**Business model innovation and strategy making nexus: evidences from a cross-industry mixed methods study**

**Abstract**

Theory discussing how to define and frame the relationship between the Strategy Making Process (SMP) and Business Model Innovation (BMI) is still incipient in the academic literature. Thus, this study aims at investigating the relationship between SMP and BMI by addressing: i) when firms engage in business model (BMI) innovation within the overall SMP; and ii) how firms design a new business model (BM) or improve their current BM within the overall SMP. The research questions are tackled by means of a mixed method research, combining: i) a quantitative survey on 138 firms involved in SMP and BMI (to understand when BM design and improvement occur); and ii) a qualitative multiple-case study focused on four firms (to address how BM design and improvement evolve). The findings empirically validate the arguments that BM design and improvement are more likely to be positioned in the strategic alternatives implementation step of the SMP, and BM is related to strategy execution; on top of this, light is shed on the inherent dynamics of the BMI process for different types of BMI.

Keywords: Business model, innovation, strategy making.

# Introduction

Business model (BM) has long been touted as an instrument to appropriate value from technological innovation (Chesbrough and Rosenbloom, 2002; Björkdahl, 2009). Currently, however, there is a growing awareness that BMs can also be the object of innovation themselves (Johnson et al., 2008; Chesbrough, 2010; Demil and Lecocq, 2010). This is the essence of BM innovation (BMI). Although academic research on BMI is still incipient, it has been gaining momentum in the last few years (Schneider and Spieth, 2013). It has been suggested that, as “a key microfundation of dynamic capabilities”, effective BMI can generate competitive advantage (Mitchell and Coles, 2003; Markides and Charitou, 2004; Chesbrough, 2010; Teece, 2010) and breed complex BMs that allow firms to pursue both exploration and exploitation strategies (Smith et al., 2010).

The perception of BMI as a strategic tool is based on the premise that BMs operate at an intermediary level between strategy and operational processes. In other words, it is suggested that a BM translates strategy into operational definitions, thus becoming a working model of a firm’s strategy (Magretta, 2002; Osterwalder et al., 2005; Casadesus-Masanell and Ricart, 2010; Teece, 2010) that also includes external stakeholders (Amit and Zott, 2001; Zott et al., 2011). However, it is not clear how exactly a new BM (or improvements to a firm’s current BM) derives from strategy (Schneider and Spieth, 2013). Contributions in this area have been traditionally limited to conceptual papers (Demil and Lecocq, 2010; Gambardella and McGahan, 2010); only recently a number of qualitative case studies has been published in an attempt to bring empirical light on the subject (Brink and Holmén, 2009; Sánchez and Ricart, 2010; Habtay, 2012; Hacklin and Wallnöfer, 2012). However, empirical results are very limited in terms of generalizability, so there is still not enough data to infer a comprehensive theory to explain how BMI relates to strategy.

In order to contribute to this stream of research, the aim of this study is to explore the relationship between the strategy making process (SMP) and business model innovation (BMI). In particular, we seek to find and answer to the following research questions: (i) RQ1: when do firms engage in business model innovation (BMI) during the strategy making process (SMP)? (ii) RQ2: how do firms innovate their business model (BMI) within the strategy making process (SMP)? In order to do so, we employ a mixed methods research strategy combining a survey on 138 companies and four detailed case studies.

The main contribution of this paper is that it offers the first large empirical-based investigation on the relationship between the strategy making process (SMP) and business model innovation (BMI). In this sense, this paper offers a quantitative testing – much needed in the field – and a theoretical extension of the current understanding about: (a) the relationship between SMP and BMI dimensions by describing the specific stages of strategy making in which each BM dimension is innovated (designed or developed) through an extensive survey and (b) the manner in which (how) BM dimensions are innovated during the SMP by analyzing empirical evidence from a multiple-case study. We also discuss practical implications for R&D managers that are concerned with how to innovate on BM during the SMP.

# Business Model conceptual framework

Business model (BM) is considered by most authors as a structured and analytical model used by a firm to create, deliver and capture customer value (Morris et al., 2005; Teece, 2010; Osterwalder et al., 2005). BMs serve a most useful purpose: to simplify the numerous variables which influence how businesses are structured and to present those in a coherent and unified form (Baden-Fuller and Morgan, 2010). BMs, when used correctly, help decision-makers to rigorously describe and analyze their business considering the interwoven system dynamics between all its constituting parts (Magretta, 2002; Zott et al., 2011), including third parties, resulting also in a common language to all stakeholders (Doganova and Eyquem-Renault, 2009; Zott and Amit, 2010).

There have been many attempts to categorize BMs along typical, generic instances that can be applied to different firms in a sort of “classification schema” conceptual level (Morris et al., 2005; Osterwalder et al., 2005; Zott et al., 2011). This taxonomy-like approach is important because it allows to generate insights that are useful to entire industries from a single unit of analysis (Peppard and Rylander, 2006; Ballon, 2007; Cortimiglia et al., 2011). In this approach, BMs fundamentally rest on the provisioning of a combination of multiple interrelated design dimensions (also called building blocks or parameters) . In line with this structured approach to BM design, we adopt in this paper a conceptual framework that starts with a definition of BM based on a comprehensive literature review by Zott et al. (2011): a BM is a unit of analysis that explains, from a system-level perspective, how activities conducted by a firm and external stakeholders create, deliver, and appropriate value. The conceptual framework hence adopted includes the following five dimensions: i) value networking; ii) value creation; iii) value proposition; iv) value delivery; and v) value appropriation (Zott et al., 2011). The value creation dimension reflects the (internal or external) resources, processes, activities and capabilities that determine how value is created (e.g., Teece, 2010). The value delivery dimension refers to how business activities are articulated in order to reach customers and partners, including distribution and delivery channels (e.g., Ballon, 2007). The value proposition dimension summarizes the effective offering in the form of products and/or services as well as activities related to customer selection, segmentation, and acquisition (e.g. Osterwalder et al., 2005). The value networking dimension relates to how relationships with external stakeholders are governed, indicating resources and competences that come from outside the firm (e.g. Zott and Amit, 2010). Finally, the value appropriation dimension describes how the business captures value and generates profit (e.g. Chesbrough, 2010). The choice of dimensions that comprise the framework is inspired by influent works on BM (Chesbrough and Rosenbloom, 2002; Osterwalder et al., 2005; Shafer et al., 2005; Demil and Lecocq, 2010). In particular, the five dimensions aggregate the nine elements of the BM Canvas proposed by Osterwalder and Pigneur (2010) and widely diffused among practitioners, as depicted in Table 1.

Table 1 – Business model conceptual framework

|  |  |  |
| --- | --- | --- |
| **BM Dimension** | **Osterwalder and Pigneur’s (2010) BM Parameters** | **Description** |
| Value Proposition | Offering (BM1) | Bundle of company's products and services that are of value to the customers |
| Customer Segments (BM2) | Target customers segment to be reached by the BM |
| Value Delivery | Customer Relationship (BM3) | Link established between the company and its customers |
| Distribution Channels (BM4) | Means of interacting with the customers and delivering the offer |
| Value Creation | Key Activities (BM5) | Core activities needed to create value for customers |
| Key Resources (BM6) | Core resources/capabilities to perform activities necessary to create value |
| Value Networking | Partner Network (BM7) | Cooperative work between two or more companies to create a collective value for customers |
| Value Appropriation | Revenue Stream (BM8) | The way a company makes money through a variety of revenue mechanisms |
| Cost Structure (BM9) | Representation of all costs incurred to operate the model |
|  |  |  |

The main units of analysis in the conceptual framework are not the specific parameters from the Business Model Canvas, but their interplay within and across the aggregating dimensions. Thus, analysis using the proposed conceptual framework should not be limited to describing specific choices in terms of BM parameters. Instead, it should allow to understand what are the determinants and implications of specific choices to the whole business model (that is, why and how a choice in a specific parameter or dimension affects the other parameters or dimensions). This approach is in accordance to Zott and Amit’s (2011) argued importance of system-level design of business models and is already well established in the literature (Günzel and Holme, 2013).

