EXPLORING THE MANAGEMENT OF MULTIPLE BUSINESS MODELS IN ONE COMPANY

Matilda Höök[1] and Lars Stehn

Department of Civil, Environmental and Natural resources engineering, Division of Structural and Construction Engineering-Timber Structures, Luleå University of Technology, Sweden

Increased demands for responsiveness and efficiency have led specialized Swedish manufacturing firms and contractors to adopt new production and product strategies. Some firms have adopted multiple business models (BMs) concurrently in order to be competitive in the modern market. A BM can be seen as a conceptual blueprint of a company's money earning logic, and can act as a guiding instrument towards competitiveness. It is known that companies trying to compete with both low-cost and differentiation BMs face challenges such as conflicting value chains and straddling costs. However, further understanding of various aspects of BMs, their implementation and effects (particularly in the construction industry) is required. Thus, the aim of this paper is to explore BM management in a manufacturing firm in the Swedish construction industry, which has adopted evolving BMs (some concurrently) in recent years. The results, based on analysis of long-term (15 years) process data, indicate that strategic events and decisions influence the management of parallel BMs, and that strategic events are important for competitiveness. They also show that successful balancing of concurrent BMs can yield synergistic benefits, such as resource flexibility and lower vulnerability in the construction market. Due to its exploratory nature, this work serves as a first step towards a wider and more general understanding of the management of multiple BMs in construction firms.

Keywords: business model, corporate strategy, longitudinal study.

INTRODUCTION

The development and use of appropriate business models (BMs) can offer companies significant strategic advantages (Zott and Amit 2008). Similarly, it has been argued that in practise BMs are often poorly understood, and that companies often fail commercially due to a lack of attention to their BMs (Teece 2010). There are differing views in the literature regarding the constitutive elements of a BM (Morris *et al*. 2005, Osterwalder and Pigneur 2005), but the creation and delivery of value are commonly held aspects (e.g. Teece 2010, Linder and Cantrell 2000). A BM is defined in this study, following Osterwalder and Pigneur (2005) and Zott and Amit (2008), as the mechanism(s) whereby a company's strategy is translated into a blueprint for the company's logic for earning money.

The aim of this paper is to explore the evolution, over 15 years, of a manufacturing firm in the Swedish construction industry, analysing the strategic changes that occurred (and decisions taken) from a BM management perspective. During the focal time period the company applied between one and four BMs in parallel, as a consequence of both intentional strategic decisions and events. From a strategic

[1] Matilda.Hook@ltu.se

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viewpoint the development of existing or emergent BMs should aim to align these models to business strategy and the value chain concept (Porter 1985), and thus include value systems and strategic positioning (Porter 1996). This view is elaborated by Casadesus-Masanell and Ricart (2010), who define a BM as a reflection of the firms' realized strategy. However, Stähler (2002) and Magretta (2002) stress that the concept of BMs, as opposed to strategy, does not include performance and competition. It is therefore important to determine to what degree the case company's changes in BMs can be seen as a reflection of the company's strategy, effects (intentional and unintentional) of strategic decisions from a BM perspective, and whether it is possible to relate strategy, BMs and performance. To investigate these relationships the presented analysis has the following three main objectives, to:

5. Identify major aspects and elements of BMs.
6. Examine changes in the BM constructs through the notion of management of a portfolio of parallel BMs within the same company.
7. Empirically identify how strategic choices and decisions affect BM management and the performance of the company.

The first two objectives are approached through deductive summarization of previous research on aspects of BM constructs and management, both generally and in the construction sector specifically. The summarized concepts provide a theoretical grounding, which is used to address the third objective.

