A CRITICAL ASSESSMENT OF BUSINESS MODEL RESEARCH

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Dear Laura, we would like to thank you sincerely for the suggestions and for the conditional acceptance of
this manuscript. We have implemented all your suggested changes. We added a one-page paragraph in the
introduction outlining the differences between this article and Zott et al. We cited Simon when referring to
imperfect information and bounded rationality. We split Table 1 into three tables, which are now called
Tables 1-3. We relabeled ex-Table 2 (now Table 4) to make it more clear. We changed the title of the figure
and the marks for the data points, hopefully that is clearer now. We added text and citations about collective
mental models. We propose the online appendix, as discussed. Thank you again! Please do not hesitate to
contact us if you have any further questions or comments. Best regards -----Chris
A CRITICAL ASSESSMENT OF BUSINESS MODEL RESEARCH

by
Lorenzo Massa
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Abstract
Ever since the Internet boom of the mid-1990s, firms have been experimenting with new ways of doing business and achieving their goals, which has led to a branching of the scholarly literature on business models. Three interpretations of the meaning and function of “business models” have emerged from the management literature: (1) business models as attributes of real firms, (2) business models as cognitive/linguistic schemas, and (3) business models as formal conceptual representations of how a business functions. Relatedly, a provocative debate about the relationship between business models and strategy has fascinated many scholars. We offer a critical review of this now vast business model literature with the goal of organizing the literature and achieving greater understanding of the larger picture in this increasingly important research area. In addition to complementing and extending prior reviews, we also aim at a second and more important contribution: We aim at identifying the reasons behind the apparent lack of agreement in the interpretation of business models, and the relationship between business models and strategy. Whether strategy scholars consider business model research a new field may be due to the fact that the business model perspective may be challenging the assumptions of traditional theories of value creation and capture by focusing on value creation on the demand side and supply side, rather than focusing on value creation on the supply side only as these theories have done. We conclude by discussing how the business model perspective can contribute to research in different fields, offering future research directions.

Keywords: business models; business model innovation; strategy; value creation and capture;
Introduction

Over the last five years of Strategic Management Society conferences, Academy of Management Annual Meetings, and DRUID conferences, business model research has been an area of lively discussion and inquiry, with panels and symposia witnessing the shift and progress of dozens of research paradigms. Yet at each of these large conferences, at least one panel, symposium, or debate has centered, not on these developing research streams, but on the very definition of the business model itself. In rooms filled to capacity with some of the most recognized scholars in the field, participants debate endlessly on what a business model actually “is,” rehashing the same arguments year after year while still disagreeing on whether the term stands alone or is simply synonymous with “strategy.” Surely, research into complex management and strategic topics cannot achieve meaningful progress until scholars agree on how to position and interpret their own individual works in the field. Toward that end, we critically review the last two decades of business model literature. We argue that terminology has not kept pace with new ways of doing business and with how to describe business models, allowing the field to branch into different camps.

So what is a business model? At a very general and intuitive level, a business model is a description of an organization and how that organization functions in achieving its goals (e.g., profitability, growth, social impact,...). However, beyond this intuitive level, there is a lack of agreement among scholars on more operational definitions of a business model (Zott et al., 2011; Klang et al., 2014; Wirtz et al., 2016), which we will discuss extensively below.

Indeed, over the last two decades, the business model has become an increasingly important concept, particularly in the fields of technology and innovation management (Massa & Tucci, 2014; Tripsas & Gavetti, 2000), strategy (e.g., Casadesus-Masanell & Zhu, 2013; Teece,
2010) and, more recently, environmental sustainability (London & Hart, 2004; Schaltegger, Lüdeke-Freund, & Hansen, 2012) and social entrepreneurship (e.g., Seelos & Mair, 2007). Somewhat reflective of this diversity of fields, the definitions of a business model have ranged from “stories that explain how enterprises work” (Magretta, 2002, p.4) to “a system of interdependent activities that transcends the focal firm and spans its boundaries” (Zott & Amit, 2010, p. 216) and to “a business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value” (Teece, 2010, p. 179). The concept has helped scholars and managers articulate and explore intellectually interesting questions in diverse fields.