# Business Model Innovation

Currently, there is a growing awareness that BMs can also be the object of innovation themselves (Chesbrough, 2010; Demil and Lecocq, 2010). This is the essence of BM innovation (BMI). There is no precise definition of BMI (Schneider and Spieth, 2013), but studies on the topic revolve around two themes: BM design (entrepreneurs creating new BMs from scratch) and BM development (managers improving current BMs) (Zott and Amit, 2010; Schneider and Spieth, 2013; Ghezzi et al., 2014). For the purposes of this paper, we consider both approaches (i.e. design and development) as BMI.

BMI that results in the design of new BMs is related to both technology management literature dealing with innovation commercialization (Chesbrough and Rosenbloom, 2002) and entrepreneurship literature (Zott and Amit, 2007; Doganova and Eyquem-Renault, 2009; Trimi and Berbegal-Mirabent, 2012). On the other hand, BMI to improve existing BMs tends to be related to strategic management literature (Schneider and Spieth, 2013; Ghezzi et al., 2014). As it is highly dependent on environmental factors (i.e., technology, competitive, market and legal/regulation structures), a BM has to be constantly revisited and, if necessary, innovated in order to keep it viable, competitive, and hard-to-imitate (Samavi et al., 2009; Chesbrough, 2010; Teece, 2010). Bucherer et al. (2012) also distinguish between BMI initiatives in which new BMs completely replace the old model and those in which both BMs run in parallel, at least for some time.

Demil and Lecocq (2010) warn that BM change is not always the result of deliberate management actions, but sometimes occurs thanks to unforeseen changes in the environment. The authors argue that the role of management in terms of BM dynamics involve monitoring and identifying uncertainties that can impact the BM, anticipate potential consequences of external and internal change and proactively act towards innovating the BM. The whole process seems to describe fairly well how BMI derives from strategic activities such as internal and external analysis, strategy formulation and strategy implementation, thus suggesting that BMI can be used as a tool for operationalizing strategy. As such, BMI is intrinsically linked to strategic action as a response to perceived threats and opportunities (Yip, 2004; Johnson et al., 2008). The reasoning behind the strategic importance attributed to BM innovation is similar to what drives the quest for innovation capability: to transform the firm in an innovation engine (Lawson and Samson, 2001). Demil and Lecocq (2010), for instance, introduce the concept of ‘dynamic consistency’ as a firm’s capacity to constantly innovate its BM while maintaining a high level of performance. Similarly, Schneider and Spieth (2013) argue that BMI has positive effects on a firm’s strategic flexibility, that is, its capability to respond to changes in the environment.

Different types of BMI can be highlighted. Some authors, for instance, distinguish BMI according to the source of innovation. To Demil and Lecocq (2010), BMI may occur in response to external and internal factors. The former include changes in competitor or complementor behavior, customer expectations or technological and economic conditions. Internal factors include deliberate managers’ decisions and the natural development of interactions between BM dimensions. Bucherer et al. (2012) categorize BMI according to two factors: internal versus external origin of innovation and threat versus opportunity, where the threat origin refers to situations in which a firm is forced to change its BM, while the opportunity origin indicates BMI to exploit an opportunity. The threat versus opportunity dichotomy is also used by Trimi and Berbegal-Mirabent (2012), who suggest that BMI can be restricted to the inner workings of the BM without altering its value proposition (in a sort of ‘incremental’ BMI) or it can affect the value proposition. In the latter case, BMI can be thought of as demand-pull (value proposition changes in response to new customer needs or environment opportunities) and technology-push (value proposition changes in response to technological breakthroughs by the firm). Similarly, Habtay (2012) proposes that BMI can be technology-driven or market-driven. The former describes situations where a whole new BM is needed to commercialize new technologies, while the latter represent innovation on the value proposition itself or in the firm’s role and position in the value network.

Other authors distinguish BMI according to the degree of innovativeness. Radical and incremental changes are frequently mentioned (Demil and Lecocq, 2010; Bucherer et al., 2012). In addition to the radical versus innovation dimension, Bucherer et al. (2012) consider also the macro-dimension affected: market versus industry. These dimensions represent, respectively the outside-in (or customer) view and the inside-out (or firm) view. The additional dimensions allow to classify BMI along two intermediate levels of innovativeness between incremental (different BM, but no substantial discontinuity) and radical (BMs that bring discontinuity to both market and industry). Industry breakthrough BMI, in this view, impacts the firms operating in the industry, but not the final customer, while the market breakthrough BMI brings discontinuity to the customer, but not to the other firms operating in the industry.

# Strategy and Business Model Innovation

Nowadays, qualitative and conceptual suggestions that BM can be used as a tool to operationalize strategy are relatively common (Johnson et al., 2008; Casadesus-Masanell and Ricart, 2010; Richardson, 2008; Hacklin and Wallnöfer, 2012), but earlier references of BM as a catalyst of competitive advantage can be found since the early 2000s (Magretta, 2002; Mitchell and Coles, 2003). According to this view, strategy is concerned with the achievement and sustainment of competitive advantage (Porter, 1985), while BMs translate strategic views and directions into a way to create and capture customer value (Teece, 2010), providing a systemic view of all the relevant elements and relationships (inside and outside the firm). Zott et al. (2011) agree with this view, citing that strategy normally emphasizes competition, value capture and competitive advantage issues, while BMs focus on value creation and positioning within a value network.

A single strategy, thus, can be abstracted into many different BMs (Casadesus-Masanell and Ricart, 2010). In other words, strategy explains how to differentiate from competitors, and an innovative BM can be an important tool in this sense (Samavi et al., 2009). As Casadesus-Masanell and Ricart (2010) put it, “strategy is much more than the mere selection of a BM; it is a contingent plan as to how the BM should be configured, depending on contingencies that might occur”. Thus, strategy does not simply define what BM a firm will employ, but – and perhaps more importantly – defines a pattern of subsequent BM innovation. Although most of the published research on BMs focus on static conditions, there is a growing concern about the dynamics of BM evolution and change (Demil and Lecocq, 2010; Zott et al., 2011). According to this interpretation, not only BMs operationalize strategy, but the strategic imperative of sustainable competitive advantage can be achieved through continuous and efficient BM innovation (Chesbrough, 2010; Teece, 2010). This is the approach we follow in this study.