BUSINESS MODEL CONSTRUCTS

Some authors have suggested that the concept of BMs has no place in economic theory, strategic studies or marketing science (for example Zott *et al*. 2011). However, Teece (2010) emphasizes that BMs have obvious importance in interdisciplinary dimensions that are frequently mentioned but rarely analysed. Furthermore, despite burgeoning literature on BMs within business and management fields generally, there is little understanding of BMs applied in the building and construction sector, and their effects (Pan and Goodier 2012). In two recent case studies BMs were examined in off-site house construction in the UK (Pan and Goodier 2012) and industrialized house construction in Sweden (Brege *et al*. 2014). Both papers review and discuss the BM concept in business, strategy and management theoretical frameworks. In their review Brege *et al*. (2014) outline how a BM construct describes the alignment between the environment, a company's offerings, its internal and external resource base and activity.

In their comprehensive study Morris *et al*. (2005) found that the most frequently cited elements of BMs (in any industry) are: value offering, economic models, customer interface/relationships, partner networks/roles, internal infrastructure/connected activities and target markets. However, BMs are often handled as meta models in the literature, reflecting a view that it is generally difficult for companies to implement them operationally, although all companies employ BMs, either explicitly or implicitly. Four main elements described by Osterwalder and Pigneur (2005) were recognized in the deductive summary of previous research (Objective 1), and used in the BM construct employed in this study. These also fall within the frameworks of both Brege *et al*. (2014) and Morris *et al*. (2005). The four elements are briefly described below.

Product

Product is defined as value, for both the customer and company, and can be seen as a measure of what needs are met, and how they are met, by a specific product or service.

Customer interface

Customer interface refers to channels used to reach and communicate with specified customers, and the company's relationships with those customers.

Infrastructure management

Infrastructure management refers to the activities and strategies involved in delivering value to the customer and the company.

Financial aspects

Financial aspects are the costs of the key resources required for the BMs, and commercial benefits associated with the BMs through the creation of value for both the company and customer.

MANAGEMENT OF A PORTFOLIO OF BUSINESS MODELS

In the customer-interface construct of Osterwalder and Pigneur (2005), a key aspect of multiple BM management is that different customer segments should be managed by different BMs, to avoid conflict. A common solution to this problem found in the literature is to house different BMs in separate business units (e.g. Christensen 1997, Porter 1986). However, such solution is not without risk, as more recent research has shown. Day *et al*. (2001) argue that strict separation between BMs can prevent certain ventures from obtaining valuable resources. Markides and Charitou (2004) identify further potential conflicts, such as customer base cannibalization and undermining of the existing distribution network.

Alternatives to separation have emerged, notably Markides and Charitou (2004) point out that firms must achieve a balance between distancing parallel BMs so that they do not suffocate each other, and keeping them close enough to exploit synergies. Ghoshal and Gratton (2003) advocate the creation of incentives that encourage cooperation among the separate units, while Govindarajan and Trimble (2005) propose systems that allow parent and separate units to cooperate while maintaining their independence, and O'Reilly and Tushman (2004) propose the integration of separate units into firms' existing management hierarchy. Sabatier *et al*. (2010) propose the use of a BM portfolio as a strategic tool that can help to improve the coordination of a firm's resources and capabilities. They present case studies on the use of different BMs by small biotechnology firms illustrating two generic strategies, named core competence extension (CCE) to enlarge markets and address additional customers, and core competence redeployment (CCR) to serve new markets with existing core competence. Thus, adopting a portfolio of multiple concurrent BMs theoretically permits a firm to diversify within its operational sector and extend its operational range (Sabatier *et al*. 2010).

A CONCEPTUAL FRAMEWORK

The conceptual framework of the concurrent management of multiple BMs applied here is based on the above literature review. The management of multiple BMs is a multi-layered process, and a schematic of the conceptual framework proposed to link these layers is presented in Figure 1. If the BM is seen as a reflection of a firm's

strategy, as proposed by Casadesus-Masanell and Ricart (2010), Osterwalder and Pigneur (2005) and Zott and Amitt (2008), it is important to understand how existing and/or emergent BMs are prioritized over time. Strategic decisions and events might cause unintentional or intentional changes in BMs, leading to strains or synergistic effects within and between the different BMs (Stähler 2002, Magretta 2002). It is also necessary to understand if and how activities are employed with respect to CCE to enlarge markets at different value chain stages or reposition offers towards other markets, and CCR to serve new markets or completely new offers (Sabatier *et al*. 2010). Lastly, it is important to understand how integrating mechanisms (IMs) are used to link separate units in order to balance the BM portfolio, as stated by O'Reilly and Tushman (2004).

