The Relationship Between Dynamic Business Models and Business Cases

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Abstract: This paper analyses the relationship between two well-known business concepts. It clarifies how business models, as an implementation of a company's strategy, can be aligned with business cases, as an abstraction of a company's operations. The relationship is analyzed from a static as well as a dynamic point of view by means of inductive reasoning and literature review. Based on the understanding of the relationship, a continuous business model-business case alignment approach is proposed. Further, managerial guidelines are presented supporting the approach. This paper contributes to research and practice. Both can benefit from the conceptual relationship between two well-known concepts that have hardly been linked so far. Practitioners can apply the proposed alignment approach and the managerial guidelines to review their business. For research, we contribute to the body of knowledge of business model concepts. Researchers can build upon this fruitful ground by validating the proposed concept in empirical settings or by implementing software solutions supporting this approach. Consequently, the agility of companies can be increased when implementing merged or changed business models in the organization and when using business cases to determine if it is time to change the business model.

Keywords: business model, business case, strategy, operations, management, implementation

1. Introduction

Companies are continuously striving for more agility. One of the challenges is the rapid translation of changes in a company's strategy to its operations and vice versa. For example, after the acquisition of Sun by Oracle, Oracle cut former Sun partners, without notice, from their hardware maintenance renewals business (Kovar 2010). For many of those partners, maintenance renewals were an essential part of economic survival. Therefore, these companies needed a very high degree of agility to be able to adapt their strategy and implement it in changed operations before they would go out of business.

Unfortunately, there is a gap between business strategy and business operations, hampering companies' agility. Al-Debei & Avison propose to fill this gap with the 'business model' (BM), which can be used to "translate the broad strategy into more specific business architectural, co-operational, value propositional, and financial arrangements needed to achieve the strategic goals and objectives of the business" (Al-Debei & Avison 2010, p.370). This study builds upon that claim and aims to show that ‚business cases' (BC), i.e., the (documented) rationale for executing a project or investment in accordance with the strategy, complement the business model in closing the gap between strategy and operations. The mutual relationships between BM and BC may be taken into account in today's business practice implicitly, but with some exceptions, e.g., (Casadesus-Masanell & Ricart 2010), they did not receive much attention in the literature. Therefore, this study aims to clarify the relationship between BM and BC, based on literature review and inductive reasoning. Moreover, this study aims to provide a starting point for incorporating this more explicit understanding in organizational processes and software tools supporting those processes. Throughout the study, mergers & acquisitions (M&A) will be used as an example because they often cause disruptive changes in the strategy and operations of companies.

The structure of this paper is as follows. Section 2 provides a background on the BM and BC concepts and the factors causing BMs and BCs to change over time. Section 3 analyzes static similarities between BMs and BCs and dynamic influences of a BM on BCs and vice versa. Section 4 identifies managerial and technical implications for companies and section 5 concludes this paper.

2. Background

2.1 Business models

While several definitions of business models can be found (Morris et al. 2005), Osterwalder et al. (2005) provide the following definition: "A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams."

According to Gordijn et al. (2005), in literature, the notion of 'business model' is interpreted in the following ways: (1) as a taxonomy (such as e-shops, malls, auctions) and (2) as a conceptual model of the way we do business. Taxonomies enumerate a finite number of BM types, e.g. (Bambury 1998; Timmers 1998; Weill & Vitale 2002), while a conceptualization of 'business model' describes a reference model, allowing to describe an infinite number of BMs, e.g., (Amit & Zott 2001; Gordijn & Akkermans 2003; Mahadevan 2000; Weill & Vitale 2002).

Examples of BM conceptualizations, or 'ontologies' (Gruber 1993), are REA, e3-value, and BMO (Andersson et al. 2006), of which BMO is the ontology that is proposed by Osterwalder et al. (2005). Andersson et al. (2006) state that BMO has the widest scope. For that reason, the BMO ontology will be used in this study as an exemplary conceptualization, to be able to relate the BM concept to the BC concept. Table 1 shows the nine BM building blocks (2005).