Nonetheless, the literature on strategy and BMs still lacks a cohesive explanation about how precisely the different components of a new or improved BM are designed during the strategy making process (SMP) (Schneider and Spieth, 2013). Are all BM dimensions the final result of the SMP or are they designed in steps during the different stages of the SMP? Up to now, researchers have just begun to explore the link between strategy making and BM innovation, whereas such studies are largely conceptual and lack a quantitative testing of their propositions (e.g. Casadesus-Masanell and Ricart, 2010). For instance, authors like Govindarajan and Trimble (2005) attempted to relate the BM concept to the broader process of strategic innovation, but little or no mention was made about the process of BMI. Markides (2013) leverages the literature on ambidexterity to support companies in their BMI choice to “separate” or “integrate” different strategies, though his contribution mainly rests on the provisioning of conceptual guidelines. Casadesus-Masanell and Zhu (2013) considered competitive outcomes of BMI imitation by applying game-theoretic modeling techniques, but their findings are limited to the assessment of competitive conditions resulting from strategy implementation, rather than encompassing the whole strategy decision making process. Hacklin and Wallnöfer (2012) explore the use of BMs as strategy making device in bottom-up strategy making. Their findings suggest that BMs may not be suitable as analytic tools to structure strategy making, but rather provide a symbolic role for mediating, facilitating and sharing strategic discourse. Our aim in this study is to investigate the opposite of Hacklin and Wallnöfer’s (2012) research problem, that is, how strategy making is translated into BM innovation. Habtay (2012) argues that firms which take a planning-oriented view of strategy design BMs in an analytical, orderly fashion that produces tightly integrated (albeit somewhat rigid) and market-oriented BMs. On the other hand, emergent strategy making may end up generating technology-oriented BMs through discovery, experimentation and effectuation procedures rather than formalized and analytical planning. Moreover, Bucherer et al. (2012) suggest that typical BMI processes rely more on analytical planning and iterative experimentation typical of strategy making than effectuation, but this conclusion can hardly be generalized as established BMI processes do not seem to be prevalent in practice. In fact, Schneider and Spieth (2013) affirm that there is still no precise understanding about the specific elements of BMI as a process, even though there is a growing emphasis in research in this topic. This lack of understanding reinforces our motivation for a detailed empirical study about the relationship of strategy making process (SMP) and business model innovation (BMI).

Since one of our aims in this study is to investigate the relationship between SMP and BMI, we are interested in illustrating such relationship through a structured procedure that can be easily understood and reproduced by all survey respondents. Thus, we focus on systematic and formalized strategy making and market-oriented BMs, following the formal or rationalist school (Grant, 1991). The classic rationalist perspective, supported by authors like Ansoff, Chandler, Taylor, and Sloan (Micklethwait and Woolridge, 1997), has its core belief in the claim that strategic making is a rational process, carried out by the top management and a staff of strategic planners, which ultimately delivers a plan that – ideally – is to be implemented. Formal strategy making is hence a process which helps organizations to generate alternatives and evaluate them with the support of performance monitoring system (Lorange, 1980; Armstrong, 1982). Notwithstanding its limitations – mostly related to inaccurate prediction, bounded rationality and difficult formalization of some unstructured phases of the process (Mintzberg, 1994) – formal SMP receives support from a number of empirical studies which argue that a positive relationship between formal strategic making and performance exists, and in most cases planners outperform non-planners (e.g., Glaister and Falshaw, 1999; O’Regan and Ghobadian, 2007).

Formal SMP tends to be fairly homogeneous among companies due to employee mobility and the role of consultancy, business schools, executive seminars and academic research (Glaister and Falshaw, 1999; O’Regan and Ghobadian, 2007), which over time has converged towards a unified formulation of the planning steps. Drawing from the vast literature covering the subject, we consider a formal SMP process consisting of nine main steps (Table 2).

Table 2 – SMP conceptual framework

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| --- | --- | --- |
| **Strategic Planning Step** | **Description** | **References** |
| 1. Vision envisioning | Provisioning of a broad outline of the long-term developments of an industry, thus facilitating to inspire, direct and challenge the company, easing the adaptation against unexpected situations. | Mintzberg (1994); Hamel and Prahalad (2005). |
| 2. Mission definition | Definition of the firm’s mission and values which provide guidelines for its role in the industry as well as the social justification for its existence. | Armstrong (1982); Boyd and Elliot (1998) Hamel and Prahalad (2005). |
| 3. Objective setting | Development of the most important business objectives for the firm, which should be the starting point followed by their translation into specific measurable objectives. | Armstrong (1982); Bracker et al. (1988); Boyd and Elliot (1998); Reid (1989). |
| 4. External Analysis | External environment assessment: identification of opportunities and threats which the firm may face, such as political, economic and social trends, customers, current and potential competitors, substitutive products. | Armstrong (1982); Bracker et al. (1988); Boyd and Elliot (1998); Porter (1985); |
| 5. Internal Analysis | Assessment of the firm’s internal environment in order to identify strengths and weaknesses. The firm is analyzed in terms of inputs (resources), activities and processes, and outputs (performance). | Armstrong (1982); Bracker et al. (1988); Porter (1985); Reid (1989) |
| 6. Strategic Alternatives Formulation | Formulation of the generic strategy to be pursued, aligned with the SWOT analysis performed. | Armstrong (1982); Boyd and Elliot (1998); Pickton and Wright (1998). |
| 7. Strategic Alternatives Evaluation | Evaluation of the strategic alternatives (in terms of constraint violation, feasibility and effectiveness) in order to find the most effective alternative with reference to the firm’s objectives. | Armstrong (1982); Boyd and Elliot (1998); Reid (1989). |
| 8. Strategic Alternatives Implementation | Identification of the key elements of the selected strategy and provisioning of concrete guidelines/procedures/actions to support its actual implementation and operationalization. | Mintzberg (1994); Pearce and Robinson (1994); Reid, 1989. |
| 9. Control and Feedback | Assessment of how adequately the firm reaches its planned goals, thus creating a basis for comparing expected and actual results of implemented strategies, and for feeding an updated SMP. | Armstrong (1982); Boyd and Elliot (1998); Bracker et al. (1988); Reid (1989). |
|  |  |  |

# Research method

The research method follows a two-step sequential mixed methods approach in which a quantitative study is followed by a qualitative study. In mixed methods research, qualitative methods are often used to help explain and expand quantitative findings (Molina-Azorin, 2012; Creswell and Clark, 2011). First, in order to investigate *when* BM is innovated (designed or developed) during the SMP (RQ1) we carried out a quantitative survey on 138 companies. Next, in order to shed light on *how* BMI is innovated (RQ2), we conducted a multiple-case study on four firms selected from the sample (two representing BMI as development of existing BMs and two representing new BM design), so as to obtain qualitative in-depth findings. Such sequential approach combines the broader scope of quantitative analysis along with the “deep structure” of explanatory qualitative analyses (Castro et al., 2010). Therefore, it combines strengths from both research methods aiming at a more robust result (Creswell and Clark, 2011).

# Quantitative research

The quantitative stage of our research aimed to understand *when* BMI is innovated in the SMP (RQ1). We developed a questionnaire that relates the nine BM parameters proposed by Osterwalder and Pignerur (2010) (Table 1) with the main nine formal SMP steps (Table 2), obtaining a view on the precise point of the formal SMP where each BM parameter is defined. As a variety of published BM templates exists (e.g., see the comparison reported in Morris et al., 2005), our choice to select the rather practitioner-oriented Osterwalder and Pigneur’s (2010) business model canvas was mainly motivated by: i) the widely diffused awareness and practical use of this template in different firms and industries in general, and in the firm sample targeted by our research in particular; and ii) its recent discussion and adoption in academic studies as well (e.g. Chesbrough, 2010; Ghezzi, 2013).

In the questionnaire, respondents were asked to answer the following request: ‘*in which of the nine strategy making steps the BM parameter “X” was designed or developed in your company?*’ In order to avoid any misunderstanding about the meaning of the evaluated items, we provided a clear explanation based on the descriptions of Tables 1 and 2. Researchers were available on phone and e-mail to clarify any doubts about the interpretation of BM parameters and steps of the SMP. A pretest of the questionnaire was carried out in workshops with academics and practitioners involved with this issue.

# Data collection

The firm sample was obtained from a cross-industry database listing contacts of C-level executives from 505 national and multinational companies operating in Europe. The original database of contacts was created and owned by a high-standard and EQUIS accredited European School of Management: it collected both personal contact information on executives (e.g. job title; organizational function of reference; previous work experience) and details on their companies (e.g. industry type, size, location). The list of 505 executives and entrepreneurs was specifically selected to include informants who declared a direct involvement in SMP within their companies. Such pre-selection was meant to decrease the risk of misunderstandings or poor comprehension of the questionnaire due to a misalignment between the study’s aim and the respondents’ role and expertise, thus possibly increasing the response rate and consistency of results. The questionnaire was sent by e-mail to this list of 505 contacts and a return of 138 useful questionnaires was obtained (32.67% response rate). Table 3 shows the sample composition.

