

# Business Model Innovation Processes: A Systematic Literature Review

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#### **Abstract**

**Purpose:** The starting point of this study is the heterogeneously dispersed knowledge on the business model innovation (BMI) process. To accelerate the development of this topic in research and practice, the study explores insights concerning the BMI process to enhance our understanding about this phenomenon and to present a helpful guidance for researchers and practitioners.

**Design/Methodology/Approach:** Given the study design (systematic review), we conducted a literature-based investigation to identify important insights on the BMI process in the literature and derive a generic BMI process from the findings.

**Findings:** Our findings underline the heterogeneous structure of BMI process knowledge in the literature. Furthermore, we could detect several content-related and scope-related differences between existing BMI processes and derive seven generic BMI process steps: Analysis, Ideation, Feasibility, Prototyping, Decision-making, Implementation, and Sustainability.

**Practical Implications:** The literature review provides researchers and practitioners with a clear guidance on the BMI process literature and the seven generic BMI process phases serve as a blueprint for BMI initiatives in research and management.

**Research Limitations:** Given the amount of academic journals, it is unlikely that every applicable scientific publication is included.

**Originality/Value:** The study's main contribution lies in the unifying approach of the dispersed knowledge on the BMI process. Since our understanding of the BMI process is still limited, this study should provide further insights that support the development of the concept and guide its practical application.

Keywords: Business model innovation; framework; elements; factors; conceptual study

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#### Introduction

Business model innovation (BMI) is a prominent topic in science and management. In particular because BMI is considered an effective and efficient form of innovation (Chesbrough, 2007; Wirtz et al., 2016a) that deals with new ways to organize business and which is directly linked with sustainable competitive advantage—if implemented successfully (Mitchell and Coles, 2003; Casadesus-Masanell and Zhu, 2013; Massa and Tucci, 2014). Furthermore, BMI allows companies to quickly adjust to market changes and to survive and prosper within today's dynamic and competitive business environment (Johnson et al., 2008; Kastalli and van Looy, 2013).

A key benefit of BMI, which can be understood as an activity of modifying an existing business model or designing and implementing a new business model (Massa and Tucci, 2014), is that it sheds light on identifying new value propositions to generate revenues and to find new ways to create and capture value for its stakeholders (Amit and Zott, 2001; Magretta, 2002; Teece, 2010). Despite the topic's academic and managerial importance, our understanding on BMI is still limited (Bocken *et al.*, 2014; Wirtz *et al.*, 2016b; Foss and Saebi, 2017) and managers lack appropriate frameworks and tools that support them in their BMI endeavors (Taran *et al.*, 2016).

So far, scientific BMI knowledge has developed largely in silos (Zott et al., 2011) and is dispersed across various fields (Schneider and Spieth, 2013; Massa et al., 2017). Given the heterogeneous structure of BMI knowledge, several contributions in the scholarly literature recommend a consolidating research approach that fosters a common understanding of important BMI concepts and that has the potential to accelerate BMI development in research and practice (e.g., Boons and Lüdeke-Freund, 2013; Massa and Tucci, 2014; Bocken, 2015; Carayannis et al., 2015).

According to the literature, the BMI process is a vital BMI concept (Schneider and Spieth, 2013; Wirtz et al., 2016a; Foss and Saebi, 2017) and a fiercely debated research topic (cf. Pynnönen et al., 2012; Sinfield et al., 2012; Frankenberger et al., 2013; Wirtz and Daiser, 2017). Since our analysis of the literature showed that research on the BMI process mainly consists of

widely-dispersed, independently developed exploratory studies, a unification of the scattered knowledge on the BMI process—following the previous recommendations in the literature concerning a consolidating approach—contributes to building a common foundation and accelerate the topic's development (cf. Boons and Lüdeke-Freund, 2013; Massa and Tucci, 2014; Bocken, 2015; Carayannis *et al.*, 2015). Moreover, providing further insights on the BMI process supports researchers and practitioners in scholarly and managerial BMI endeavors since the BMI process can be applied as a procedural framework for BMI.

Since there is—to the best of our knowledge—no study available that brings together the wide-spread insights on the BMI process, this investigation systematically analyzes extant research on the BMI process to contribute to academia and management by consolidating existing insights and by deriving a generic BMI process that can be used as a blueprint for BMI endeavors in research and practice. This way, this study explicitly addresses the call for research of Schneider and Spieth (2013, 23) concerning the need for further studies that "create a better understanding of the potential process and elements of business model innovation" and also contributes to an editorial question of a recent special issue on BMI, how a transformation of existing business models can "be organized to lead companies to success?" (Lüttgens and Montemari, 2016, p. 1). In addition, the generic BMI process can serve as a guideline to structure BMI initiatives.

As extant scholarly literature provides a wealth of information on the process of BMI that is dispersed across various fields and sources, we chose to address this issue by conducting a literature-based analysis of scholarly publications bringing together available insights and consolidating them into a generic BMI process. By aggregating and integrating existing knowledge on the BMI process, the study supports the recommended consolidating research approach and also provides a handy knowledge collection on the process of BMI for managers. To achieve these aims, the study continues as follows: In the upcoming section we explain the study approach and outline the current state of research. Next, we present the results of the literature analysis, which serve as a basis to deduce the generic BMI process in the following section. Finally,

the discussion and conclusions section summarizes the findings, implications, and limitations of the study and suggests directions for future research.