Table 1: Nine business model building blocks, adopted from (Osterwalder et al. 2005)

Business Model Building Block	Description
Value Proposition	Gives an overall view of a company's bundle of products and services.
Target Customer	Describes the segments of customers a company wants to offer value to.
Distribution Channel	Describes the various means of the company to get in touch with its customers.
Relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Value Configuration	Describes the arrangement of activities and resources.
Core Competency	Outlines the competencies necessary to execute the company's business model.
Partner Network	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value.
Cost Structure	Sums up the monetary consequences of the means employed in the business model.
Revenue Model	Describes the way a company makes money through a variety of revenue flows.

2.2 Business cases

A BC is a recommendation to decision makers to take a particular course of action for the organisation, supported by an analysis of benefits, costs and risks (...), with an explanation of how it can best be implemented (Gambles 2009). It documents the relevant facts and situational analysis, key metrics, financial analysis, allows different projects with different goals to be compared and contrasted, and serves as a communication tool (Gliedman et al. 2004). BCs can be developed for any type of investment or project, including the investment in the extension of a company's product and service portfolio. Such BCs may be termed 'provider perspective BCs' as the resulting products are then sold to customers who may use 'customer perspective BCs' to evaluate their investment. BCs commonly appear as spreadsheets, sometimes accompanied by presentations or explanatory documents. They may be presented by the project leader (BC 'owner' or 'champion') to senior management, which is responsible for prioritizing BCs and making investment decisions. This way, the BC can be used to decide about investment before project execution ('ex-ante'), to evaluate progress during project execution, and to determine to which extent the proposed value of the investment has been realized after project execution ('ex-post') (J. Ward et al. 1996).

There are many authors who describe the components of a BC, e.g., (Cardin et al. 2007; Gliedman et al. 2004). Although a large variety of components can be included, the common denominator is a set of criteria to evaluate the proposed investment. Those criteria are generally classified as benefits, costs, and risks. To support decision making, a value needs to be assigned to each criterion. The value expresses the estimated future situation, in an absolute manner, or relative to the status quo.

The value can be qualitative, quantitative, financial, or non-financial. To estimate the value, a wide range of methods can be applied, such as benchmarking and pilot projects (J. Ward et al. 2008). With some exceptions (Ross & Beath 2002; J. Ward et al. 2008), the term BC is infrequently used in literature. Rather, scientists study 'information systems (investment) evaluation'. Farbey et al. (1999a, p.205) define that "as a process that takes place at different points in time or continuously, for searching for and making explicit, quantitatively or qualitatively, all impacts of an IS project".

2.3 Business model/case dynamics

With a few exceptions (Al-Debei & Avison 2010; Ian MacInnes 2005; Vaccaro & Cohn 2004), most literature has taken a static perspective on business models (Lindner et al. 2010). They are used to describe the value-creating logic of organizations at a certain moment in time. Hereby the implicit assumption is that business models remain steady over time, and that choices are rarely adjusted. However, in reality business models do not persist forever. Organizations often have to review their business models in order to keep in line with changing environments (Afuah & C. Tucci 2003). As a result, de Reuver et al. (2007) argue that business models have to keep up with external changes during all phases from development to exploitation.

Johnson et al. (2008) describe 'business model innovation' and five strategic circumstances that often require business model change:

- The opportunity to address through disruptive innovation the needs of large groups of potential customers who are shut out of a market entirely because existing solutions are too expensive or complicated for them.
- The opportunity to capitalize on a brand new technology by wrapping a new business model around it, or the opportunity to leverage a tested technology by bringing it to a whole new market.
- The opportunity to bring a 'job-to-be-done' focus where one does not yet exist.
- The need to fend off low-end disrupters.
- The need to respond to a shifting basis of competition.

In a similar way, Weiner et al. (2010) mention strategy, market, technology and regulatory influences on the BM. Moreover, the 'hype cycle phase' can be considered as an influencing factor (Fenn & Raskino 2008).

As it takes a tremendous amount of time and effort to realize a BM, it is common sense that a BM, although never completely static, is used for a longer period of time (Demil & Lecocq 2010). This understanding is not as common in the area of BCs, where many companies only use BCs prior to investment (J. Ward et al. 2008), rather than using them as a project realization and evaluation tool. However, some authors understand that a BC can also be useful after the initial investment decision and argue for long time use and organizational learning (Farbey, Land & Targett 1999b; J. Ward et al. 1996).