There have been some criticisms of the business model as a concept by some scholars (e.g., Doganova & Eyquem-Renault, 2009; Porter, 2001; Shafer et al., 2005). For example, according to Porter (2001), “the definition of a business model is murky at best. Most often, it seems to refer to a loose conception of how a company does business and generates revenue, [...]” (p.73) serving as “an invitation for faulty thinking and self delusion” (Porter, 2001, p.73). Despite such passionate criticisms, the existence of which we explain below, a consensus has been emerging on the importance of business models for management practice, theory, and policy (e.g., Klang et al., 2014; Demil, Lecoq, Ricart & Zott, 2015; Wirtz et al., 2016). There are several arguments scholars and practitioners have given to defend the business model as a concept.

First, business models appear to have become important for competitiveness, constitute a strategic priority for managers in diverse industries, and may be a source of above normal returns (Chesbrough, 2007a, 2007b; IBM, 2006; Ireland, Hitt, Camp, & Sexton, 2001; Johnson, Christensen, & Kagermann, 2008). Additionally, anecdotal examples of extraordinarily
profitable business models are not uncommon. Witness Google, which rode a paid-listing advertising business model to prosperity (Afuah, 2014) and Xerox, which chose to lease its Xerox 914 copier rather than sell it, enabling the firm to become one of the most profitable companies at the time (Chesbrough & Rosenbloom, 2002). These successful ways that certain organizations achieved their goals attracted managerial and scholarly attention.

Second, business models may represent a new dimension of innovation that complements traditional ones such as product, process, and organizational innovation, thus broadening the boundaries of innovation-related phenomena and, accordingly, theories of innovation (Casadesus-Masanell & Zhu, 2013; Massa & Tucci, 2014). For example, platform businesses and related business models often do not necessarily focus on the creation of a tangible product sold through a traditional sales channel (i.e., a more “traditional” business model) (Cennamo & Santalo, 2013). Rather they enable value, by curating and governing social and economic interactions (Choudary, 2015). This additional way of thinking about what can be innovated has also raised practitioner and scholarly interest.

Third, larger forces at the macro level, such as Internet technology and globalization, are blurring the distinction between industries, lowering barriers to entry, and potentially leading to more intensive rivalry (Gambardella & Torrisi, 1998; Gambardella & McGahan, 2010; Hacklin, Marxt & Fahrni, 2009), forcing companies to rethink and redesign how they are achieving their goals (profitability, growth, social impact . . .). This convergence phenomenon adds urgency to managers in incumbent firms understanding business model reconfiguration in their firms, in addition to entrepreneurs understanding the design of new business models to take advantage of new opportunities (Kim & Min, 2015; Massa & Tucci, 2014; Osiyevskyy & Dewald, 2015).

Fourth, scholars and managers interested in social and environmental value creation—in
addition to economic value creation—are increasingly utilizing the business model concept (e.g., Dohrmann, Raith & Siebold, 2015; Jenkins et al., 2011; Michelini & Fiorentino, 2012).

Opportunities exist to design business models able to realign organizations' search for profits with innovations that also benefit the environment and society, including initiatives in contexts of deep poverty and low income markets (Lovins, Lovins & Hawkens, 1999; Seelos & Mair, 2007; Lüdeke-Freund, Bocken, Brent, Massa & Musango, 2016).

The above arguments have attracted the attention of many scholars. Zott, Amit and Massa (2011) examined the evolution of the use of the term “business model” and found that, starting from the mid 1990s, there was an explosion of articles about business models, including scientific works published in peer-reviewed journals. Our longitudinal analysis of the number of articles published that include the term “business model” reveals that such a trend continued through 2015 and beyond (Figure 1). As a consequence there is a vast—albeit fragmented—body of literature now published on business models.

We critically review this body of work with the goals of organizing the literature and achieving greater understanding of the larger picture in this increasingly important research area. In addition to complementing and extending prior reviews (e.g., Zott et al. 2011; Klang et al., 2014; Wirtz et al., 2016), we also aim at a second and more important contribution: We aim at identifying the reasons behind the apparent lack of agreement in the interpretation of business models, and the relationship between business models and strategy. Our assessment of the literature suggests that the four arguments outlined above have led to a proliferation of
experimentation by organizations in how they achieve their goals. These experiments have been studied from a variety of angles while the basic terminology has not kept up with these experiments. The branching of the literature over the years can be divided into three basic interpretations of what a business model is: (1) as an attribute of a firm; (2) as a cognitive or linguistic schema; and (3) as a formal conceptual representation describing the activities of a firm.