## Methodology

Given the research aim of this study, to scrutinize scholarly literature on the BMI process to identify elements, patterns, and structures as well as to aggregate and integrate existing insights on the BMI process, we chose a systematic literature review approach since it is regarded the ideal method for this type of research problem (Tranfield et al., 2003). A systematic literature review is characterized by a clearly formulated research target, a reproducible, transparent approach, a wide-ranging identification of available literature, as well as a systematic evaluation and synthesis of the relevant study content (Khan et al., 2003; Rousseau et al., 2008; Fink, 2014). We started the literature analysis by conducting a title and abstract search in peerreviewed academic journals via EBSCOhost using the databases 'Academic Search Complete' and 'Business Source Complete' (search term: "business model innovation" OR "business model evolution" OR "business model development" OR "business model dynamics" OR "business model reinvention" OR "business model innovation process" OR "business model change"). We favored the database approach since the literature on BMI is dispersed across various fields and disciplines. Scrutinizing these publications allowed us to identify 20 studies that explicitly deal with the BMI process.<sup>1</sup>

# Business Model Innovation Processes in the Scholarly Literature

Developing a process of BMI has been an important element of BMI research. In total, we could identify 20 distinctive approaches that differ in content, procedure, and scope, showing that there are various ways how people have handled BMI so far. The identified BMI processes are presented in Figure 1.

The first difference we noticed is the varying number of process steps, which fluctuate between three and ten. The BMI process of Lindgardt et al. (2009), for instance, uses three process steps ("Uncover opportunities", "Implement new business model", and "Build platform and skills") at a rather abstract level, while the BMI process of Pramataris et al. (2001) consists of ten activity-oriented process steps.

The second difference that came to our attention is the difference in orientation and focus of the identified BMI processes. While some processes are rather BMI design-oriented, other processes focus on the operations of BMI. The BMI process of Voelpel et al. (2004), for instance, concentrates on the activities that should be conducted to successfully redesign a business model. Therefore they propose four steps: (1) Sensing potential for change in customer behavior and new customer value propositions, (2) Sensing the strength, direction and impact of technology, (3) Sensing the potential for value system (re)configuration, including organizational structure(s), and (4) Sensing the economic feasibility and profitability of the proposed business model. In contrast, the six step BMI process of Amit and Zott (2012) shows a straightforward focus on operations: (1) Analyze customer needs, (2) Business model content innovation, (3) Business model structure/government innovation, (4) Checking value creation through novel business model, (5) Defining Revenue Models, and (6) Launching model.

Linder and Cantrell (2000) elaborate on the related general steps of identifying the current business model, how to develop new business models and, lastly, implement the desired change of these business models. Similarly, Deloitte (2002, p. 20) define the BMI process steps of scan & scope, rethink & redesign, as well as plan & implement. Both studies present a cross-industry approach. Pramataris *et al.* (2001) follow a different path. They present a rather fine-grained BMI process, which consists of a sequence of ten steps and intends to facilitate BMI "under the influence of digital interactive television in the advertising industry" (Pateli and Giaglis, 2005, p. 169).

Pateli and Giaglis (2005) build their BMI process upon the work of Pramataris *et al.* (2001). They suggest a first process phase of understanding and documenting the

<sup>1</sup> Since we could identify more BMI process publications with the chosen approach than a recent BMI literature review (cf. Wirtz et al. (2016a), which clustered BMI research into BMI subfields and assigned 15 publications to the subfield BMI process, we assume that the set of articles assures a meaningful census of the literature on the process of BMI.

Authors	Initial phase				:				Final phase
Linder/Cantrell (2000)	Describe the actual business model				Develop a new business model				Change the business model
Pramataris et al. (2001)	Examining Defining stakeholder business roles objectives	Identifying s value flows in s the market	Identifying key competitive drivers	Synthesizing current business model	Embedding technology architecture	Defining requirements for technological capability development	Defining service provider mediation functions	Developing new coordination scheme	Synthesizing proposed business model
Deloitte (2002)	Scan & Scope				Rethink & Redesign	ub			Plan & Implement
Mitchell/Coles (2004)	Understand and optimally apply the current business model	fol	Establish, understand and follow an appropriate business model innovation vision	stand and ate business on vision	ō	Ongoing design and testing of potential business model improvements, replacements and innovations	ng of potential ovements, novations	Unders the impro	Understand and begin installing the next business model improvement or replacement
Voelpel et al. (2004)	Sensing potential for change in customer behavior and new customer value propositions	ange in d new sitions	Sens	Sensing the strength, direction and impact of technology	<u>.</u>	Sensing the system (re)con organizatic	Sensing the potential for value system (re)configuration, including organizational structure(s)		Sensing the economic feasibility and profitability of the proposed model
Pateli/Giaglis (2005)	Document current business model	Asses	Assess influence of technology innovation	Ident	Identify missing roles	Define scenarios		Describe the new business model	Evaluate the impact of change
Chesbrough (2007)	Business Model Analysis		Exper	Experiment for Innovation		Choosing the Best Concept	he Best		Implementation
Johnson et al. (2008)	Create a customer value proposition		Design a profit formula		Identify key resources and processes	y, and s	Compare proposed to current model	70	Implement
Lindgardt et al. (2009)	Uncover opportunities				Implement new business model	new podel			Build plattform and skills
Johnson (2010)	Design the new customer value proposition	Devise the profit formula		Identify key resources and processes	Compare proposed to current model	posed Incubation odel		Acceleration	Transition