Table 3 – Sample characteristics (n = 138)

|  |  |  |  |
| --- | --- | --- | --- |
| **Industry** | **N** | **Size** | **N** |
| Manufacturing | 26 | <50 | 32 |
| Information | 16 | 50 to <100 | 23 |
| Professional and Technical Services | 14 | 100 to <500 | 49 |
| Health Care and Social Assistance | 11 | ≥ 500 | 34 |
| Accommodation and Food Services | 10 |  | |
| Utilities | 9 |
| Wholesale Trade | 8 |
| Finance and Insurance | 8 |
| Retail Trade | 6 |
| Other | 30 |
|  |  |  |  |

# Data analysis

Quantitative data was organized in a contingency table in which rows represent BM parameters and columns represent SMP steps, while cells were filled with the frequency of respondents that designed or developed a BM parameter within a specific SMP step. An independence test was used to check for significant differences of frequency distribution along SMP steps for each BM parameter. For this analysis, we selected only the main SMP steps, i.e. steps with a high concentration of frequency. Consequently, initial SMP steps (SMP0 to SMP3) and the final step (SMP9) were not considered in the analysis, since they presented less than 10% of the total distribution of frequency. Furthermore, given the nature of our analysis, it is possible to have structural zeroes, i.e. empty cells (Chen and Fienberg, 1976) because of a natural lack of relationship between a BM parameter and a SPM step. However, by limiting our analysis only from SMP4 to SMP8 we avoided this restriction and we were able to apply conventional contingency table analysis. We used an adaptation of Pearson’s Chi-squared test, which is used for conventional contingency table analysis to understand if the levels of the row variable (BM parameters) are differentially distributed over levels of the column variables (SMP steps) (Rao and Scott, 1981; Plackett, 1983). Our adaptation relied in testing the assumption that distribution of frequencies (expected frequency) for each BM parameter along the SMP steps is the same. This supposition means that there should be no prominent steps in which a BM parameter is designed or developed. A high value on the Pearson’s Chi-squared test means that observed frequencies differ significantly from expected frequencies, signaling statistical dependence among variables (Placket, 1983). In other words, this would mean that there are specific SMP steps in which – at least – some parameters are innovated.

After testing and detecting significant differences in frequency distribution, we used the standardized residual to identify where frequencies are significantly different from the others. Frequencies with a standardized residual value higher than 3.0 were highlighted as significant with p ≤ 0.01. These are identified as the SMP steps in which a BM parameter is designed or developed. We also highlighted weaker significances (p ≤ 0.05) that may indicate a behavior characteristic of only a subset of respondent firms.

The procedure for data analysis was conducted twice, first for the total sample and later for the control variable introduced (company size). In order to introduce the control variable, first we tested different size categories to achieve a minimum frequency (≥5) in each cell of the contingency analysis. As a result, we fixed company size into two categories that achieve the minimum frequency distribution: companies with <100 employees and companies with ≥ 100 employees. Contingency tables were recalculated for both company size categories and then compared with the total sample. No differences were detected when the control variable was introduced, enabling us to use the total sample for discussing results.

# Qualitative Research

The second stage of our research consisted in a qualitative and exploratory multiple-case study whose aim was to bring a first insight about *how* BMI occurs within the SMP (RQ2). Case study is a useful research approach when researchers need to better understand how a given phenomenon happens and to build new theories or to obtain new insights based on deep analysis (Eisenhardt and Graebner, 2007; Yin, 2009). Our cross-case analysis does not aim to generalize findings, but to explore the issue and to bring new possible explanations about BMI inner workings. The explorative multiple-case study was based on four cases drawn from the sample of survey respondents. Case analysis was carried out sequentially (Flick, 2003).

# Case studies selection

The four cases were selectively chosen from the sample by considering a set of criteria. All selected companies innovated their BMs by following a formal SMP approach and have the same business approach (e-Business based on Internet platforms), so that any bias related to the type of business could be minimized. However, each case is focused on a different market and application, helping to enrich information about the BMI process. E-Business platforms were chosen based on the claim by Zott et al. (2011) that the BM concept is not suited to the simplified, linear value creation that characterizes value-adding process business. Therefore, we focused on BMI in Internet-based e-Business platforms as instances of value network operators.

Furthermore, the selected cases represent different types of BMI. We used BMI classifications from Schneider and Spieth (2013) and Bucherer et al. (2012): type of innovation (existing BM development versus new BM design), source of innovation (internal and external threat versus internal or external opportunity) and degrees of innovativeness (industry or market breakthrough, radical and incremental). In order to address a range of BMI alternatives, we selected two cases for each type of innovation category and one case for each of the four sources of innovation; similarly, two cases constituted examples of radical innovation and two represented industry and market breakthroughs.

# Qualitative data collection and analysis

For data collection, semi-structured individual interviews with three key-executives for each company were employed. In two cases (both new BM designs by university spin-offs), the respondents were the entrepreneurs responsible for strategic decisions of the new company and their support groups. In the other two cases, interviewees were part of the BM design team. Interviews were performed from July 2012 to December 2012 by an average of two meetings for each executive. The average length of each meeting was 1h 30 minutes. Executives were asked first to explain how their BM was shaped before BMI took place (thus underscoring the motivations behind BMI); hence, they were asked how the innovated BM operates nowadays (contextualization) and, afterwards, how their BM was developed during the SMP and BMI, i.e. which tools they used for such development, in what order the different BM parameters were defined and any additional information that could allow us to better understand the relationship between SMP and BMI. Additionally, we used other information for data triangulation (Yin, 2009) such as internal documents describing strategic approaches and the BM of each company as well as market information about companies’ business approach and results given by research reports from research institutions (DIO, 2014; Forrester Research, 2012; Plimsoll, 2014; WTO, 2013).

For quality assurance of the collected data, we followed Flick (2003). So, standardized notes and transcription rules were used to achieve procedural reliability. We also used communicative validation, i.e. involving the participants in the research process validation. This was done by carrying out a second round of meetings where interviewees helped validate and clarify our interpretations. Qualitative data was analyzed through cross-case content analysis aimed at revealing patterns of commonality or difference between BMI dynamics according to our interpretative conceptual framework (Bardin, 1977). Interview records and notes were examined with codification rules. Bardin (1977) suggested three data codification rules: (i) meaning rule: thematic analysis was used grouping cross-case elements according to common topics mentioned by the interviewees; (ii) enumeration rule: it was used only to determine if a new element (BM parameter or SMP stage) was cited by interviewees, although the citation frequency of phrases and words was not counted; and (iii) categorization rule: category names were constructed according to the semantic criteria, and classified according to the general meaning of the elements from each category.

# Results and Discussions

# Quantitative Results

Our analysis range was from SMP4 (External Analysis) to SMP8 (Strategic Alternatives implementation), since other SMP steps accounted for less than 10% of the total frequency. An independence test was performed based on results obtained from this range of analysis for BM parameters. This test indicated significant differences in the frequency distribution of BM parameters along SMP stages, χ2 = 430.84, d.f.= 32, *p* <0.001. Such differences were investigated through the standardized residual presented in Table 4, which is based on the hypothesis that frequency distribution (expected frequency) for each BM parameter along the SMP steps is the same. So, negative and positive values represent frequencies below and above the expected homogenous distribution, respectively.