When a BC is used over a longer period of time, the BC (i.e., the project which the BC represents) becomes subject to similar influences like BMs. E.g., due to changes on the market, the expected revenue for a certain product for which the BC was developed, may start to decline. In addition to such external influences, BCs are subject to company internal factors, among which user involvement, project management, implementation, communication and corporate understanding (Farbey et al. 1993).

An illustrative example for BM/BC dynamics can be drawn from mergers and acquisitions (M&A), where heterogeneous BMs and BCs need to be aligned. Thus, this study will present concepts in that context.

3. Business Models and Business Cases

3.1 Similarities between business models and business cases

According to Brews and Tucci (2003), BM implementation and management include the "translation" of the BM as a plan into more concrete elements, such as a business structure (e.g., departments, units, human resources), business processes (e.g., workflows, responsibilities), and infrastructure and systems (e.g., buildings, ICT). This study assumes that a BC can be seen as a BM implementation,

which raises the question what they have in common. To provide an initial answer, the BM and BC concepts need to be decomposed. Conceptualizations as described in section 2.1 and 2.2 may be used. The BM concept can be decomposed in its nine building blocks, and the BC concept can be seen as a set of criteria for evaluation, possibly classified as benefits, costs, risks. In Table 2, for each of the BM building blocks, some examples of common BC evaluation criteria from the domain of information systems (T.-Y. Chou et al. 2006) are presented.

As a BC can theoretically contain any criterion, a BC does not necessarily contain implementations of all BM building blocks. However, on the basis of Table 2 one could argue that there are many overlaps between the BM and BC concepts. In addition to the similarities between BM and BC, there are differences. For example, BCs often aim to improve 'competitive advantage', while Osterwalder et al. (2005) make the following claim about the BM concept: "We excluded all elements related to competition and to business model implementation, which we understand as related to the business model but not as internal part of it." Other common BC criteria that may not be considered as a part of the BM are strategic alignment, flexibility, and risk. Rather than being explicitly part of the BM, these criteria may be seen as properties of the BM as a whole, or as meta-properties of each of the BM building blocks.

Table 2: BM building blocks and related IS-specific BC evaluation criteria

Business Model	Business Case
Value Proposition	A BC can be developed and maintained for each of the company's products and services. The value proposition then defines the set and scope of BCs. A BC may also be developed to change or extend the company's value proposition. A portfolio approach may be used to help management evaluate the relative importance of BCs (J. M. Ward 1990). Examples of related IS evaluation criteria are: 'Improved product quality' (Irani 2002) 'Provides better products or services to customers' (Mirani & Lederer 1998)
Target Customer	Provider perspective BCs describe market segments and customer needs. 'Improved market share' (Irani 2002) 'Provides new products or services to customers' (Mirani & Lederer 1998)
Distribution Channel	BCs describe means to realize the foreseen benefits. Provider perspective BCs may therefore describe distribution channels. Each channel may incur certain cost and revenue streams. 'Reduced delivery lead times', 'Improved product traceability' (Irani 2002)
Relationship	A provider perspective BC could describe this, often as part of the intangible/strategic benefits. 'Improved customer loyalty' (T.-Y. Chou et al. 2006) 'Improves customer relations' (Mirani & Lederer 1998)
Value Configuration	The BC describes activities and resources as part of the benefits realization plan. The investment in one specific activity or resource could also be the goal of the BC. BCs may be infeasible due to a lack of resources. 'Labour savings' (Ryan & Harrison 2000) 'Reduced inventory' (Jones & Beatty 1998) 'Enhances employee productivity or business efficiency' (Mirani & Lederer 1998)
Core Competency	Responsible persons or required competencies may be described in the BC as part of the benefits realization plan. 'Whether the CEO has IT knowledge', 'Experience in using IS', 'Skill of IT staff' (T.-Y. Chou et al. 2006) 'Probability of project completion' (Bacon 1992; Escobar-Perez 1998) 'Leader in new technology' (Irani 2002) 'Enables focus on core in-house operations' (Mcauley et al. 2002)
Partner Network	May be described as part of the realization plan. Can be described for the make/buy/partner decision. 'Ally with partner', 'Improved trading partner relations' (T.-Y. Chou et al. 2006) 'Helps establish useful linkages with other organizations' (Mirani & Lederer 1998)
Cost Structure	A BC contains a cost structure or 'cash flow analysis'. The cost structure in the BM may define upper and lower bounds for the cash flow analysis in the BC. The cost structure may get less attention when it is already certain that the investment needs to be made (Joshi & Pant 2008). 'Hardware cost', 'Software cost', 'Implementation cost', 'Maintenance cost', 'Consultant cost', 'Reduced inventory' (T.-Y. Chou et al. 2006) 'Save money by reducing…' (Mirani & Lederer 1998)