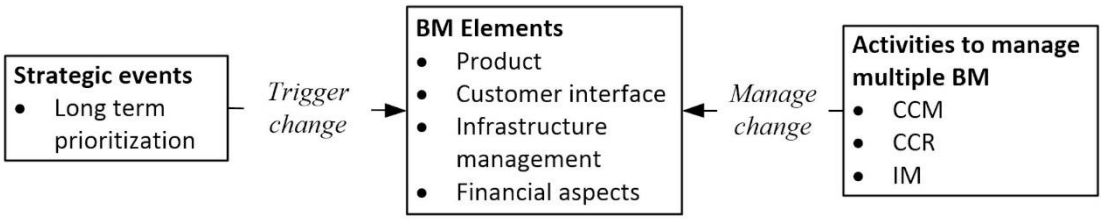

Figure 1: The conceptual framework

METHODS

This research is based on an explorative longitudinal case study performed within one company. The overall aim is to increase understanding of the management strategies adopted by the case company with regards to its handling of existing and emergent BMs, with a long-term perspective. A qualitative approach was applied to capture the business context more completely, in terms of apparent phenomena, that is currently possible using quantitative methodology (Yin 1994, Cronbach 1975). The particular company was selected because it had three particularly relevant characteristics. The company is a typical manufacturer in the construction industry, where volume production has to be managed together with various customised building projects. This leads to conflicts, discussed in the theory section, related to several concurrent BMs. The case company also expressed willingness to participate in the research to assist its efforts to enhance competitiveness by combining volume production with customised building projects. Furthermore the first author has an affiliation with the company, facilitating access to information regarding key historical and current processes, and financial data.

In order to validate the analysis and findings, data were gathered from multiple sources. Firstly documents and management protocols from 1997 to 2013, together with financial data, were examined to identify specific strategic events and decisions taken by the company board. Five workshops were subsequently held with the in-house management, in which different phases of the company's 15-year development were discussed to understand how events and decisions have affected the company. All workshops focused on the conceptual framework, including open questions related to products, customer interfaces, infrastructure management and financial aspects during different phases. Finally, structured interviews, also based on the conceptual framework, were held with the company's product manager, production manager, purchasing manager and CFO, all of whom have been working in the company since 1997.

Visual process mapping was used to identify patterns in the data including phases, events and decisions, and to understand how they affected BMs over time. This was done, using the conceptual framework displayed in Figure 1, in three parallel efforts to:

8. Identify the constructs and elements of the BMs intentionally and unintentionally adopted, based on the framework proposed by Osterwalder and Pigneur (2005).
9. Identify the long-term prioritizing of BMs through strategic decisions. Changes in these priorities are used to define different phases applied in the empirical description and illustrated in Figure 2.
10. Evaluate the management of concurrent and multiple BMs in a retro perspective to identify CCE, CCR and IM. Results of this evaluation are also summarized in Figure 2.

Visual process mapping provides only moderate generality, as the underlying elements are highly variable and some may not be present in specific cases. However, Langley (1999) argues that it provides opportunities to compare cases and identify common sequences of events and progressions, allowing assessment of the transferability of findings to other situations.