Figure 1: Identified business model innovation processes

Authors	Initial phase			i i				Final phase
Osterwalder et al. (2010)	Assembling all elements for new business model design	Resear elements f	Research and analyze elements for business model design effort	Generate and test business model options and select the best	ind test el options he best	Implement the business model prototype	ne business rototype	Adapt and modify the business model in response to market reaction
Sosna et al. (2010)	Initial business model design and testing		Business model development		Scaling up the refined business model	efined		Sustaining growth through organization-wide learning
Teece (2010)	Segmenting the market	Create a value proposition for each segment	position ent	Design and implement mechanisms to capture value from each segment	nt mechanisms each segment	eldml me	Implement isolating mechanisms	Deconstruction and evaluation
Wirtz (2011)	Idea generation	Feasibility analysis	Prototyping	Decision-making		Change management	Implementation	Monitoring & Controlling
Amit/Zott (2012)	Analyze customer needs	Business model content innovation	Business model structure/government innovation		Checking value creation through novel business model	Definir M	Defining Revenue Models	Launching model
Pyönnen et al. (2012)	Analyze customer value preferences of current business model		Innovate the business model according to customer needs	iness g to ds	Impleme survey to t	Implement a customer survey to test the business models		Adjust and implement the business model according to customer value
Enkel/Mezger (2013)	Abstraction			Analogy identification	ıtification			Adaptation
Frankenberger et al. (2013)	Initiation (analyzing the ecosystem)		Ideation (generating new ideas)	ting	Integra new bu	Integration (building a new business model)		Implementation (realisation)
Gassmann et al. (2014)	Initiation (analyzing your ecosystem)		Ideation (adapting patterns)	bu	Integratic	Integration (shaping your business model)		Implementation (realising your plans)
Yang et al. (2014)	Definition	Analysis	Innovation	Evaluation feedback	Optimization	Verification	Risk management	Execution

Figure 1: Identified business model innovation processes (Continued)

current business model. In the subsequent phase, they explicitly refer to the influence of technology, which, for example, should be assessed to identify missing roles/functions. Pateli and Giaglis (2005) also suggest to use scenario planning to define different scenarios from which management should choose the preferred option. Their process closes with the evaluation of the impact of the proposed BMI.

The recommendation to define scenarios for alternative configurations of BMI can also be found in the BMI processes of Chesbrough (2007), Osterwalder *et al.* (2010), and Wirtz (2011). These authors suggest that the final selection of a BMI should be preceded by a kind of experimentation phase, which serves the purpose to design, evaluate, and test different business models or business model options. Johnson *et al.* (2008) presents a clear road map for reinventing business models which involves the steps of developing a particular value proposition, constructing a related profit formula, identifying key resources and processes, and comparing the new model to the current one in order to know which way to go and to implement the new business model.

Two years later, Johnson (2010) breaks down the implementation step to incubation, acceleration, and transition. He explains incubation as a process that, in a first step, identifies the business assumptions that are most critical to the success of the business and, in a second step, systematically tests them to evaluate their viability. If the new business model is viable, the BMI process should enter the acceleration phase, meaning that activities and processes should become standardized and multipliable to quickly expand the new business model. The transition phase applies only to incumbent businesses since it deals with the integration of the new business model into existing structures.

The BMI processes of Mitchell and Coles (2004), Lindgardt et al. (2009), Johnson (2010), Osterwalder et al. (2010), Sosna et al. (2010), Teece (2010), and Wirtz (2011) go beyond the execution phase of the new business model since they explicitly suggest post-implementation process steps. Sosna et al. (2010), for instance, use a case study to exemplify the BMI process. Their BMI process starts with business model design and testing and—if tested successfully—hands over to business

model development. In a similar fashion like the acceleration phase, as recommended by Johnson (2010), they propose to scale up the refined business model. In their final BMI process step, however, Sosna *et al.* (2010) suggest a phase of organization-wide learning to sustain the growth of the new business model, which can be partly compared to the approach of Lindgardt *et al.* (2009), who recommend to build a platform and the skills necessary after the implementation of the novel business model.

While Teece (2010) also includes a post-implementation phase in his BMI process, he places special emphasis on the implementation of isolating mechanisms to block or at least hinder imitation by competitors as well as disintermediation by customers and suppliers. Osterwalder et al. (2010) introduce management-oriented process phases of assembling all needed elements, analysis of these elements, generate and test different business model options as well as selecting the best, implement the selected business model prototype in the field and, lastly, manage-adapt and modify—the business model if needed. This is comparable to Wirtz (2011) who likewise stresses the importance of alternatives in the prototyping phase of the business model design process (idea generation, feasibility study, prototyping, decision-making), but additionally illustrates the subsequent phases of implementation and controlling.

Frankenberger *et al.* (2013) offer a "structured view on process phases and challenges" (p. 249) including initiation, ideation, integration, and implementation (see also Gassmann *et al.*, 2014), whereas Enkel and Mezger (2013) present a strongly reduced process version of design and implementation. Yang *et al.* (2014) address the BMI process rather from a conceptual perspective by presenting generic BMI process steps that are used to illustrate the BMI procedure within their framework.

When looking at the research approaches of the publications, all of them show an exploratory research design. Of the 20 publications, 11 are conceptual and 9 empirical. All empirical studies are of qualitative nature, using interviews—and in 5 cases also a case study approach—to collect the insights for the analysis. The research approaches of the identified publications are summarized in Table 1.

