specific characteristics of the BMI process (Baden-Fuller and Mangematin, 2013), when conducted in an alliance setting. By doing so, we do not only promote the process perspective, that is still rarely applied in studies on BMI or transformation, but also considerably enhance BMI literature. Our focus on BMI in alliances allows for a new perspective on opportunities and challenges for BMI in established companies.

Furthermore, we found that these BMIA processes take place at two different levels simultaneously. Thus, we add to the current understanding of how multiple partners contribute to BMI by introducing the need to distinguish two different perspectives: an internal, firm-focused BM perspective and an external, alliance-based BM perspective. On the alliance level, the BMI process can be subdivided into four individual phases, here called concept, foundation, development, and operation. On the BM level, identification, consolidation, creation, and adaption represent their counterparts. As both levels are closely intertwined, a careful management of both levels is crucial.

Moreover, each phase shows distinct requirements and must be treated accordingly. One example is the special needs for different learning modes that underline the interplay between the existent internal BM and the newly developing alliance-based BM. While Berends et al. (2016) divide two different learning modes called cognitive search and experiential learning, some scholars emphasize the importance of cognitive search for BMI (Cortimiglia et al., 2015; Furnari, 2015) as BM have to be defined first and then put into operation (Osterwalder and Pigneur, 2010; Chatterjee, 2013). However, others focus on BMI as resulting primarily from actions in the form of experimentation (McGrath, 2010), trial-and-error learning (Sosna et al., 2010; Mezger, 2014), and effectuation (Chesbrough, 2010; Sitoh et al., 2014). Our findings show that BMI is a combination of both learning modes instead of the result of one learning

mode on its own. They are backed up by the work of Martins et al. (2015) as well as Berends et al. (2016) but offer a new alliance-focused perspective on this topic.

The first two stages clearly emphasize cognitive search for they focus on the decisions if and how to enter new fields as well as how to design the alliance. Several alternatives are rated according to their consequences. Then this emphasis shifts towards experiential learning, for it aims at developing a new alliance BM and allows an established firm to experiment with a new BM outside the firm boundaries, using the alliance BM as some sort of test balloon. In the last phase the experiences from earlier phases transform routinized actions as the learnings from the alliance BM are integrated in the internal BM from each partner. When this process starts anew, the partners are enabled to combine cognitive search and experiential learning within the different phases and thereby to benefit from their distinct advantages. In this way, our results indicate that neither cognitive search nor experiential learning on its own leads to BMI. Instead, they should either complement each other within the same phase of the BMI process or be used alternately throughout the different process steps. Therefore, a main challenge is to create a context that allows companies to successfully alternate between both learning modes or even to combine them.

The same is true regarding structural distance between the extant internal and the evolving alliance BM that show distinct requirements towards the BMI process phases. At this point, the literature on ambidexterity can offer additional insights, as it describes a firm's ability to simultaneously execute rivaling activities (Gibson and Birkinshaw, 2004) and typically refers to pursuing two diverse strategies in the same industry (Winterhalter et al., 2016). Our findings support the view that a pursuit of two strategies in adjacent industries takes place. Currently the most popular point of view is that new BM need new organizational units (Chesbrough and Rosenbloom, 2002; Markides, 2006) for in this way each unit can pursue its own goals, value chain activities, and establish a micro-culture without hampering or diluting each other (Lavie et al., 2010; Markides, 2013). However, BM do not necessarily differ considerably. Therefore, a complete organizational separation may not always be the best approach – an insight that is strongly supported by insights from Markides (2006).