EMPIRICAL DESCRIPTION OF IDENTIFIED CHANGES SN STUDIED PROCESSES

Results obtained from examining relevant documents, workshops and interviews concerning the case company's strategic decisions, associated events, BMs and performance during four identified phases are summarized and visually mapped in Figure 2. Return On Capital Employed (ROCE) is used as an economic indicator to identify how strategic decisions affected the case company's performance in each of the phases. It should be noted that ROCE should be used cautiously in this context, as it may be influenced by underlying business and economic factors.

Phase 1

In 1997 the company focused on producing standardized products in a broad product set at a low price. Major customers were industrial house builders, and the company only produced through direct customer orders, using two old production lines and a small administrative unit, thereby keeping costs at a moderate level. The ROCE was positive with a relatively low turnover, sales increased by about 36% per year and earnings approximately doubled over six years. Much of the profit increase was attributed to greater exploitation of current production capacity with the same fixed costs.

Phase 2

In 2003 a new owner changed focus from the production of standardized products to their customization. The company could then offer products with higher initial prices through a higher degree of prefabrication. The organization was expanded, as the offered products needed higher technical expertise to provide support to its customers. The company also invested in a modern saw line to cope with the customization. For three years sales increased by 60% per year on average, but profits did not increase at the same rate. During this phase, the company developed its own building system, and target customers were existing single-family house manufacturers. To demonstrate this new building system to the market the company engaged in a major construction

project. One new resource, a salesman with the sole target of increasing sales of the building system, was brought in. No other specific resources were secured to handle the business and operational logistics of housing construction. During development of the building system the company also decided to invest in an additional plant for customization of the standard product.

Phase 3

Shortly after the investment in phase 2 another new company board issued new directives and decided to invest in a new production line for standard products to replace the two older production lines. The in-house leaders were still oriented towards customer order production and customization when the new production line was designed. The new board hastened the development of the new production line, but as in phase 2 (for the building system development) the company's core business resources were utilized to develop its specifications. To cover the investment, the board decided to expand into large-scale export markets.

Due to the combined stresses imposed by large-volume customer demands for low prices, the complexities of maintaining a production line designed for customer order production, and the ongoing development of the building system the ROCE dived. Problems with the new production line emerged, and eventually the company decided to replace the newly installed line with another brand new line, completely adapted for volume production. The new plant worked much more efficiently, but the board eventually decided to withdraw from the large-scale volume export market, because the venture had been unprofitable due to the price cuts made to enter it. Furthermore, at this point customers demanded small batches, and shifting between products took a long time with much material wastage.

Phase 4

In 2011 the company board decided to implement a Lean production philosophy. Slowly the company started to change the production approach to maintenance of small stock and used customer order management to minimize waste and costs, while simultaneously implementing practices to increase production flexibility. The organization also became aware of the parallel BMs being applied, and the board decided to split the company into two distinct BMs, one focused on production of standard products and the other focused on customization. The two parts were separated financially, but the company also saw synergistic benefits of keeping them within the same company. Specific resources and development work were shared, allowing the company to respond flexibly to shifts in demand for quantities and types of products by sharing resources between the two parts operating under different BMs.

MANAGING MULTIPLE BUSINESS MODELS

Seven observed events (ownership changes and strategic decisions) triggered changes in BMs and created four distinct phases in the 15-year study period, as described above. As illustrated in Figure 2, the key decisions were to: (I) develop the building system, (II) enter new export volume markets, (III) withdraw from these markets, (IV) implement Lean production philosophy, and (V) divide the company into two distinct BMs. Four BMs that were applied during the period can be identified (Figure 2), designated 1-4, and a sub-class (1b), regarded as a refinement of BM 1.