Authors	Research class	Research type	Research design	Key methodical aspects
Linder and Cantrell, 2000	Conceptual	-	Exploratory	Logical reasoning and case examples
Pramataris et al., 2001	Conceptual	-	Exploratory	Literature and logical reasoning
Deloitte, 2002	Conceptual	-	Exploratory	Logical reasoning and case examples
Mitchell and Bruckner Coles, 2004	Conceptual	-	Exploratory	Literature and logical reasoning
Voelpel et al., 2004	Conceptual	-	Exploratory	Literature and logical reasoning
Pateli and Giaglis, 2005	Empirical	Qualitative	Exploratory	Literature, logical reasoning, and interviews
Chesbrough, 2007	Conceptual	-	Exploratory	Logical reasoning and case examples
Johnson et al., 2008	Conceptual	-	Exploratory	Logical reasoning and case examples
Lindgardt et al., 2009	Conceptual	-	Exploratory	Logical reasoning
Johnson, 2010	Conceptual	-	Exploratory	Logical reasoning and case study examples
Osterwalder et al., 2010	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case study, and interviews
Sosna et al., 2010	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case study, and interviews
Teece, 2010	Conceptual	-	Exploratory	Literature, logical reasoning, and case examples
Wirtz, 2011	Conceptual	-	Exploratory	Literature, logical reasoning, and case examples
Amit and Zott, 2012	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case examples, and interviews
Pynnönen et al., 2012	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case examples, and interviews
Enkel and Mezger, 2013	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case studies, and interviews
Frankenberger et al., 2013	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case examples, and interviews
Gassmann et al., 2014	Empirical	Qualitative	Exploratory	Literature, logical reasoning, case examples, and interviews
Yang et al., 2014	Empirical	Qualitative	Exploratory	Literature, logical reasoning, and case study

Table 1: Research approaches of the identified publications

Our findings of the literature review underline the previously mentioned heterogeneous diffusion of BMI knowledge (e.g., Boons and Lüdeke-Freund, 2013; Massa and Tucci, 2014; Carayannis et al., 2015; Wirtz et al., 2016a). While we found a wealth of knowledge on the BMI process, this knowledge shows a high degree of independent development and is mostly scattered in different areas of application and/or different fields of research, supporting the statement of Zott et al. (2011, p. 1019) that the literature on BMI "is developing largely in silos". Furthermore, the analysis of the identified publications showed that the BMI process field is so far entirely build upon exploratory research. From the findings of the literature-based analysis, we derive a generic perspective of the BMI process in the following.

#### **Generic BMI process perspective**

To detect generic aspects and common features of the identified BMI processes, we scrutinized the BMI processes on process step level. For this purpose, we followed a three-stage approach: We examined the descriptive content of each process step (1) and arranged them in chronologically order (2). Next, we-based on the content and sequence of the respective process step—formed process step clusters (3) that summarize the process-step-related findings of the identified BMI processes, and thus, support a unified approach by providing harmonized insights with regard to a generic BMI process.

As with any classification approach, the forming of clusters according to common criteria is also a key challenge of this literature-based analysis. This task usually requires multiple cycles of denominating and aggregating particular characteristics and synthesizing them into a reasonable set of clusters that provide a clear and transparent picture of the subject. While this approach—by its very nature—leads to a loss of information, this limitation of literature-based analyses is generally acceptable if the gain in transparency and unification of insights outweighs the constraints (Webster and Watson, 2002).<sup>2</sup>

2 The BMI process step clusters of the generic BMI process are referred to as BMI process phases in the following.

From a chronological sequence, the first BMI process phase, which we identified, is the phase Analysis. The BMI process of Linder and Cantrell (2000), for instance, starts with the description of the actual business model. Similarly, Pateli and Giaglis (2005) recommend to document the current business model and Chesbrough (2007) proposes to start BMI with a business model analysis. From a content perspective, these steps clearly overlap with the analysis activities that are suggested by other authors. For example, the initial phase of Deloitte (2002) is used to scan and scope the current situation, Amit and Zott (2012) propose to analyze the customer needs, Pynnönen et al. (2012) suggest to analyze customer value preferences of the current business model, or Frankenberger et al. (2013), who recommend to analyze the ecosystem as the first step.

While these BMI process steps show a similar level of aggregation, the BMI process of Pramataris *et al.* (2001) demonstrates a more detailed, slender BMI process structure. Their first four BMI process steps (examining stakeholder roles, defining business objectives, identifying value flows in the market, and identifying key competitive drivers) describe particular analysis activities, and thus, these are summarized in the analysis phase of the generic BMI process, which compiles activities such as analyzing the current business model and target groups/customers.

Having analyzed the current BMI situation, the next chronological step is the Ideation phase, which serves to generate BMI ideas (Wirtz, 2011; Frankenberger et al., 2013), uncover BMI opportunities (Lindgardt et al., 2009), create a customer value proposition (Johnson et al., 2008; Johnson, 2010; Teece, 2010), design a profit formula (Johnson et al., 2008; Johnson, 2010), and/or innovate the business model content and/or structure (Amit and Zott, 2012). This generic BMI process phase involves BMI activities such as determining the BMI mission, generating customer insights, and developing customer scenarios.

While several BMI process steps of the identified BMI processes can be clearly allocated to this BMI process phase, this does not apply to all of the BMI processes. The BMI process steps of Voelpel *et al.* (2004) and Osterwalder *et al.* (2010) do rather present a higher level of abstraction, and thus, combine both phases.

When looking at the BMI process of Osterwalder *et al.* (2010), their first step is assembling all elements for new business model design. To our understanding, this includes the analysis and ideation activities since the determination of the elements for the new business model usually requires a preliminary analysis and idea generation process. For this reason, their initial BMI process step covers the BMI process phases analysis and ideation.