In addition, the business model concept may be challenging assumptions of traditional theories of value creation and value capture, two terms that are often used to describe business models. Traditional theories—which were developed well before the above four arguments / trends became evident—assume away (or did not acknowledge) value creation in the demand side of the demand and supply equation, focusing on the supply side and limiting competitive advantage to a single source. That is, according to traditional theories of strategy, such as the resource-based view of the firm or the positioning view, value creation is a supply-side phenomenon in which value is created exclusively by producers, not by customers; and competitive advantage is single-sourced—resource-based only or activities-based only (Barney, 1991; Peteraf, 1993; Porter, 1980, 1985, 1996). Contrast this with the perspective building on the business model concept where value creation is both a supply-side and demand-side phenomenon—where value is created not only by producers, but also by customers and other members of their value creation ecosystems. Additionally, in this perspective, competitive advantage can be multi-sourced—that is, competitive advantage can be resource-based and activities-based, in the supply side and/or demand side.

Thus, in this article we not only propose reasons why cumulative knowledge in the field is difficult, we also take the provocative position that business model research does have some
unique characteristics that distinguish it from traditional perspectives in strategy research. In that sense, we both complement and extend prior reviews. Zott et al (2011) document the historical emergence of the construct, walking the reader through its emergence and diffusion. In doing so, they identify research “silos” or lines of inquiry based on the phenomena of interest to the various researchers, e.g., e-business, strategic issues, and innovation / technology management. They identify—despite the conceptual differences among researchers in different silos—some emerging themes that they suggest might constitute a common ground across various conceptualizations on the business model, notably the business model as a new unit of analysis, centered on activities, emphasizing value creation, and offering a systemic view on organizations. Our review complements Zott et al. by explicitly bringing the construct validity problem related to different understandings of the word “model” to the surface. We also shed light on the relation between business model and strategy research by pointing to the value creation and capture dimensions and by more explicitly linking the business model to the emergent literature on the demand-side of strategy. These aspects also help understand how this review complements other recent reviews on the business model. Wirtz et al. (2015) is very much in the spirit of Zott et al. (2011), emphasizing the historical development of the field in different literature streams and looking for classification methods along the lines of the most popular research topics and methods, e.g., 79% conceptual articles. Klang et al. emphasizes semiotics (“signs and symbols used in social life”) and syntactics (“the relations among multiple signs”) in trying to explain why scholars criticize the concept of a business model. They point out sources of criticism, such as armchair theorizing, which they call “Temptation of not leaving the drawing board,” or adapting business models to local contexts, which they call “pride of observation.” In contrast, we are focusing in the first part of our paper on the construct validity
issue of interpretations of the term, and the second part on the business model / strategy debate.

We begin this paper with an assessment of the different interpretations of business models based on three main groups of works based on the definition and function of a business model that have evolved simultaneously over the decades. We then examine the fundamental question: What relationship, if any, is there between business models and strategy? It is our contention that the business model concept adds value to the “traditional” strategy literature by expanding the meaning of “value creation” (to include entirely new markets for / with users and members of their ecosystems) and “value capture” (to include monetization), and by relaxing assumptions that often went unchallenged when those theories were developed. Finally, we examine the use of the concept of business models in research in fields as diverse as strategic management and environmental sustainability, and suggest future research directions.

**Interpretations of Business Models**

A sampling of some of the most cited and most frequently used definitions of business models is shown in Table 1. The diversity of definitions reflects—in part—the fact that scholars have studied business models employing different subject matter lenses and, in doing that, they have offered different, sometimes conflicting, interpretations of what the term business model means and is used for. To arrive at Table 1, as discussed in our online methodological appendix, we started with 2754 articles about business models and analyzed in detail 216 articles published between 1995 and 2016 in leading management and practitioner outlets in which the term “business model” appeared in the title, abstract, or keywords, and who treated the business model in a non-trivial way. With two coders, we examined the definitions adopted by the authors and how they described the function of the business model. By doing that, we were able to group
the literature into three main groups, which we are calling interpretations of the function of the business model, or interpretations for short. In Tables 1-3, we emphasize the most recently published 40 articles, plus three “classics” (see online methodological appendix for more details).

Our three major interpretations are: (1) Business models as attributes of real firms having a direct real impact on business operations, (2) business models as cognitive/linguistic schema and (3) business models as formal conceptual representations/descriptions of how an organization functions. Arguably, these are conceptually distinct interpretations of the role of the business model, which point to different phenomena, respectively (1) how firms do business; (2) how the way firms do business is interpreted by organizational members; and (3) how (1) and (2) could be represented by means of formal conceptualizations, such as symbolic, mathematical, or graphical depictions. We now explore each interpretation.