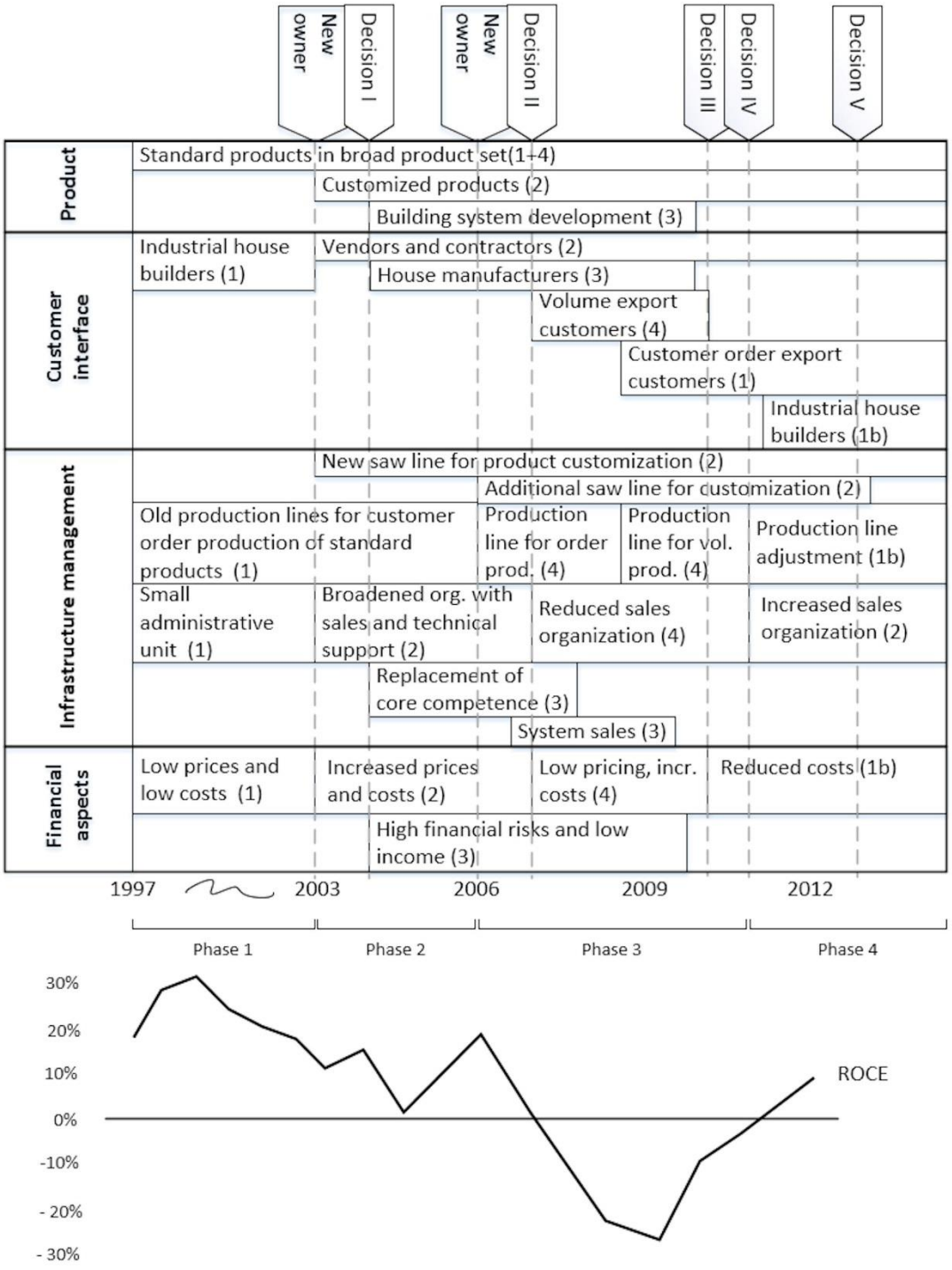

Figure 2: Longitudinal changes related to shifts in business models and ROCE

Analysis of the acquired data within the conceptual framework shows that the company initially had a strong focus on value during phase 1 with a targeted customer base, appropriate resources and high BM awareness. However, during phases 2 and 3 the company unconsciously attempted to apply parallel BMs, but failed to align them. This led to a mismatch of customer needs with resources. In phase 4 the company came to a new understanding of the reasons for the internal problems and losses of performance during phases 2 and 3, then acted to rectify previous mistakes.