After the analysis of the BMI situation and the generation of the BMI ideas, the developed BMI must be questioned concerning the feasibility of the planned BMI endeavor. Several publications explicitly mention this BMI process step and recommend that responsible managers sense the feasibility and profitability of the proposed BMI, before realizing the intended changes (e.g., Voelpel et al., 2004; Osterwalder et al., 2010; Wirtz, 2011). In this context, it is important to define the underlying assumptions about the technological requirements and the business environment, identify key resources and processes, and analyze critical interdependencies (e.g., Pramataris et al., 2001; Pateli and Giaglis, 2005; Johnson et al., 2008). Pynnönen et al. (2012) and Yang et al. (2014) also suggest to already address the customer perspective by recommending the use of customer surveys and evaluation feedbacks in this phase.

If the feasibility and the profitability of the proposed BMI is confirmed, a prototype of the BMI (and its concept/design alternatives) should be developed (Linder and Cantrell, 2000; Wirtz, 2011). This prototype helps to evaluate different BMI design alternatives/concepts and to refine and optimize the BMI alternatives/concepts (e.g., Osterwalder *et al.*, 2010; Yang *et al.*, 2014). Furthermore, it allows a straightforward comparison with the current business model (e.g., Johnson *et al.*, 2008; Johnson, 2010), and a more profound evaluation of the change impact (e.g., Pateli and Giaglis, 2005).

Since the BMI phase Prototyping mainly serves the analysis of different BMI design alternatives, the impact assessment of the BMI, and the development/refinement of particular BMI concepts, this BMI phase is a vital part concerning the decision, whether the BMI will be realized. Thus, with successful completion of the prototype phase the generic BMI process moves to

the decision-making phase, in which the responsible managers have to decide, whether and in which form the proposed BMI is going to be implemented. In this context, Chesbrough (2007), Osterwalder *et al.* (2010), and Wirtz (2011) suggest that the decision makers should choose the best concept between the different BMI alternatives.

The most commonly used BMI process step among the identified BMI processes is the following BMI phase Implementation (e.g., Deloitte, 2002; Chesbrough, 2007; Osterwalder *et al.*, 2010). While there are also other notions for this BMI process step (e.g., Linder and Cantrell (2000) denominate this as change the business model, Enkel and Mezger (2013) as adaptation, and Yang *et al.* (2014) as execution), it usually includes the testing, realization, and go-live of the BMI as well as the necessary change management to support a successful implementation of the BMI (Wirtz, 2011).

Following the implementation phase, several authors recommend further activities to secure the sustainability of the BMI. Lindgardt *et al.* (2009) and Sosna *et al.* (2010) suggest to start scaling up the BMI, build the required skills in the organization, and promote organization-wide learning. Moreover, the organization should implement isolating mechanisms to prevent the BMI from copycats and imitators and reduce potential substitution effects (Teece, 2010). Wirtz (2011) proposes to install a continuous BMI monitoring and controlling to sense potential market reactions and adapt and modify the BMI in response to these changes.

The final BMI process step of Johnson (2010) is the transition of the BMI into the current business model of the organization. However, this implementation step only applies to incumbent organizations. They have to decide, whether the BMI can be integrated into the current business model, replace it, or must remain in a separate unit. Against this background, we see this BMI process step rather as a BMI activity concerning the sustainability of the BMI than as an additional phase. For this reason, the sustainability phase closes the integrated BMI process.

Apart from denominating and aggregating the BMI process steps to unifying BMI process phases, we also

evaluated their level of thematization in the identified BMI processes. On the whole, the first three BMI process phases (Analysis, Ideation, and Feasibility) are a frequent subject of discussion. Nearly all BMI processes explicitly refer to these BMI process phases and stress their importance for successful BMI.

Compared to these BMI process phases, the BMI process phase Prototyping receives less attention. This is interesting since the prototyping phase is of utmost importance for real-time testing and assessment of the proposed BMI solutions. Moreover, a prototype puts the decision-makers in the position to visualize the BMI in action. Similarly, the BMI process phase Decision-making is rarely explicitly mentioned and often taken for granted. However, this phase should strictly precede the BMI implementation phase since it is the last opportunity for comprehensive corrections before the realization of the BMI.

Although some BMI processes do not explicitly mention the BMI implementation as a particular BMI process step, it forms an integral part of nearly every BMI process description. The BMI process phase Sustainability has so far only received limited attention. Given the importance of enduring competitive advantage, this has also been an interesting finding. The allocation of the BMI process steps to the respective BMI process phases as well as their overall thematization in the identified BMI processes is presented in Figure 2.

Although these seven BMI process phases do not allow a fully accurate process step allocation without any overlaps, we believe that the loss of information, which is caused by the aggregation of several different process step categories, is outweighed by the gain in transparency. Moreover, this approach is not supposed to detail differences between the distinctive BMI processes, but to support the creation of a generic BMI process, which summarizes the insights of the individual investigations (see Figure 3).

Given the consolidating approach of the study, the generic BMI process contains a consolidated set of BMI process steps that are derived from the 20 studies identified. These generic BMI process steps shall reflect the potential stages of any BMI process, whether it is, for example, a BMI with comparably little impact on the

current business model or a radical shift, requiring a comprehensive renewal of the existing business model. Against the universal character of these BMI process steps, the generic BMI process needs to be adjusted to the particular requirements of the BMI situation (e.g., a slight change of the current business model may not require a feasibility analysis). Furthermore, it needs to be noted that the generic BMI process is not a unidirectional, but a multidirectional process. For example, if the outcome of the feasibility phase is not satisfying or if the decision-making phase leads to rejecting the BMI, the company has to go back to the analysis or ideation phase. Thus, some BMIs may require passing some BMI stages several times.