Business models are attributes of real firms

In this interpretation, a business model is seen as an empirical phenomenon or attribute of real firms (Table 1). These attributes are determined by empirically—as opposed to conceptually—classifying real world manifestations of organizations as a function of their measured similarity on observed variables. This classification effort has frequently supported the identification of business model archetypes, and the introduction of terms such as razor-and-blade, advertising, subscription, freemium, barter, brokerage, disintermediation, platform, crowdsourcing, pay-as-you-go, and so on to describe business models (Casadesus-Masanell & Zhu, 2010; Johnson, 2010; McGrath, 2010; Rappa, 2001).
In trying to understand and articulate these attributes of real firms, some scholars have suggested that there are two major parts to each business model: The set of activities that the firm performs, and the outcomes of performing these activities (Casadesus-Masanell & Ricart, 2010; Casadesus-Masanell & Zhu, 2010). The set of activities that a firm chooses to perform, when it performs them, how it performs them, who performs them, and the resources/capabilities that it chooses to use determine the outcome (e.g., Afuah, 2004; Amit & Zott, 2001). That outcome is usually the value created and/or captured (Casadesus-Masanell & Ricart, 2010; Casadesus-Masanell & Zhu, 2010; Markides, 2013). As shown in Table 1, definitions of business models in the “business model as attribute of real firm” interpretation range from a “set of activities, as well as the resources and capabilities to perform them—either within the firm, or beyond it through cooperation with partners, suppliers or customers,” (Zott & Amit, 2010: 217) to the “firm’s underlying core logic and strategic choices for creating and capturing value within a value network,” (Dahan et al., 2010: 328 building on Shafer, Smith & Linder, 2005).

In the research that subscribes to this interpretation of business models, large-sample empirical studies typically ascribe to a positivistic stance and test hypotheses related to business model variables that are measured at the level of firms (primarily), markets, or even society. Research has included efforts to empirically test hypotheses about the role of business models in explaining differences in firm performance as well as inductive approaches to understand the sources of value creation inherent in innovative business models. For example, in an inductive study, Amit and Zott (2001) identify four potential sources of value creation in e-business: efficiency, complementarities, lock-in, and novelty. Focusing on electronic markets as a research
context, Zott and Amit (2007) find that business models that embed novelty elements in their configurations (sets of activities) perform better than those that did not. This relationship was stable across different environmental regimes. Weill, Malone and Apel (2011) analyze the performance of different business models in U.S. markets over a 12-year period from 1997 to 2009, and find that that business models based on innovation and intellectual property tend to outperform other business models. Qualitative empirical studies also subscribe to a view of the business model as a real attribute of firms. For example, Sosna, Trevinyo-Rodríguez and Velamuri (2010) studied Kiluva Group, a Spanish family-owned dietary products business. They conducted interviews with both internal and external stakeholders, collected company documents, records, and newspaper articles and documented the role of experimentation and trial-and-error learning in changing an existing business model, which was conceptualized as changing an attribute of the organization.

Other studies have been concerned with the impact of novel ways of organizing business activities on the dynamics of industries, and built on the early notion of disruptive technologies/innovation (Christensen, 1997). For example, Johnson (2010)—also quoted by Martins and colleagues—notes that “of the 26 companies that have been founded since 1984 and entered the Fortune 500 list from 1997 to 2007, a majority owed their success to business model innovations that either transformed existing industries or created new ones” (Martins, Rindova & Greenbaum 2015). Demil and colleagues (2015) add that in addition to changing industry dynamics, novel business models may have a profound impact on and, indeed, change “the way people live, work, consume, interact with each other” (p. 2) and refer to examples such as Airbnb, Apple, eBay, Facebook, Google, or the Grameen Bank. In other words, the business
model is associated with the organization (attribute of Airbnb, for example), which then has an impact on society.