Revenue Model	A cash flow analysis is part of a provider perspective BC. The BM may set benchmarks for BCs, e.g., the minimum level of ROI (Return on Investment). 'Improved cash flow' (Jones & Beatty 1998) 'Net present value' (Bacon 1992; Escobar-Perez 1998) 'Internal rate of return' (Bacon 1992; Escobar-Perez 1998)

3.2 Business models affecting business cases

The similarities between BM and BC constitute a static view on the relationship between the two concepts. This static view can be extended with a dynamic view, by analyzing the influence of a change in the BM on BCs and vice versa. Assuming that an M&A usually affects many or all properties of a BM, the challenge is to identify how these changes impact the various BCs of the participating companies. Though the impact heavily depends on the nature and purpose of each BC, Table 3 presents a fictional example of change of each BM building block, as well as the associated impacts on the BCs. To ease the understanding of the relationship, the impact is discussed for each BM building block, every time assuming a change of that building block only while keeping all other building blocks fixed (*ceteris paribus*). The examples apply to fictional companies A and B, which are merged into company C, thereby also merging their BMs. Thus, the properties of company C's BM building blocks have transformed compared to the previous BM building blocks of company A and B.

Table 3: Examples of BM change affecting BCs

Business Model Building Block (Examples for Change)	**Potential impacts on business cases**
Value Proposition: Company A has a BC for the development of a new product, which is already part of company B's portfolio. Thus, company C's product portfolio contains a redundant product.	Benefits: Decrease if one product attracts the revenues of the other one (cannibalization effects). Costs: Decrease due to company B's experience in this area (e.g., some mistakes in development can be avoided).
Target Customer: Company A has a BC for a product that is supposed to address a customer segment which so far has only been focused on by company B. Company C can exploit this customer segment with products from both former companies.	Benefits: Increase due to additional target customers for company A. Costs: Decrease due to existing target customer awareness of company B (e.g., investments in promotion for this target group can be shared by the different products).
Distribution Channel: Company A has a distribution channel that B does not yet have, but it makes sense to use it for a specific product. In company C, A's distribution channel can also be used for B's products.	Benefits: Increase due to additional distribution channels available for company B. Costs: Increase due to additional costs for the usage of the additional distribution channel (e.g., logistics costs).
Relationship: Company A has a BC for a product that customers are not loyal to. In company C, B's strong branding, relationship strategy, and customer loyalty can be applied to company A's product.	Benefits: Increase of company A's sales as customer loyalty rises with the help of company B. Costs: Increase as company A needs to implement B's strategy. For instance, they might spend additional time with customers to build trust.
Value Configuration: Company A has a BC for product development. Company B has resources which could be used for that development. In company C those resources can be used.	Benefits: Increase of company A's product development efficiency as capabilities of company B's resources can be used. Costs: Increase due to costs for additional resources (e.g., more alignments needed with all stakeholders).
Core Competency: Company A and company B have different core competencies. In company C B's core competencies may be applied to company A's BCs, if applicable.	Benefits: Increase of company A's BCs due to positive impact of additional core competencies. Costs: Increase as firm A's employees need to be trained in B's core competencies.
Partner Network: Company A has a BC for a product that does not reflect company B's partner network. In company C, B's partner network can be used for company A's product.	Benefits: Increase of company A's BC due to strengths of company B's partner network. Costs: Increase due to costs for interacting with more partners (e.g., communication efforts).