The generic BMI process starts with an analysis of the initial situation, including an analysis of the current business model, products, services, target groups, customers, market, and competition. The objective of this phase is to get a clear picture of the business model environment, in particular the strengths, weaknesses, opportunities, and threats of the current business model. Summarizing, the person/team that is responsible for the BMI initiative needs to have a solid understanding of the company's present business model and the associated business model environment.

The next BMI process phase is ideation, which is used to determine the BMI mission and to create clear ideas, stories, and scenarios for the BMI. For this purpose, creativity techniques can be used to generate different proposals and to create a basis for the BMI. Here, it is important that a BMI does not necessarily have to result from new ideas; they can also be the result of reacting to a weakness or threat (Markides, 2008). At the end of this phase, the persons responsible should have a conceptual design of the new business model.

The main objective of the feasibility phase is to evaluate the practicability and impact of the BMI. This means, the conceptual draft—the result of the ideation phase—has to be assessed concerning its realizability. In this context, it is important to analyze differences and interdependencies between the new potential business model(s) and existing structures to evaluate internal and external business model alignment necessities. For this purpose, the person/team that is responsible for the BMI should conduct an environmental analysis,

Authors/Phases	Analysis	Ideation	Feasibility	Prototyping	Decision-making	Implementation	Sustainability
Linder and Cantrell, 2000	Describe the actual business model			Develop a new business model		Change the business model	
Pramataris et al., 2001	Examining stakeholder roles, Defining business objectives, Identifying value flows in the market, Identifying key competitive drivers		Defining requirements for technological capability development, Defining service provider mediation functions	Synthesizing current business model		Embedding technology architecture, Synthesizing proposed business model	Developing new coordination scheme
Deloitte, 2002	Scan & Scope		Rethink & Redesign			Plan & Implement	
Mitchell and Coles, 2004	Understand and optimally apply the current model	Establish, understand and follow an appropriate vision	Ongoing design and testing improvements, replace	Ongoing design and testing of potential business model improvements, replacements and innovations		Understand and begin insta improvement	Understand and begin installing the next business model improvement or replacement
Voelpel et al., 2004	Sensing potential for change customer value propositions, and impact of technology, S system (re)configuration struc	Sensing potential for change in customer behavior and new customer value propositions, Sensing the strength, direction and impact of technology, Sensing the potential for value system (re)configuration, including organizational structure(s)	Sensing the economic feasibility and profitability of the proposed business model				
Pateli and Giaglis, 2005	Document current business model		Assess influence of technology innovation, Identify missing roles, Define scenarios	Describe the new business model, Evaluate the impact of change			
Chesbrough, 2007	Business Model Analysis		Experiment for Innovation		Choosing the Best Concept	Implementation	
Johnson et al., 2008		Create a customer value proposition, Design a profit formula	Identify key resources and processes	Compare proposed to current model		Implement	
Lindgardt et al., 2009	_	Uncover opportunities				Implement new business	Build plattform and skills
Johnson, 2010		Create a customer value proposition, Design a profit formula	Identify key resources and processes	Compare proposed to current model, Incubation	rrent model, Incubation		Acceleration, Transition
Osterwalder et al., 2010	Assembling all elements for new business model	r new business model design	Research and analyze elements for business model design effort	Generate and test business model options and select the best	ess model options and e best	Implement the business model prototype	Adapt and modify the business model in response to market reaction
Sosna et al., 2010		Initial business model design and testing	l design and testing	Business model development			Scaling up the refined business model', Sustaining growth through organizationwide learning
Teece, 2010	Segmenting the market	Create a value proposition for each segment	Design and implement me from each	Design and implement mechanisms to capture value from each segment			Implement isolating mechanisms, Deconstruction and evaluation
Wirtz, 2011		ldea generation	Feasibility analysis	Prototyping	Decision-making	Change management, Implementation	Monitoring & Controlling
Amit and Zott, 2012	Analyze customer needs	Business model content innovation, Business model structure/government innovation	Checking value creation through novel business model	Defining Revenue Models		Launching model	
Pynnönen et al., 2012	Analyze customer value preferences of current business model	SS	model Implement a customer survey needs to test the business models			Adjust and implement the business model according to customer value	
Enkel and Mezger, 2013	Abst	Abstraction		Analogy identification		Adaptation	
Frankenberger et al., 2013		Ideation (generating new ideas)		Integration (building a new business model)		Implementation (realisation)	
Gassmann et al., 2014	Initiation (analyzing your ecosystem)	Ideation (adapting patterns)		Integration (shaping your business model)		Implementation (realising your plans)	
Yang et al., 2014	Definition, Analysis	Innovation	Evaluation feedback	Optimization, Verification, Risk management	n, Risk management	Execution	
Thematization	•	•	•				

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high

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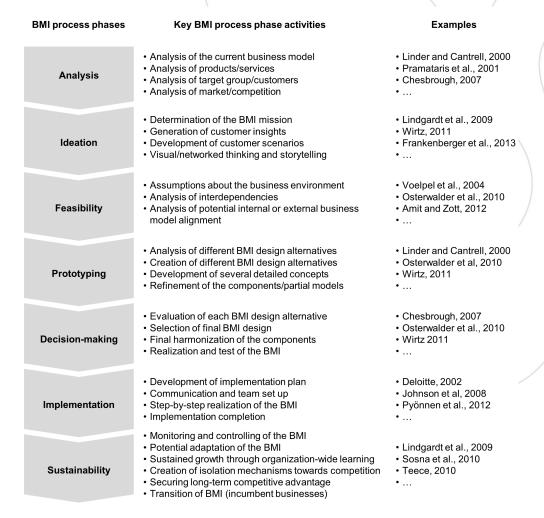


Figure 3: Generic BMI process with key activities

an analysis of the market, industry and the competition as well as a technological analysis (Chesbrough and Rosenbloom, 2002; Afuah, 2004; Wirtz, 2013). In contrast to the analysis that is conducted during the first BMI process phase analysis, the focus of the feasibility phase is on the new/planned business model.