Our data show a constant need for reassessment of the separation decision after each process phase. In the very beginning an independent project team is

founded to explore future BM opportunities as suggested by the domain separation approach. After the internal permission to form a BMIA, in the second phase the question of choosing an adequate organizational form needs to be answered. About half of our sample BMIA followed the prevalent approach in the literature and established the BMIA in an individual organization (such as a joint venture), motivated mainly by independence regarding culture, processes, and staff (organizational separation). The other half decided on exploiting synergy effects by keeping the BMIA in-house as they view the new alliance BM as a potential supplement for their existent BM (domain separation). Nevertheless, in the third phase, the new alliance BM is executed separately in parallel to the extant BM (again organizational or domain separation). In the end, most of the BMIA considered reintegration as a viable approach, to ensure market staying power (temporal separation).

Our results clearly show a connection of BMI and learning and ambidexterity literature (see e.g. Raisch and Birkinshaw, 2008; Andriopoulos and Lewis, 2009). Yet, there is neither a universal learning mode, nor a one and only approach on how to become ambidextrous that is true for every BMIA. On the contrary, each decision has to be made individually, adapted to the distinct circumstances and needs of each and every BMIA anew.

All in all, we are the first to analyze BMIA in detail. Our findings highlighting distinct challenges of running BMIA as we identify different process phases and clarify the interaction between the alliance BM and the company's internal BM.

5.2. Managerial implications

Our developed process model for BMIA may serve as a reference point for alliance managers on their way to establish a BMIA, including the potential pitfalls that need to be considered in each phase. We introduce alliances as means to achieve necessary BMI with the help of stakeholders and without having to take a huge amount of risk and money. In doing so, we enable managers to do some pilot testing of new BMI ideas in parallel to the extant internal BM. As BMI only takes place on the alliance level it is not going to immediately threaten the internal BM. This independence allows companies to especially benefit from the innovated, alliance-based business model for they do not have to deal with inertia.

Our research has shown that managers should consider challenges arising during each phase on the internal BM level as well as the external alliance-based BM level and uncover potential pitfalls that managers tend to overlook. We recommend

managers to pay particular attention to the identification of a cooperation partner who disposes of complementary competencies and resources and is likely to be a good strategic match business model wise even when looking a little further into the future. Here the focus has to be on a long-term perspective, which gives the shared BM room to develop instead of starting to contradict one of the partner's internal BMs in the near future. When this match between the two internal business models is found, managers should try to secure a constant alignment of the extant BMs of all partners and the newly developed alliance BM over the entire lifecycle of the cooperation. A carefully negotiated alliance contract can assist managers whenever conflicts occur as long as it includes precise rules for the future of the cooperation.

Furthermore, we observed that managers struggle with problems that could be easily solved by improved and formalized learning processes and knowledge databases, as the firm often already has the missing piece of information. Organizational learning can help to create the required learning structures that ideally also allow their employees to continuously switch between or combine the two learning modes – experiential learning and cognitive search.

All in all, we urge managers not to rush through the phases due to time constraints but to carefully pay attention to each of the phase's distinct challenges and stepping from one phase into the other only after having completed every single step that is required. In the end, a careful execution may save a lot of time as well as conflict potential.

5.3. Limitations and future research

Our paper is naturally not free from limitations. First, we are well aware that the BM concept that builds the groundwork for our research has not yet reached the state of a theory and that BM research is – despite its existence for more than a decade – in some ways still in its infancy. Nevertheless, our utilization of the BM concept in this study is in line with the proceeding of several other researchers who consider the BM as a new unit of an analysis that helps to understand how strategic change is executed on operational levels (Casadesus-Masanell and Ricart, 2010).

Second, we acknowledge that our empirical study is only centered on one German automotive OEM which may at first sight be considered as drawback of our study. Hence, it could be fruitful to analyze BMIA with a different industry background or to look for differences in the design of BMIA that are caused by cultural divergence. However, the automotive OEM and its BMIA alliances we observe

represent more than 500.000 employees as well as annual revenues of nearly €200 billion. This is the key data that show the economic relevance of our research setting. As we are looking for BMIA at a large scale, we also have to admit that the number of possible research settings that allow for gathering rich data is due to the newness and complexity of our research topic limited.