Cost Structure: Company A has a BC for a product that is based on off-shoring. In company C the strategy is changed from off-shoring to near-shoring. The associated cost model in company C is hence different.	Benefits: n/a Costs: Change due to changing cost structures (e.g., changes in the wage level and the exchange rates will impact the cost structure of the BC).
Business Model Building Block (Examples for Change)	**Potential impacts on business cases**
Revenue Model: Company A has a BC for a product that is based on upfront license fees. In company C the revenue model is changed from license fees to 'pay per usage'.	Benefits: Change in cash flows due to changing revenue structures (e.g., switch from license-based payment to pay per usage results in short-term revenue losses and contributes to more regular cash flows in the long-run). Costs: n/a

3.3 Business cases affecting business models

Similar to a BM change affecting BCs, BCs may affect the BM. There are at least two ways in which this is possible. First, the analysis of existing BCs can provide insight in the better performing parts of the business. When merging two companies, the goal is to combine the best of both businesses, but potential synergies are hard to predict and achieve. However, BCs can be used as a basis for synergy analysis on a more operational level. By comparing BCs from both companies, benchmarks and performance rankings can be derived. Based on those rankings, further analyses can be started. While the well performing BCs can identify best practices, the lesser ones can identify those practices that should not be continued. The conclusions from the BC analyses may then trigger an adaptation of the BM.

The second type of effect of BCs on a BM occurs when using BCs to simulate the effects of a certain BM before the BM is implemented in the organization. As Osterwalder et al. (2005) put it: "Simulating and testing business models is a manager's dream." For example, in the post-M&A phase the resulting BM is usually subject to analyses and discussions. Often some alternatives are proposed and a decision needs to be made. E.g., if redundant products exist in terms of the BM value configuration, a decision needs to be made if one product should be dropped for the sake of the other or if both products will remain in the portfolio. For example, in PeopleSoft's takeover by Oracle, the redundant PeopleSoft products remained in the portfolio (Buxmann et al. 2008). Table 4 presents some exemplary conclusions that may be derived from BC analysis and may trigger BM adaptation.

Table 4: Examples of BC analysis affecting the BM

Business Model Building Blocks	Exemplary conclusions due to BC analysis
Value Proposition	A certain product area offers high ROIs.
Target Customer	A particular target customer segment creates strong revenues.
Distribution Channel	Some distribution channels are more efficient, i.e. create the same revenue with less costs.
Relationship	A particular way how to deal with customers is superior to others.
Value Configuration	Certain activities and resources outperform other ones in the internal value chain.
Core Competency	A specific competency of involved colleagues (such as very intensive relationship to the customers) drives performance.
Partner Network	One dedicated partnership supports a strong performance of a BC.
Cost Structure	Offshoring parts of product development increases overall costs.
Revenue Model	Pay-per-use contracts yield better returns on the long run than initial license-based fees.

4. Implications

A better understanding of the static and dynamic relationship between BM and BC will allow companies to become more agile, if they are able to continuously align BM and BCs. This section describes some managerial and technical implications of this understanding, and explains an approach for continuous alignment, which is visualized in Figure 1.