If this phase leads to results that justify pursuing the desired BMI, a prototype of the BMI should be developed to evaluate different BMI design alternatives/concepts and refine the BMI until at least a satisfactory status of the prototype/prototypes has been achieved. Next, the BMI process enters the phase Decision-making, which serves to evaluate the different alternatives and make a final decision concerning the further progress of the BMI. Given the type, extent, and complexity of change, which the BMI may cause, this step will often include a final harmonization of the components or testing the BMI before the management takes its final decision.

The decision phase closes the design-oriented part of the BMI process and hands it over to the operations-oriented part, which deals with implementing the BMI and securing its sustainability. The implementation of the BMI has a strong project and change management character at the beginning. Thus, those responsible have to develop an implementation plan and should establish a competent implementation team to take care of the realization of the BMI.

This leads to the final step of the BMI process: Sustainability. To secure the sustainability of the BMI, the responsible managers have to assure that necessary adaptations of the new business model are applied. Furthermore, they have to take the appropriate measures to protect the BMI from imitation and disintermediation and ensure a continual knowledge transfer as well as organization-wide learning. In this context, the controlling of the value proposition and the value constellation are of crucial importance. The management

needs to know if the desired value proposition and value constellation have been achieved with the BMI. If the monitoring and controlling shows that there are deviations between the actual and the target values, those responsible have to derive the appropriate conclusions and implications and make the required adjustments. Furthermore, incumbent businesses have to determine the transition approach of the BMI. They have to decide, whether the BMI can be integrated into the current business model, can replace it, or must remain in a separate unit.

#### Discussion and conclusion

The starting point of this systematic review is the heterogeneous structure of knowledge on BMI and the call of several scholarly contributions to unite the dispersed knowledge of fundamental BMI concepts within a consolidating approach that creates a common ground. Given the importance of the BMI process, the heterogeneously disseminated knowledge on this topic, and the circumstance that the BMI process is an ongoing topic of debate, this study contributes to this consolidating approach by summarizing and aggregating available insights on the BMI process. To achieve these aims, we conducted an extensive review of related scholarly literature, from which we could identify 20 publications that investigate the BMI process.

The findings of the systematic review of the literature and the deduced generic BMI process provide several contributions to research and BMI management practice. From a general research perspective, the systematic review and the generic BMI process support the recommended consolidating research approach, and thus, foster a common understanding of the BMI concept. By harmonizing and unifying important aspects of several BMI process studies, the findings and conclusions of this study should also serve as a helpful guidance for further BMI research.

When looking at the findings of the literature review and the identified BMI processes, it becomes obvious that the general criticism concerning the heterogeneous and siloed structure of BMI knowledge also applies to this subfield of BMI research. Concerning the BMI process we found a wealth of knowledge, which shows a high degree of independent development, and thus

supports the statement of Zott *et al.* (2011, p. 1019) that knowledge on BMI "is developing largely in silos".

Although the identified studies principally try to cover the same topic, we could detect several content-related and scope-related differences. While some BMI processes rather approach the BMI process from a conceptual side, others show a more detailed and operations-oriented approach. Thus, the BMI processes also vary significantly concerning the number of proposed BMI process steps. The BMI process of Lindgardt *et al.* (2009), for instance, consists of three, the BMI process of Linder and Cantrell (2000) of four, the BMI process of Amit and Zott (2012) of seven, and the BMI process of Pramataris *et al.* (2001) of ten process steps.

Apart from that we also encountered differences concerning the orientation of the identified BMI processes—some focus on the design of new business models, while others focus on the management and realization of BMI. This finding may also be seen as a further indicator of the partly differing views and opinions of what BMI actually is. If there are fundamental differences about the understanding of BMI, this leads to different BMI processes. Against this background, this study uses a far-reaching definition of BMI to develop a generic BMI process that includes the necessary elements for narrow as well as broad BMI definitions.

After scrutinizing and comparing the BMI processes on an abstract level, we could derive seven generic BMI process phases, which should be taken into account when dealing with BMI: (1) Analysis, (2) Ideation, (3) Feasibility, (4) Prototyping, (5) Decision-making, (6) Implementation, (7) Sustainability. Although the individual steps of the identified BMI processes cannot be allocated to these seven BMI process phases without any overlaps, they nevertheless reflect a wide-ranging aggregation of the recommended BMI process steps in the scholarly literature.

The generic approach to the BMI process also provides a comprehensive perspective on the BMI process. While previous approaches do either not cover the entire scope of the BMI process (e.g., Linder and Cantrell, 2000; Pateli and Giaglis, 2005; Enkel and Mezger, 2013) or do not detail particular phases (e.g., Pramataris *et al.*, 2001; Mitchell and Coles, 2004; Sosna *et al.*, 2010),

the generic BMI process supports a holistic perception. However, the generic BMI process is not a ready-made, one size fits all concept that can be blindly accepted without making any modifications. It should be seen as a BMI process framework that provides researchers and managers alike with a BMI process blueprint, which they can adapt to their specific needs.