Third, as BMIA processes are a brand new topic for incumbents and are currently subject to experimentation and continuous reshaping themselves, our study only depicts a very early stage of BMIA processes. At this point a longitudinal study could be promising in terms of portraying the temporal development of BMIA processes and a potential emergence of a best-practice approach.

We hope that our findings and especially the newly developed BMIA process model will encourage future researchers to take on where we have left off. For instance, it could also be of interest to learn more about factors that make BMIA attractive or uninteresting for companies – possible factors that deserve attention in this realm could be company size, market position, technological complexity, or differences in the background of the managers being in charge for setting up or running such a type of alliance.

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Appendix 1 Additional proof quotes

BMI on Alliance Level	Interaction Effects of BMs
<p style="text-align: center;">Concept</p> <ul style="list-style-type: none"> ▪ The process starts with a potential analysis of the idea: how do we benefit from the project, goal... (C2) ▪ The first step is a fairly rough business case, where somebody developed an idea and then we estimate if we can make it a business. (S1) ▪ Once we have a first business case, we start what we call a committee run in order to get an internal order and financial resources for our project. (C2) ▪ What can we deliver ourselves and in which points do we need external support? (S2) 	<p style="text-align: center;">Identification</p> <ul style="list-style-type: none"> ▪ First, we meet in an early stage on a scientific basis, where the ideas are usually born. (S4) ▪ A lot of companies are confronted with the same megatrends, that endanger their BMs. (S1) ▪ Looking for new business opportunities companies actively engage in discussions within their network. (E3)
<p style="text-align: center;">Foundation</p> <ul style="list-style-type: none"> ▪ The alliance contract needs to be very clear as it will be consulted whenever problems occur. (M4) ▪ Next comes the phase where everyone can no longer memorize everything. Then we have to start to structure: how do we want to treat things, do we need to write a specification sheet for certain aspects... (M4) ▪ With a growing organization we need to integrate additional processes and more detailed communication committees. Structures and processes are copied from the mother houses in an best of both worlds approach. (E4) 	<p style="text-align: center;">Consolidation</p> <ul style="list-style-type: none"> ▪ First, we contacted several firms and conducted exploratory talks to detect potential overlaps in our business interests. Next, we looked at how we could share the cake between us. (E1) ▪ We focused on potential partners with complementing resources in order to exploit synergy effects. (E2) ▪ In the beginning the total work of art is not clear yet. Therefore we need to define interfaces in the running process which means that expectations clash and we have to find a solution that suits both partners. (E1)
<p style="text-align: center;">Development</p> <ul style="list-style-type: none"> ▪ Then follows the development phase in which we tried to establish and stabilize the business model. (S4) ▪ The operative phase means to go live with the business and execute it including regular iteration loops, adjustments of the business plan as well as the business approach on the market. (P3) ▪ In the third phase the main topic is optimization. The operation goes well, the basis is right but how can we fine-tune topics like governance and targets in order to optimize the business model. (M4) 	<p style="text-align: center;">Creation</p> <ul style="list-style-type: none"> ▪ The development of new BMs needs to involve experimentation. (C1) ▪ A constant challenge throughout the whole process is to align the existing BMs of each partner with the new shared BM. (S4) ▪ Sustaining a win-win-situation over the entire alliance lifecycle is the most difficult task. (M3)
<p style="text-align: center;">Operation</p> <ul style="list-style-type: none"> ▪ The process ends with the roll-out of the business model. (C3) ▪ At this point we constantly need to refine the BM because the environment has changed. (M4) ▪ Once the BM has been taken to market the question arises what is the next step. (M1) 	<p style="text-align: center;">Adaption</p> <ul style="list-style-type: none"> ▪ One advantage of cooperation is the ability to learn from the partner. (M1) ▪ Although knowledge exchanges between the alliance and its mother companies were considered extremely valuable, they prove to be difficult. (E3) ▪ Of course each partner wants to benefit from the alliance experience for its own BM. (S2)