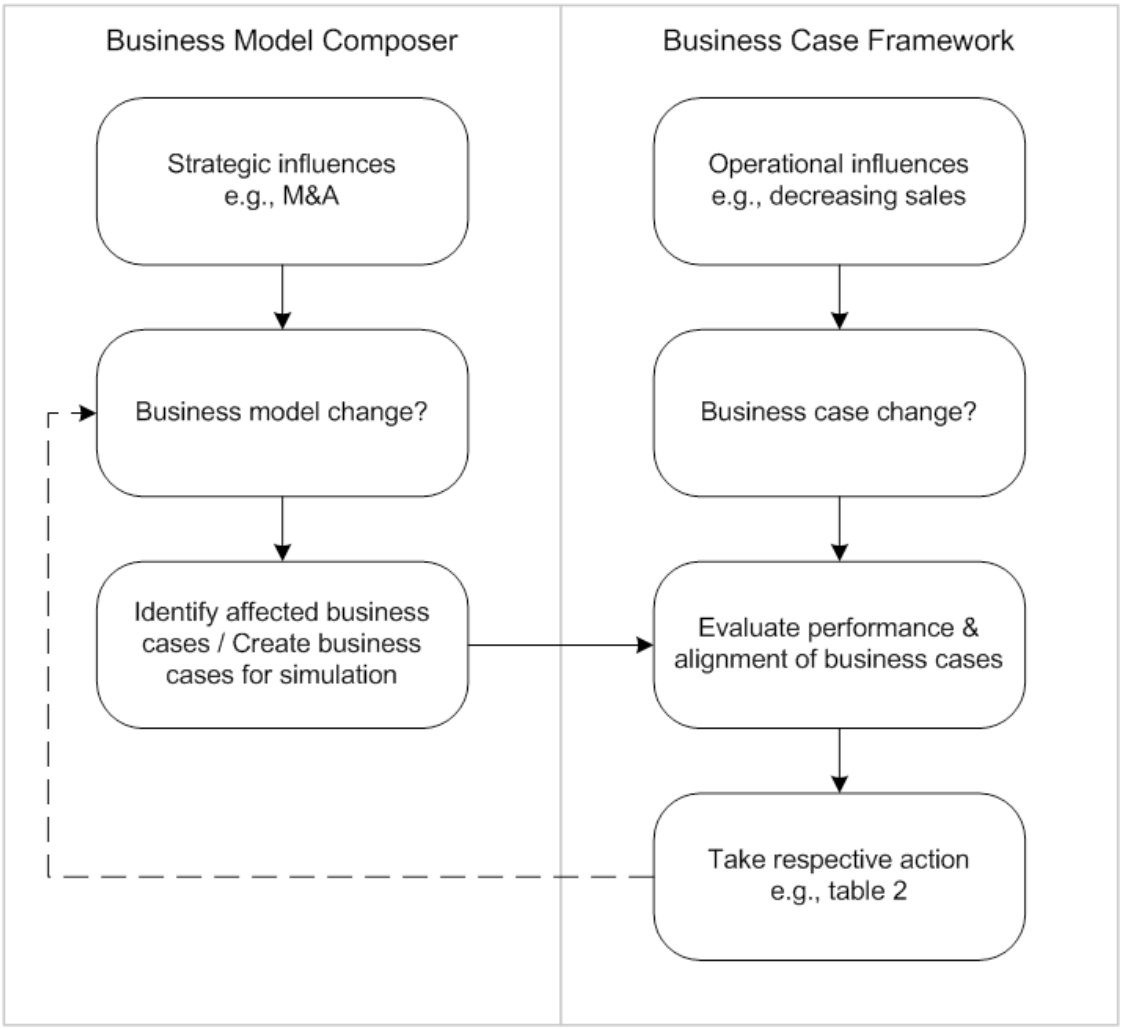

Figure 1: Approach for the alignment of BM and BCs

4.1 Managerial implications

There are at least three different triggers for the BM-BC alignment process. The first is a strategic influence, such as an M&A. Most likely, the M&A will cause a change of the BM. If so, the BCs that are affected by the changed BM need to be identified. Therefore, BCs could be 'tagged' with the related BM building blocks. For instance, while BCs for product development are strongly related to all BM building blocks, BCs for internal projects may not be related to BM building blocks such as the distribution channel. Next, the performance of the affected BCs and the alignment of the BCs with the BM need to be evaluated. Table 5 provides four high level recommendations on possible actions that could be taken: (1) When the performance of the BC is high and it is well-aligned with the changed BM, the BC (i.e., the projects associated with the BC) should be maintained. (2) When the performance of the BC is low, but it is well-aligned with the changed BM, it should be determined whether the BC may be altered to improve performance. (3) When the performance of the BC is high but it is not aligned with the changed BM, the question arises whether it will be possible to maintain the BC's performance under the new BM. (4) Finally, when the BC is not performing well and is not aligned with the BM, the BC (and the projects associated with the BC) should probably be stopped.