From a BM perspective the four phases are quite distinct. Strategic events triggered the extension of old BMs, and unintentionally created new BMs. This is consistent

with the proposals by Casadesus-Masanell and Ricart (2010) among others, that BMs reflect firms' strategies. Signs of this unintentional management of the BM portfolio are visible in the changes in ROCE in Figure 2. The main findings, regarding synergies and interactions in the management of the BM portfolio, are further depicted in Table 1.

Table 1: Phases related to strategic triggers and activities to manage multiple BMs

	Phase 1 (BM1)	Phase 2 (BMs 1, 2, 3 and 4)	Phase 3 (BMs 1, 2, 3 and 4)	Phase 4 (BMs 1b and 2)
Long-term prioritization	Initial strategic decisions Focused marketing activities Awareness of existing BM	Awareness of BM1 and BM2 Lost focus on BM3	Unintentional new BM4 parallel to BM1-3 Split focus on BMs Lost focus on BM3	Intentional focus on BM1 (developed to BM 1b) Increased focus on BM2 Awareness of existing BMs
CCE		CCE for new market niche No CCE extension for BM3	Production and sales CCE for BM4 Decrease of sales resources for BM2	CCE in sales for BM2
CCR		CCR from BM2 to BM3	BM4 unintentionally linked to BM1 and BM2	
IM		BM1 and BM2 - tightly linked BM3 - stand-alone unit		BM1b and BM2 split with remaining synergies

The identified strategic activities (in terms of objective 3) are the allocations of resources and IMs that affected the BM management. In phases 2 and 3 decisions were clearly not taken from the perspective of multiple BM management, but rather as general strategic responses to topical market conditions. While the strategic decisions were intentional, they caused the emergence of unintentional BMs. These unintentional models (primarily BM3 and BM4 in Table 1) were not appropriately addressed, as evidenced by the lack of significant action (such as competency strengthening) to support the models and associated market positions. Consequently, BM3 was unsuccessful, a general effect of inadequate competence resources demonstrated by Sabatier *et al*. (2010). The long-term perspective of strategic events clearly shows that the need to align BMs, in order to optimize the BM3 money-earning logic, was not acknowledged or addressed. When multiple BMs were recognized in phase 4 the company decided to manage the two parts as separate units, but with integration mechanisms, in accordance with proposals by O'Reilly and Tushman (2004) and Markides and Charitou (2004).

Several management approaches inform the conceptual framework used in this research. While these concepts are all representative of BMs used in the literature, BM theory is not robust (see, for instance, Zott *et al*. 2011), thus optimal ways to combine the approaches, and their interactions, have not yet been established. Notably, several authors question the inclusion of strategy in the BM concept (e.g. Stähler 2002). Accordingly, this study shows that strategic events can (intentionally or unintentionally) trigger changes in BMs, indicating that strategy should be considered a factor that influences BMs, rather than a component of them. The empirical evidence further demonstrates that CCE, CCR and IM may all affect the management of multiple BMs. When unintentional CCE, CCR and IM became intentional at the case company, ROCE increased, indicating an increase in company performance. Clearly, further theoretical grounding of CCE, CCR and IM is required to enhance the theoretical rigour of the conceptual framework.

CONCLUSIONS

A BM is seen as a conceptual blueprint of a company's money earning logic, and can act as a guiding instrument towards competitiveness. However, the concept of BMs within the construction industry requires further theoretical development. The first two objectives of the research presented here were to identify major elements of BMs and examine change constructs using a conceptual framework based on a portfolio of BMs. Application of this conceptual framework revealed several interesting phenomena. Firstly, it showed that construction practise is insufficiently aware of BMs and consequences of BMs being unintentionally triggered by various strategic decisions or events. The framework provides a plausible explanation of the ineffective management of the case company, in terms of unintentional BMs. The influence of strategy on BMs, and its effects on parallel BM management, also becomes apparent. Finally, the framework provides a means to identify different BMs, and in conjunction with performance data (which was the third objective) reveals the importance of events and decisions for competitiveness. The results indicate that unawareness of BMs, and the importance of balancing BM portfolios, reduce management effectiveness and (thus) impairs performance.