Table 4 – Standardized residual of frequency distribution of observations (n = 138)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | SMP4  External Analysis | SMP5 Internal Analysis | SMP 6  Strategic Alternatives Formulation | SMP7  Strategic Alternatives Evaluation | SMP8  Strategic Alternatives implementation | % of  frequency |
| BM1: offering | -3.60 | -2.20 | -0.42 | 1.29 | **5.93\*\*** | 83% |
| BM2: customer segments | 1.34 | -3.42 | -3.21 | 1.70 | **4.10\*\*** | 87% |
| BM3: customer relationships | -4.60 | -0.61 | -2.76 | **2.19\*** | **7.16\*\*** | 96% |
| BM4: delivery channels | -4.53 | -1.06 | -2.28 | 0.32 | **9.10\*\*** | 100% |
| BM5: key activities | -4.74 | **8.14\*\*** | -4.22 | -0.82 | **2.67\*** | 100% |
| BM6: key resources | -4.24 | **8.41\*\*** | -3.25 | -0.85 | 0.64 | 93% |
| BM7: key partners | -4.17 | -3.88 | -3.20 | -0.14 | **13.43\*\*** | 96% |
| BM8: revenue model | -4.71 | -1.25 | -0.30 | 0.60 | **6.86\*\*** | 99% |
| BM9: cost structure | -4.53 | **2.16\*** | -2.28 | 0.32 | **5.50\*\*** | 100% |
| % of frequency | 6.2% | 21.3% | 11.0% | 20.5% | 36.0% |  |
| \*\*p < 0.001 \*p < 0.05 |  |  |  |  |  |  |

As shown in Table 4, SMP steps 4 and 6 are below the expected homogeneity supposition of distribution. This means that only a very low amount of respondents (6.2% and 11%, respectively) considered that innovation in, at least one BM parameter occurs in these stages. Conversely, Table 4 shows that SMP8 is the more relevant step for BM innovation (36% of the total frequency). With the exception of BM5 and BM6, the design of all parameters was strongly associated (p<0.001) to this SMP stage. This means that, for our sample, seven out of nine BM parameters tend to be defined during of the Strategic Alternatives Implementation step.

Table 4 also shows that both parameters related to the Value Creation dimension (i.e., BM5 - Key Activities and BM6 - Key Resources) tend to be defined during or right after SMP5 (Internal Analysis). However, a subset of firms seems to postpone the definition of Key Activities (BM5) to SMP8 (Strategic Alternatives Implementation) – the correlation is significant only at the p<0.05 level. Another interesting result observed in Table 4 is that some firms seem to anticipate the definition of BM3 (Customer Relationships) to SMP7 (Strategic Alternatives Evaluation) instead of SMP8 (however, the correlation is not so strong as between BM3 and SMP8; it is significant only at the p<0.05 level). It also can be observed that some firms start to define the Customer Segments in SMP7, but this correlation is significant only at the p<0.05 level. Similarly, while most firms define BM9 (Cost Structure) in SMP8, for a subset of the firms studied, BM9 is correlated (again, not so strongly: p<0.05) to SMP5 (Internal Analysis).

# Discussion of quantitative results

Our quantitative finding supports and validates two important theoretical elaborations on the BM concept. First, it suggests that most parts of a BM tend to be defined towards the end of the formal SMP, when most data about external and internal environments was already collected and analyzed and alternative strategies were drawn and evaluated. This supports the conceptual claim from existing literature (Casadesus-Masanell and Ricart, 2010; Zott et al., 2011) about BMs as representations of realized strategy, i.e. that BMs can be instrumental in supporting strategy implementation. Second, it suggests that most BM parameters tend to be defined at roughly the same period during the SMP. This evidence empirically validates the arguments put forward by authors who see the BM as an integrative construct that shows the interrelationships between different elements of strategy implementation (e.g. Osterwalder and Pigneur, 2010). Thus, it can be argued that, in practice, the BM is indeed considered by managers as an integrated whole whose parts (and their interplay) are designed or developed together (Zott and Amit, 2010). This result reinforces the need for managers and strategy makers to adopt a systemic approach to BM design and improvement (Günzel and Holm, 2013).

Table 4 also showed that parameters related to the Value Creation dimension (i.e., BM5 - Key Activities and BM6 - Key Resources) tend to be defined during or right after SMP5 (Internal Analysis). A possible interpretation raises a hypothesis on the specific dynamics of BM innovation: it seems that most companies studied start building their BMs based on their perceived strengths (and weaknesses), deriving the value proposition potential from the value creating processes, resources, assets, capabilities and competences at hand. In other words, instead of focusing on *what will we do*, firms tend to think BMI in terms of *what can we do*? This may confirm that, in practice, most BMI has its origins in internal sources (Demil and Lecocq, 2010; Bucherer et al., 2012). However, a subset of firms seems to postpone the definition of Key Activities (BM5) to SMP8 (Strategic Alternatives Implementation). This may represent firms that rely heavily on partnerships or outsource many activities, and thus may leave to the strategy implementation not only the definition of *who will perform the activities* (BM7 – Value Network), but also *which activities will be central to this BM.* According to this interpretation, these firms would decide about BM parameters 5 and 7 more or less at the same time. Moreover, in some firms, the BM implementation can be a period of great experimentation, especially in terms of the value proposition dimension. Once a value proposition is altered, it may be necessary to alter the key value creating activities. This dynamic may be so relevant to some firms that they reported the definition of BM5 in concomitance with the value proposition parameters in SMP8.

Results also showed that some firms seem to anticipate the definition of BM3 (Customer Relationships) to SMP7 (Strategic Alternatives Evaluation) instead of SMP8. Within the Value Delivery dimension, BM3 can be thought of as the parameter that defines ownership over the final customer. This aspect is especially relevant for BMs built around value networks, like those of Mobile Network Operators (Peppard and Rylander, 2006). Thus, the observed anticipation of BM3 to the step when alternative strategies are evaluated may represent a subset of firms whose BMs rely on customer ownership and use BM3 to prioritize strategies centered on customer ownership during the evaluation process. BM3 becomes a significant parameter upon which to build the rest of the BM for this subset of firms.

Similarly, while most firms define BM9 (Cost Structure) in SMP8, for a subset of the firms studied, BM9 is correlated to SMP5 (Internal Analysis). A possible interpretation is that some of the firms studied have rather rigid cost structures that can be considered a ‘constraint’ when designing a new or improved BM. Such costs may be considered by strategy makers of these firms as a weakness or internal threat that may even be the trigger for BM innovation opportunities. Another possible interpretation for this correlation is that decision makers initiate the BMI process by not only assessing the firm’s own resources and capabilities in terms of potential value creation, but also in terms of potential costs.

# Qualitative Results

Quantitative results provide an overview of *when* BM parameters are innovated during the SMP. However, the quantitative study does not fully explain *how* BMI happens. Therefore, the qualitative research study investigates such relationships by bringing insights about how BM is innovated in the identified SMP stages for both existing and new firms. Table 5 shows a summary of the results from the cross-case analysis with reference to the BMI classifications described in Section 5.2 (i.e., type of BM change, source of innovation, and degree of innovativeness). Case presentation details are reported in Appendix A.