The literature that subscribes to the “business models as attributes of real firms” interpretation has also sought to shed light on the role of business models in competitive dynamics and (superior) performance. For example, Casadesus-Masanell and Zhu (2010) analyze the competitive interactions between a high-quality incumbent facing a low quality ad-sponsored competitor, and show that the optimal response to an ad-sponsored (free or cheap for users, charge advertisers) rival often entails business model reconfiguration. They suggest that when there is an ad-sponsored entrant, the incumbent should consider competing through a subscription-based (pay for unlimited service) or ad-sponsored model rather than a mixed or dual model due to cannibalization and endogenous vertical differentiation concerns. Relatedly, Brea-Solis, Casadesus-Masanell & Grifell-Tatje’ (2015) develop an analytical framework based on the economics of business performance to provide quantitative insights into the link between a firm’s business model choices and the building of competitive advantage. Their key insight is that, while the choice of a particular business model is important to explain competitive advantage, it is the particular implementation of a business model (i.e., the degree of key choices such as relative emphasis on customer service or new technology even keeping the same business model) that explains performance. Aspara, Hietanen, & Tikkanen (2010) empirically analyze the differences in average profitable growth across firms that differ in their strategic orientations and find that firms that have a strong strategic emphasis on business model innovation, as well as a strong emphasis on replication, exhibit a higher average value of profitable growth than firms that do not strategically emphasize either dimensions. In all of these cases, the business model is considered to be an attribute of the firm itself.
Scholars who subscribe to this interpretation of a business model as an attribute of a real firm have also devoted considerable attention to the issue of competing with two business models simultaneously (e.g., Markides, 2013). They note that many incumbent firms respond to the emergence of a disruptive business model by adding a new business model to their existing business model rather than completely replacing their old one. For example, most airline companies responded to entrants in the low-cost, point-to-point segment of the airline market by adopting such techniques, often under a new brand name. Companies in fast-moving consumer goods did the same in response to the entrance of low-cost private label competitors.

While the idea of competing with dual business models seems attractive to both managers and scholars, it raises several strategic issues and challenges. For example, a fundamental strategy challenge related to managing two business models in the same market is that the two models (and underlying value chains) could conflict with one another (Markides & Charitou, 2004; Porter, 1996). Conflicts could be of various types, the most obvious one being the risk of jeopardizing the existing business (Velu & Stiles, 2013). For example, by trying to sell on the Internet, a brokerage firm may alienate its existing distributors (e.g., brokers), creating channel conflict. This was one of the earliest observations about e-commerce channels and was used to explain the difference between Dell’s and Compaq’s business models (Afuah & Tucci, 2002).

The presence of conflicts of different types means that managers within the existing organization will often find that the new business model will grow at those same managers’ expense. As a function of two fundamental contingencies, namely the nature of the conflicts between the established business and the innovation (the new business model) on one hand, and the similarity between the two business models on the other, Markides and Charitou (2004) have suggested four possible strategies: Separation, Integration, Phased Separation, and Phased Integration. Markides and
Oyon (2010) take the analysis one step further by analyzing whether the incumbent should attempt to copy the business model of the “disruptor” and suggest that on average that is not a successful strategy; rather, the second business model should attempt to “disrupt the disruptor” (p. 27). We will discuss the relationship between business models and strategy in a separate section further below as it is a highly important topic. For now, it is enough to know that in the above work, the dual business models are both considered to be attributes of the companies in question.

Continuing with this theme, Kim and Min (2015) analyze the performance of store-based retailers that added online retailing as a new business model, and find that the presence of complementary assets between the existing and the new business model may lead to increased performance when the new business model is added early as part of the main business; however, if there are conflicting assets, incumbents should add the new business model as a separate, autonomous business.

Overall, in this interpretation, there is general agreement that business models—as attributes of real firms—involve performing value-adding activities to create and/or capture value. However, there is little agreement on which activities are important in business models and therefore should be performed, who performs the activities, how they are performed, when they are performed, where (at what level), and what resources are needed to perform them. Then there is the inconsistency about the outcome of performing these activities. While some scholars see the outcome of performing business model activities as being value created and captured, others see it as value creation only or value captured only. Then there is the issue of how different scholars define value created and captured (Lepak, Smith & Taylor, 2007). Finally, and importantly, there is the issue of whether business models as attributes of real firms are any
different from the strategies of these firms. As mentioned above, we will discuss this in a
separate section below. First, let us continue with the second of the three interpretations.