Table 5: Possible actions after a BM or BC change

	Good alignment	Bad alignment
High performance	Keep/expand BC	After BM change: will performance remain? After BC change: redesign BM to focus on this area?
Low performance	Can we improve the performance of the BC?	Kill projects associated with BC

The second trigger for BM-BC alignment is when management wants to simulate a proposed BM. Existing affected BCs need to be identified and re-evaluated, but new BCs may also be developed. As it is a simulation and not an implementation of a BM, the actions in Table 5 only need to be considered theoretically.

The third trigger occurs when management notices that a BC has reached a critical level. E.g., due to unexpected declining sales revenue, the ROI (return on investment) has reached the level of 150%, which is the minimum allowed by senior management. In such a case, critical BCs need to be re-evaluated on their performance and alignment with the BM. The conclusions are similar to those from when a BM change caused the BC re-evaluation, apart from the case of a high performing BC which is not aligned with the BM. In that case, the question needs to be asked whether the BM should be adapted to focus more on such BCs. If so, the dotted arrow in Figure 1 may be followed and the BM will be changed based on the lessons learned from the changed BCs. The changed BM may in turn affect other BCs, which would then need to be re-evaluated, etc. This iterative process continues until management is satisfied with the BM and BCs no longer change in critical ways.

The presented relationships between BM and BC offer many opportunities. By integrating these two concepts, the chasm between strategic management and tactical/operational implementation can be crossed. For instance, the presented concept can support the business-IT alignment of a post-M&A company (Osterwalder & Pigneur 2003). Osterwalder et al. (2005) already 'speculated' that the BM could play an important role in deciding which IT investments are needed for future strategic agility. They propose to cross the nine BM building blocks with Weill and Vitale's (2002) conceptualization of IT infrastructure services. Similarly, the BM building blocks may be crossed with the BC model, as many IT investments are anyway reflected in BCs. Using the BM-BC relationship as a basis for analysis it could be possible to achieve a better post-M&A alignment between the BM of a company and the IT services provided by the IS department.

4.2 Technical implications

In addition to management support and an organizational implementation, the continuous alignment of BM and BC can benefit from two complementary software tools: a business case framework (BCF) and a business model composer (BMC).

The BCF is used to develop and monitor BCs. First of all, it is a collection of BCs, which should use similar structures and evaluation criteria, in order to make the BCs comparable and their contents suitable for aggregation. Second, the BCF may be connected to business systems, such as an enterprise resource planning system (ERP), receiving up-to-date information, and keeping track of critical levels on selected indicators, e.g., ROI, costs, number of customers, average processing time, etc. When a critical level is reached, i.e., the BC is under- or overperforming, management will be notified.

The BMC is used as a strategic decision support tool to (re)design, monitor and simulate BMs, based on a BM conceptualization, such as BMO (Alexander Osterwalder et al. 2005). It supports the visualization of the business model and the relationship among the various BM building blocks. It allows for the monitoring of key performance indicators and the adaptation of the BM based on those. Finally, the BMC can support the dissemination of the BM (changes) and the cascading of the BM to more operational levels, e.g., by (semi-)automatically configuring IT systems and service compositions managing and controlling business processes.

In spite of these more or less common and useful features of BCFs and BMCs, their full potential will only be reached when they are connected and benefit from each other. For example, when considering a BM adaptation, one over- or under-performing BC will most likely not be sufficient evidence. Rather, the entire portfolio of BCs needs to be considered. Unless a software tool can provide adequate aggregates of values in the BCs, decisions will be hard to make. Another example of complementary use of the tools is when the effects of BM changes on BCs are measured and recorded. When considering future BM changes, past effects on BCs may be taken into account.

5. Conclusion

The agility of companies can be increased when implementing merged or changed business models in the organization and when using business cases to determine if it is time to change the business

model. This study clarifies the relationship between business models, as an implementation of a company's strategy, and business cases, as an abstraction of a company's operations. The relationship is analyzed from a static as well as a dynamic point of view by means of inductive reasoning and literature review. The main contribution of this paper is and analysis of the relationship between two common concepts, which is often implicitly used and related in practice, but which had not been described explicitly in literature. Future work should test the validity of the proposed relationship in practice, e.g., in specific industries and in the context of different influencing factors such as M&A. Moreover, it may go into more depth on how managers can implement a continuous BM-BC alignment process in their companies and how software tools can be designed to support this process.

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