In conjunction with empirical evidence the framework connects *"strategic"* activities to the management of a portfolio of BMs. Intentional balancing of a BM portfolio (as illustrated by phase 4 in the study) can provide synergistic benefits, such as resource flexibility and reduced vulnerability in the construction market. Owing to its exploratory nature, the results of the study provide a stepping stone for future research directed towards an understanding of construction firms' management of multiple BMs.

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REFERENCES

Brege, S, Stehn, L and Nord, T (2014) Business models in industrialized building of multi-storey houses. *"Construction Management and Economics"*, **32**(1-2), 208-226.

Casadesus-Masanell, R and Ricart, J E (2010) From strategy to business models and to tactics. *"Long Range Planning"*, **43**, 195-215.

Christensen, C M (1997) *"The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail"*. Boston: Harvard Business School Press.

Cronbach, L J (1972) *"Dependability of behavioural measurements: theory of generalizability for scores and profiles"*. New York: Wiley.

Day, J, Mang, P Y, Richter, A and Roberts, J (2001) *"The Innovative Organization: Why new ventures need more than a room of their own"*. The McKinsey Quarterly, 2(21).

Ghoshal, S and Gratton, L (2003) Integrating the Enterprise. *"Sloan Management Review"*, **44** (1), 31-38.

Govindarajan, V and Trimble, C (2005) *"Ten Rules for Strategic Innovators: From Idea to Execution"*. Boston: HBS Press.

Langley, A (1999) Strategies for theorizing from process data. *"Academy of Management Review"*, (24), 691-710.

Magretta, J (2002) Why Business Models Matter. *"Harvard Business Review"*. May, 3-8.

Mahadevan, B (2000) Business models for Internet-based e-commerce. *"California Management Review"*, **42**(4), 55– 69.

Markides, C, Charitou, C (2004) Competing with dual business models: a contingency approach.*" Academy of Management Executive"*. **18**(3), 22–36.

Morris, M, Schindehutte, M and Allen, J (2005) The entrepreneur's business model: toward a unified perspective. *"Journal of Business Research"*. **58**, 726–735.

O'Reilly, C A and Tushman, M (2004) The Ambidextrous Organization. *"Harvard Business Review"*. **82**(4), 74-81.

Osterwalder, A and Pigneur (2005) Clarifying business models: origins, present and future of the concept. *"Communications of the Association for Information Systems"*. **16**, 1-25.

Pan, W and Goodier, C (2012) House-building business models and off-site construction take-up. *"Journal of Architectural Engineering"*. **18**, 84-93.

Porter, M E (1985) How information gives you competitive advantage. *"Harvard Business Review"*. 63(4), 149-160.

Porter, M E (1996) What is strategy? *"Harvard Business Review"*. **11**, 61-78.

Sabatier, V, Mangematin, V and Rousselle, T (2010) From recipe to dinner. Business model portfolios in the European biopharmaceutical industry. *"Long Range Planning"* **43**, 431-447.

Stähler, P (2002) *"Business Models as an Unit of Analysis for Strategizing"*. Switzerland: International Workshop on Business Models, Lausanne.

Teece, D J (2010) Business models, business strategy and innovation. *"Long Range Planning"*. **43**, 172-194.

Yin, R K (1994) *"Case Study Research Design and Methods"*. 2nd ed. Sage Publications.

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

Zott, C and Amit, R, (2008) The fit between product market strategy and business model: implications for firm performance. *"Strategic Management Journal"*. **29**(1), 1–26.