Table 5 – Cross-case analysis summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description of the case** | **Business Approach** | **Type of BM change** (Schneider and Spieth, 2013) | **Source of innovation** (Bucherer et al., 2012) | **Degree of Innovativeness** (Bucherer et al., 2012) |
| A | Multi-channel platform to commercialize second-hand agriculture machinery | E-business platform | Development of an existing BM | External  threat | Industry Breakthrough |
| B | Electronic platform for gift cards | E-business platform | Development of an existing BM | Internal  threat | Market Breakthrough |
| C | Platform based on social media to enable second-hand consumer product transactions | E-business platform | Design of a new BM | External opportunity | Radical Innovation |
| D | Web-based platform to mediate structured transmission of information about academic events | E-business platform | Design of a new BM | Internal opportunity | Radical Innovation |

**BMI as existing BM development**

Cases A and B illustrate BMI as development of existing BMs. In both cases, BMI followed the usual pattern described by the quantitative results, and external analysis (SPM4), conducted using technology roadmaps and scenario modeling, pointed out general venues for new businesses in terms of prospective market opportunities, but no specific BM development was conducted at that point. Then, during the internal analysis stage (SPM5), firms’ key activities, resources and competences (BM5 and BM6) were identified, with special emphasis on those that could be easily transferred and applied to new markets. In Case A, internal analysis allowed decision makers to focus on a range of potential markets for new BMs based on the capabilities of their working force in terms of market knowledge, languages, and cultural background. In Case B, internal analysis was conducted with the help of competence mapping in addition to a SWOT analysis that extended from the external analysis stage (SPM4). Interviewees were asked if the cost structure (BM9) was also considered in this stage, as suggested by the quantitative results, but they denied it unanimously.

Next, during the Strategic Alternatives Formulation stage (SPM6), a number of BM opportunities were identified in a very general way based on the loose definitions established beforehand in terms of available key activities and resources and target markets’ characteristics. Such alternative ‘proto’-BMs, which lacked the level of detail that even the most basic BM usually has, were evaluated during the Strategic Alternatives Evaluation stage (SMP7). In Case A, this evaluation was informally conducted by the internal management team, while in Case B evaluation was conducted with the help from an external consulting team. Either way, no specific BM parameter other than the two already defined was elaborated at this step, but, at the end of the evaluation process, the most promising opportunity was selected as the future BM. In Case B, for instance, the gift-card business idea was deemed the most promising, as it allowed the focal firm to directly access the end customer and, consequently, to influence buying behavior. This suggests that a specific element of BM3 (Customer Relationships) was decided in SPM7. In fact, BM3 was decisive to the selection of the strategic alternative to be implemented in Case B, in accordance with our interpretation of quantitative data regarding the anticipation of BM3 in SPM7.

Finally, the whole SMP8 stage (Strategic Alternatives Implementation) was an exercise of drawing the specificities of the innovated BM in both cases. The remaining BM parameters (other than value creation parameters, that is, BM5 and BM6, and BM3 in Case B) were defined during SPM8, as quantitative results suggest that most existing firms conducting BMI behave. During this step, BM dimensions were defined in the following order: first, value proposition (BM1 and BM2) was detailed, followed by value delivery (BM3 and BM4) and value appropriation (BM8 and BM9). Finally, necessary adjustments in the value networking dimension (BM7) were designed.

More specifically, interviewees reported that BM parameters that define value proposition were those most extensively planned. This particular result suggests that both parameters within the value creation dimension (BM1 – Offering and BM2 – Customer Segments) are indeed intrinsically related and cannot be analyzed separately, precisely as the conceptual BM framework assumed.

Moreover, value appropriation was the least detailed and experimented dimension. In Case A, BM8 (Cost Structure) was very difficult for decision makers to estimate, while BM9 (Revenue Stream), although proved in the original BM, would represent a discontinuity in the new market, so its success was hard to forecast, while alternatives were difficult to foresee. Finally, although the BMs in Cases A and B are that of a value network operator, value networking was the last dimension modeled in both cases, having not received much attention as the managers either had limited knowledge about prospective partners in the new market (Case A) or already considered that all key activities would be performed within the boundaries of the innovating firm (Case B).

In summary, for both cases A and B, the design of the innovated BM seem to follow an inside-outside approach: it starts with value creation (in SMP5), as strategic analysis allows the identification of (rather immutable) key assets, resources, capabilities and business relationships upon which to build the business model. Next, the value proposition is designed (drafted for various alternative proto-BMs) in SMP6, chosen in SMP7 and detailed in SMP8. Thus, after the value proposition is consolidated, the dimensions of value delivery, appropriation and networking are designed in SMP8. At the end, experimentation and refinement take place as value proposition, delivery and appropriation mechanisms are devised and experimented with.

**BMI as new BM design**

Conversely, Cases C and D (see companies’ details in Appendix A) represent radical BM innovations (Bucherer et al., 2012) that originate from a perceived opportunity to create and design a radically new business model, in the form of a startup. The firms studied are university spin-offs that developed brand new BMs which, at the time of the innovation, were entirely original (at least in the local market). In both cases, entrepreneurs were fully competent in strategic management and BM design and conducted formal SMP in order to support the development of their business ideas into full-fledged operational BMs. Case C and D share many similarities, so they will be discussed together.

The BMI process was very similar for both Cases C and D, but markedly distinct from what the quantitative results suggest as typical for most existing companies surveyed (e.g. Cases A and B). In cases C and D, little to no thought was given to the (few) existing resources and competences. Instead, entrepreneurs had, from the start, a notion of a starting value proposition in terms of a particular offering (BM3) and customer segment (BM4) that would fulfill the specific market (Case C) or technological (Case D) opportunities perceived. Also, unlike Cases A and B, no alternative value propositions were considered and evaluated. Instead, the SMP was a concentrated effort to, on the one hand, test the viability of the value proposition and, on the other hand, develop the remaining BM parameters that would fit – and enable – the desired value proposition. In fact, when asked if the value proposition was developed during external (SMP4) and internal analysis (SMP5), interviewees were adamant in affirming that it was already consolidated at the start of the strategy making process and that strategic analysis were useful only to further refine the value proposition dimension and conduct a first assessment about the technical and economic viability of the envisioned BM. Thus, contrarily to what was gauged from the quantitative study, Cases C and D developed BM1 (Offering) and BM2 (Customer Segments) first and only later in the SMP defined value creation parameters.

Another marked characteristic of the BMI process in Cases C and D is that SMP6 and SMP7 (Strategic Alternatives Formulation and Evaluation) do not address different value propositions, but different implementations of a single tentative value proposition, usually in a very detailed manner. For instance, in Case C, three technical alternatives to develop and operate the platform were designed in SMP6 and evaluated by technical experts and potential suppliers in SMP7. In other words, the cases studied suggest that entrepreneurs first decide on *what they must offer* to exploit perceived opportunities and then evaluate *how* they will develop the value creating and delivery architecture necessary. This *how* is, precisely, the design of the remaining business model dimensions. Unlike Cases A and B, where dimensions other than value proposition were fully designed and experimented with only during SMP8, in Cases C and D this design was conducted during SMP6 and SMP7. First, value creation and value delivery were jointly considered, mostly from a technical viability perspective. Next, value networking was conceived, as in both cases partners were designed into the model in order to provide specific resources, capabilities or delivery channels that were considered difficult to develop or acquire. Finally, strategic alternative implementation (SMP8) was perceived, in Cases C and D, as a moment for testing and validating the model through experimentation.

In summary, the BMI process in both cases C and D is as follows: it starts with a perceived market or technological opportunity; this opportunity gives birth to a prospective value proposition (BM1 and BM2) to exploit it, which signals the start of the SMP itself. Then, during SMP4 and SMP5, the opportunity is validated and the value proposition is detailed. Different tactical choices about how to deploy the prospective value proposition are formulated (SMP6) and evaluated (SMP7) in this rough order: first, value creation (BM5 and BM6) and value delivery (BM3 and BM4), followed by value networking (BM7) and, finally, value appropriation (BM8 and BM9). Thus, at the end of SMP7, a specific business model that has the best potential to succeed has been selected. Then, at SMP8, the business model is validated through market testing, and experimentation occurs to refine and adjust the model.