A further important conclusion of this study is the multidirectional character of the BMI process. Instead of being a sequential, unidirectional, standardized procedure, the BMI process is rather a semi structured flow of activities that need to be matched with the specific requirements of the respective BMI initiative. Thus, it is not an essential prerequisite that each BMI initiative actually covers each of the BMI process phases: Depending on the requirements of the BMI initiative, some BMI process phases may be passed several times and some not at all. However, the initial planning of the BMI initiative should start with the extensive process, taking into account each possible BMI process phase, and each decision concerning deviations from this plan or upcoming variances from the course of the BMI initiative should always be based on a holistic BMI process perspective.

Given that this is—to the best of our knowledge—the first study that provides an overview of the scattered knowledge on the BMI process, this article also assists academics and practitioners in navigating in the literature and allows them to quickly get a grasp of the subject. Thus, the gain in transparency provides research and management with a clear and systematic BMI process that aggregates the insights of the identified studies. Against this background, especially managers should benefit from this approach since the generic BMI process can serve as a straightforward guidance for BMI development and integration. In this context, the generic BMI process can also be regarded a procedural framework that supports managers in establishing a new business model and/or renew an existing business model.

Moreover, the generic BMI process suggests a standard workflow and highlights the main activities that have to be performed within the respective BMI process phases. This presents managers with the opportunity to assess potential conflicts at an early stage and to

align the BMI process as a whole. This way, the generic BMI process provides a transparent approach that supports managers in planning, organizing, leading, and controlling BMI initiatives.

Even though this study provides several benefits to research and practice, it also has its limitations. Given the vast number of available journals, it is unlikely that every available, applicable publication was included in the analysis, especially as this study is limited to peer-reviewed English-language publications, excluding studies in other languages. Thus, it is possible that there are further aspects of the BMI process that may have skipped our scrutiny. However, considering the extensive, systematic analysis of the literature, the article should adequately reflect extant knowledge on the BMI process.

Apart from that, the process of aggregating and classifying the BMI processes is an elusive procedure that by its very nature leads to a loss of information. Moreover, the allocation to the abstract BMI process step categories can sometimes be questioned since the steps of the identified BMI processes occasionally match several selection criteria. However, these constraints are part of scientific practice when dealing with systematic analyses. Since the authors are conscious of these limitations, the results of the analyses should be acceptable though.

The findings and limitations of this study as well as the transparent illustration of previous research works also provide several opportunities for future research. Since all studies identified were of exploratory characterboth conceptual and empirical papers—there seems to be a need for confirmatory research. While exploratory research is often used in the beginning of new fields of research, BMI research should start to intensify the use of confirmatory approaches to substantiate previous findings. This would also support the recommended consolidating approach for the field, as empirical evidence might help to separate promising from languishing approaches. In this context, research should empirically validate the number of BMI process phases, in particular, whether one can speak of an overall BMI process (one size fits all approach) or whether the BMI process and its phases are dependent on different industries or situational conditions. Furthermore the

question remains, whether there are variations in the BMI process concerning different business model types (e.g., for online business models content, commerce, etc.).

In a similar fashion, empirical research should shed light on the question, whether the BMI process really is a linear process or linear sequence of steps—as usually presented in the scholarly literature—or a whether it rather is a retrograde process or cycle. In reality, for example, innovation processes often include parallel activities and/or feedback loops that may also cause cyclical sequences. A further important aspect of the BMI process are its success factors. In this connection, research should analyze two vital elements: (1) the general success factors of the BMI process throughout all phases and (2) the phase-specific success factors. This way, research can contribute to identify crucial determinants that have a significant impact on the success of BMI endeavors.

From an organization perspective it is of great importance to clarify the question, how the BMI process should be anchored in the organizational structure. Does BMI, for instance, rather have a project character or does it make sense to embed the BMI process in the day-to-day management and operations. In this context, it is also interesting to clarify the respective roles, responsibilities, and accountabilities and to identify the required skills and competences that foster BMI. In this context, the connection between the individual BMI process phases and company strategy as well as operations seems to be a further interesting field—especially concerning the integration and implementation of BMI. In this context, research should, for example, provide transparent concepts on how the BMI

phases and the company functions interact and have clear suggestions on how to effectively incorporate BMIs in day-to-day business and how to elaborate efficient interfaces between BMI implementation, strategy, and operations.

While the investigated publications generally describe BMI as a company activity that takes place during a foreseeable period of time, research should also look into medium- and long-term BMIs, which rather have an evolutionary character. How are these business model evolutions to be managed and anchored in the organizational structure? And what should be the focus of these activities—rather technology-driven or customer-oriented? Against the background that research has so far devoted less attention to the BMI process phases Prototyping, Decision-making, and Sustainability, these phases should be subject to further conceptual and empirical study.

Furthermore, considering the different level of detail and different areas of application of the BMI processes, investigating BMI process discrepancies and particularities seems to be a fruitful avenue for future research. In this context, differences and adaptation requirements of BMI processes concerning situational, cultural, or hierarchical aspects could provide further interesting insights for research and practice. After all, BMI has established itself as a vital instrument of successfully innovating companies and shaking up entire industries and markets. Hence, its importance cannot be overstated. Given the still limited understanding of this phenomenon, research must continue to obtain new findings. In this context, the BMI process deserves particular attention since it plays an important role for academia and management.

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