# Discussion of qualitative results

The qualitative results broadly support Schneider and Spieth’s (2013) claim that there are crucial differences between BMI aimed at new BM design or existing BM development, while at the same time extend existing theory by shedding further light on the specific dynamics of BM innovation at the end of the SMP, uncovered by the quantitative study.

First, qualitative results suggest that BMI for existing BM development is strongly grounded on a firm’s internal key resources and competences, regardless of the industry investigated. Previous research supports this interpretation, though mostly focusing on a narrower set of industries - if not a single market (Aspara et al., 2011; George and Bock’s, 2011; Sánchez and Ricart, 2010).

The possible link between BMI as existing BM development and a resource structure-dominant logic for BMI must be further examined with caution, though. The direction of causality is not apparent and may be even reversed. In fact, George and Bock (2011) raise the possibility that firms whose resource structures are powerful tend to orientate strategic search activities for new opportunities precisely towards variations of business models based on small modifications of their resource base. In these cases, we argue that Strategic Alternatives Evaluation (SMP7) would privilege a localized, limited search process that would yield mostly incremental BMI. Coherent with this reasoning, both cases A and B report BMI that is confined to an industry- or market-level breakthrough only.

Qualitative results also suggest that existing BM development finds a more circumstantial positioning in Strategic Alternatives Implementation (SMP8), where strategists employ the BM concept to pursue a concretization of strategic renewal. Again, this interpretation is coherent with previous theory (Chesbrough, 2010; Smith et al., 2010; Sosna et al., 2010; George and Bock, 2011). In fact, cases A and B illustrate strategy implementation as an exercise in BM experimentation and offer a deeper, cross-industry insight on how this experimentation is effectuated. Important adjustments were made in the value proposition and delivery dimensions of the innovated BMs as compared to the original ones.

Additional experimentations were reported in the value appropriation dimension in cases A and B, as firms learned how to better capture value through trial-and-error. Once both BMs were up and running, increased efficiency in value networking management provided new opportunities for value appropriation, as costs diminished. The fluidity of value appropriation mechanisms seen in cases A and B may be related to George and Bock’s (2011) observations that the value structure is the BM dimension least understood by practicing managers and value structure-dominant business models are rare. Our findings extend such idea and relates it with the concept of BMI through experimentation, by arguing that a learning-by-doing approach may indeed help practitioners to orient BMI process towards an improved design and exploitation of their business’ value structure.

Qualitative results extend existing literature by suggesting that new BM design, on the other hand, finds a fuzzier position in the SMP, and is generally anticipated to earlier phases of the process before implementation. In this context, the formulation and evaluation of alternative value propositions seem to occur outside – and before – the formal strategy making process. This argument helps conceptualizing the overarching ideas found in what could be labeled as the “entrepreneurial” perspective on BM design (Osterwalder and Pigneur, 2010; Ries, 2011; Trimi and Berbegal-Mirabent, 2012), which sees the BM as a tool or checklist employed by entrepreneurs to get a rough business idea “down to earth” and sketch its relationship with other dimensions, in parallel or sometimes even *before* a consistent strategy is planned. This study underscores how strategy, in this sense and according to this entrepreneurial perspective, helps to build up the necessary resource and relationship structures around the business model and required to activate it.

This dynamic well depicted by our qualitative findings regarding BMI for developing new business models. In Cases C and D, the first step in designing a new business model was the development of a tentative value proposition that would address a perceived opportunity. Strategic internal and external analysis then verifies the circumstances that shape the perceived opportunity and refines the assumptions behind the envisioned value proposition. In this sense, it can be argued that entrepreneurs conducting BMI to develop new business models adopt an inside-out approach and shape their BM around their business idea (properly translated into a value proposition); they hence experiment on the system of dimensions surrounding such value proposition, thus leveraging the tactical trait of the BM tool (Casadesus-Masanell and Ricart, 2010). Experimenting is much easier in a greenfield condition, and entrepreneurs designing new BMs exploit the BM’s natural flexibility to examine the tactical choices (Casadesus-Masanell and Ricart, 2010) at hand with references to their business idea converted in a value proposition.

Moreover, qualitative results suggest that, irrespective of the type of BMI, experimentation is more intense within the value delivery and appropriation dimensions. The observed focus on experimentation with value appropriation and delivery in our findings confirm and extend the study from Günzel and Holm (2013), who argue that trial-and-error innovation processes are more adequate to the front-end of a business model (that is, the value proposition and delivery dimensions and the revenue appropriation mechanisms of the value appropriation dimension). This seems to be particularly true in the case of existing business model revision and extension, as the resource structure is conceived as a largely immutable starting point for BMI. Thus, our qualitative results at the same time provide support for Günzel and Holm’s (2013) notion that back-end BMI (that is, business model innovation dealing with the value creation dimension) tends to be linear and raise the issue that this dynamic may be just the opposite in the case of new business model design. In fact, our cases of BMI as new BM design indicate that entrepreneurs see value creation (and the remaining BM dimensions) as the necessary means to achieve the target value proposition. As such, different – and sometimes innovative – alternatives to obtain such resource structure are envisioned, which includes bringing more partners to the model. This resembles the description and the logic behind the formation of interactive business models by Sánchez and Ricart (2010): high, positive and cooperative interdependences between complementary actors and resulting business models of moderate to high complexity.

# Conclusions

**Theoretical contributions**

Two main research questions were addressed in this study. The first one (RQ1) considers to quantitatively validate when firms engage in BMI within the SMP, and the second (RQ2) qualitatively considers how firms conduct such innovation. In order to help clarifying the relationship between SMP and BMI, we conducted an empirical study employing a mixed methods research strategy combining a large scale survey on 138 companies and four detailed case studies.

Considering the first research question (RQ1), our quantitative findings suggest that most companies first innovate (by designing or improving) the value creation dimension of BM (i.e. key activities and key resources) during the internal analysis stage of the SMP. Afterwards, they innovate all other BM parameters at the final stage of SMP, during the strategic alternatives implementation. We noticed and discussed exceptions to this general pattern; for instance, it seems that some firms anticipate the design or improvement of some parameters to previous SMP steps. However, in a general sense, we could verify that in the context of formal SMP, BMI occurs mainly at the end of SMP, as a way of strategy operationalization. This finding is particularly significant for the evolution of the research stream on BM and BMI, since it eventually provides a cross-industry empirical, quantitative validation for the common conceptual claim that the BM is a framework for strategy execution (Richardson, 2008; Casadesus-Masanell and Ricart, 2010; Teece, 2010). Although implicitly accepted or to some extent taken for granted by scholars in the field, this claim was ultimately based on conceptual propositions or relied only on qualitative methodologies for theory building (e.g. case studies); as a result, a core conceptual building block in the strategic theory of the business model was essentially lacking a proper testing and validation (Zott et al., 2011). Our study fills such literature gap by offering a first large-scale quantitative testing on the fact that BMI indeed belongs to the execution phase of strategy making, thus helping scholars to eventually take stock of this concept and move theory forward.

On the other hand, considering the second research question (RQ2), our qualitative findings categorize and compare two different forms of BMI, namely BMI design (i.e the creation or radically new BMs) and BMI development (i.e. evolution of existing BMs), which differ in the nature and intensity of the innovation in place, thus accounting for both the traditional firms and the entrepreneurial perspectives on BMs; the findings suggest a substantial difference in the BMI process of new BM design (particularly when considering new firms created specifically to pursue a perceived opportunity) and existing BM development (in existing firms). The qualitative investigation also provides additional insight on how the SMP and the process of BMI co-evolve, and BMI enables a broader process of strategic innovation, thus introducing the theme of BMI also in the within-firm co-evolution (e.g., Volberda and Lewin, 2003) and strategic renewal (Volberda et al., 2001) research streams.

More broadly, based on the combination of the quantitative and qualitative results of this study, a tentative proposal to formalize and integrate the BM concept and the BMI process in the formal SMP can be developed. SMP and BMI so far have been often treated as stand-alone concepts and processes. The mainly conceptual works on the relationship between BMI and strategy neglect to tackle the relationship between BM, BMI and strategy as a process. Our study constitutes a first investigation of the role and position of BMI in the overall SMP and its contribution hence lies in the validation of the conceptual proposals and findings from Casadesus-Masanell and Ricart (2010) and Teece (2010), underscoring the existence of a strong relationship between strategy, innovation and BMI; and the role of BMI in strategy execution and operationalization. In particular, whereas the SMP as traditionally conceived (see Table 2) is divided into macro-steps, this study contends that BMI deserves a distinguished position in the process. In the BM development case, most likely to occur in the traditional firm perspective, the internal BM parameters are often addressed within the internal strategy analysis macro-step, though BMI is largely concentrated within strategy implementation, and such macro-step could be labeled “strategy implementation and innovation” to explicitly account for the role of strategy innovation in the SMP: BMI hence acts as a means for strategy innovation as a whole; in this view, strategy assessment fundamentally deals with monitoring and controlling the performance of the executed and innovated BM. When it comes to BM design, most common in the entrepreneurial perspective, BMI has even a more pervasive position: BMI starts from scratch in the strategic idea and objectives definition macro-step, serving as a tool managers can employ to concretize their fuzzy business idea, before the strategic context is analyzed and a strategy is formulated; BMI will then be further refined within the strategy implementation and innovation macro-step, to leverage the information obtained through strategy analysis and formulation.

As a concluding point, the study’s adoption of a mixed methods approach combining quantitative testing with qualitative analysis by means of a multiple case study offered a multidimensional perspective on BMI research, where the needs for testing extant theories and generating original theory coexist. Mixed methods could indeed represent a viable methodological approach to address future research opportunities in this field.

**Managerial implications**

In terms of practical implications for R&D and Strategy managers, this study highlights the importance of the BM construct as a strategy operationalization tool which can be specifically used in the implementation phase of the SMP, irrespectively of the industry considered. However, as we showed in our findings, many managers first analyze their firms’ value creation potential (in terms of Key Activities and Key Resources available) at the initial stages of SMP within strategy analysis. Therefore, managers may also use BM as a strategy tool to summarize and articulate the strategic internal analysis before they have effectively defined strategic alternatives to be followed and implemented.

The difference between BMI as design and development could also inform the activity of practitioners involved in the SMP: more specifically, while managers willing to include incremental innovation in largely traditional contexts may want to employ the BM as a vehicle for strategic innovation in the implementation phase alone, those involved in the entrepreneurial activity of designing a radically new BM could make a more extensive use of the tool (first, as a good checklist to tackle all strategic quibbles arising when a business idea shall be written down, even before a formal strategy is conceived; and afterwards, to execute the formulated idea and related strategy). Managers should take into fair account this difference in approaches when considering their company-specific implementation of BMI.

Additionally, our results highlight the importance that R&D managers should confer to BMI not as an independent, stand-alone process, but as a complementary part of the SMP. Indeed, our study suggests the practitioners-oriented role of BMI as an enabler of strategic renewal, as executives and entrepreneurs appear to employ BMI to catalyze and execute a broader process of strategic innovation in their firms. Therefore, R&D managers should constantly consider such underlying relationship, valuing the BM as the key instrument to bring innovation to the often rigid and structures formal SMP, thus eventually ensuring the fundamental link between the processes of strategizing and innovating.

**Limitations and future research**

This study has some limitations that bring opportunities for future research. First, by comparing our findings with Hacklin and Wallnöfer’s (2012), who explored the use of BMs as strategy making devices in bottom-up strategy making, it may be possible to argue that different strategy making approaches may have different relationships with BMI. In this study we considered only the formal strategy approach. Therefore, one suggestion for future research opportunities regards empirical comparisons between formal and emergent strategy approaches in order to understand differences in terms of BMI processes and practices. Additionally, there is also the possibility that different types of strategy making other than the formal perspective adopted in this study may relate differently to business model design and improvement. Conversely to our findings, it may be posited that an inverse relationship may occur: the specific characteristics of the BMI could influence how strategy making is conducted. Moreover, it may be the case that different perspectives on how BMI can help a firm achieve competitive advantage may influence when and how BMI is conducted. These are all valid research questions that arise from assumptions different from those assumed in this study, and surely deserve attention in future studies.

The qualitative phase also avoided the issue of different value propositions affecting how a business model is designed or improved by concentrating on business models with similar value propositions (e-business platforms). Again, future studies should be dedicated to understanding how business model innovation works as the value proposition changes. Finally, our qualitative results were obtained from a small set of four cases, and the rationale for their selection was their ability to illustrate significant BMI processes rather than ensuring full theoretical saturation. This may disclose the need for further comparative studies among several BMI processes of different types and with different motivations, aiming at obtaining a more generalized understanding on this issue.

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# Appendix A – Case descriptions

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| **Case** | **Description** |
| Case A | Founded in the late 1970s as a publishing house specialized in trade publications. Today, the firm’s main BM is a multi-channel information broker platform (comprising eight print magazines and an online portal) that connects buyers and sellers of second-hand heavy machinery, appropriating a share of each transaction. In 2010, the firm conducted a formal SMP that resulted in BMI for entry in a foreign, low-income market. The BMI represents a development of an existing BM motivated by an external threat. The innovated BM does not represent a discontinuity from the point of view of end customers, who continue to buy second-hand machines from individual sellers, brokers, or dealers. However, the BM transforms the industry by adding a new element to the value network: the information broker. Thus, the BMI can be characterized as Industry Breakthrough. |
| Case B | A small technology provider founded in 2008. Until 2010, it operated as a B2B platform operator connecting firms that use pre-paid cards to provide benefits such as food and fuel reimbursement to their employees. The main BM was that of a value network operator, orchestrating a number of actors: a network of benefit providers, employees, affiliated merchants (stores where cards were redeemed), software houses, telecom providers, electronic payment providers, banks, and suppliers. However, in early 2011, the firm lost sales personal that was crucial in maintaining and expanding the network of affiliated merchants. At the same time, management came to the conclusion that the firm had not the size required to compete in the pre-paid card industry, which was heavily leaning towards concentration in the hands of a few very large competitors. Thus, in this case the source of innovation was an internal threat associated with a marketing opportunity to employ the firm’s resources and competences in different markets. The BMI is a Market Breakthrough, since it does not introduce major industry change, but completely redesigns the value proposition from the customers’ point of view. |
| Case C | A developer of a C2C (customer-to-customer) e-business solution that connects buyers and sellers of second-hand consumer products (i.e., used books, clothing, consumer electronics, etc.) through social media. The source of the business idea was a perceived increase raise in sustainability awareness among middle and upper classes, especially in younger segments. The entrepreneur observed that Facebook, the almost universal social media outlet at the time, was sporadically used to mediate exchanges in this context but, lacking the functionalities to support the transactions, the experience was awkward, at best. The source of innovation is based on external market opportunity. The entrepreneur conducted the strategy making effort supported by four colleagues and an academic expert. |
| Case D | This company was born as an idea to develop a platform to broker information about academic and professional events, linking senior university students and newly graduated professionals interested in continuous learning with organizers of academic events like conferences and workshops. The main source for this innovative idea was the perception by the entrepreneurs that they had the competence to successfully bridge the two sides of this platform market: they were new graduated academics with experience in organizing academic events. The entrepreneur enlisted a working group of four experts (a HR independent consultant, a potential investor with previous experience with BMs, an academic expert on BMI, and a potential user of the platform) to develop the strategy making effort that would subsidize the BM design. |