**The Business Model as a Cognitive/Linguistic Schema**

The idea behind the interpretation of business models as cognitive/linguistic schemas
(Table 2) is that managers do not hold real systems—e.g., real activities for creating and
capturing value, organizational structures, potential outcomes, and so on—in their minds when
making decisions. Rather, managers hold images of real systems—such as real business
models—that are shaped by managers’ own cognitive frames (Chesbrough & Rosenbloom, 2002;
March & Simon, 1958; Tripsas & Gavetti, 2000). Thus, much of the research that sees the
business model as a cognitive/linguistic schema is concerned with how business models are
interpreted by organizational members, and their role and manifestation in social (inter)-action,
including organization-level sense-making (Ring & Rands, 1989), environmental scanning and
sensing opportunities (Teece, 2007), and the cognitive antecedents of business model design and
innovation (Amit & Zott, 2015; Martins et al., 2015; Normann & Ramirez, 1993; Tikkanen,
Lamberg, Parvinen & Kallunki; 2005). In this sense, the business model can be considered a
dominant logic—a current thinking pattern or established belief or cognitive schema held by
managers in organizations (Bettis & Prahalad, 1995; Prahalad & Bettis, 1986).

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Martins et al. (2015) provide a comprehensive definition of business models as cognitive
scheme, and conceptualized them as “cognitive structures that consists of concepts and relations
among them that organize managerial understanding about the design of activities and exchanges that reflect the critical interdependencies and value creation relations in their firms’ exchange networks” (p. 105). In their interpretation, business models are schemas that organize managerial understanding of the design of firms’ value creating activity systems.

This definition is highly consistent with Zott et al.’s (2011) account of the properties which constitute the common ground of the various conceptualizations of business models that have been provided, and characterizing the construct “as a new unit of analysis, as a system-level concept, centered on activities, and focusing on value” (p.19). Other authors have suggested that cognitive representations of the business models are used by managers to solve challenges related to making sense of, as well as explore, opportunities for value creation and capture (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013; Loock & Hacklin, 2015).

Two classic examples illustrate this interpretation of business models as cognitive/linguistic schema. The first is Tripsas and Gavetti’s (2000) account of why Polaroid—a successful chemicals-based photography firm—failed in the face of digital photography. They argue that because Polaroid management’s cognitive frames were embedded in the firm’s very profitable razor-and-blade business model for creating and capturing value in the chemical photography era (cheap cameras, expensive film), the firm’s managers had a very difficult time making decisions that were favorable to the newer business models dictated by the newer and disruptive digital photography technologies (expensive cameras, no need for film). Images of the razor-and-blade business model in managers’ heads contributed to their failure to adopt new and more relevant business models (Benner & Tripsas, 2012; Tripsas, 2009; Tripsas & Gavetti, 2000).
The second example of business models as cognitive linguistic schema is Chesbrough and Rosenbloom’s (2002) study of Xerox Corporation and its Palo Alto Research Center (PARC). They studied 35 technology spin-offs that commercialized technology emanating from PARC over a period of 20 years, and noted that Xerox’s management consistently and implicitly evaluated the technical and economic potential of spin-off companies from PARC through its well-established business models that had worked well for mechanical copiers. Technical inventions from PARC that did not fit Xerox’s core logic of doing business tended to be perceived as less promising, and were eventually rejected or underfunded. In many cases, however, these same inventions became success stories when their relative inventors and contributors attempted to exploit their market potential independently of Xerox. Chesbrough and Rosenbloom (2002)—like Tripsas and Gavetti (2000)—suggested that, over time, organizational members develop cognitive representations or images of their business models and adopt them, for example, in evaluating new business opportunities.

The idea that managers hold *images* of real systems—not the real systems themselves—has a long tradition in management research, spanning theories of organizations (Eggers & Kaplan, 2009, 2013; March & Simon, 1958; Morgan, 1986), organizations as “interpretation systems” (Daft & Weick, 1984), organizational learning (Senge, 1990), strategy (Bettis & Prahalad, 1995; Prahalad & Bettis, 1986) as well as more general theories concerning cognition and industry belief systems (e.g., Porac, Ventresca & Mishina, 2002). Organizations are extraordinarily complex systems—in the sense of sharing characteristics typical of Level Eight on Boulding’s (1956) 9-level scale of complexity (Anderson, 1999)—operating in similarly complex environments (e.g., see Daft & Weick, 1984). As a result, managers are confronted with the
strategic imperative of understanding both their environment as well as their organization and its
identity in relationship to the external world (Gioia, Schultz & Corley, 2000).

Building on the rich tradition of students of cognition in organizations (see Eggers &
Kaplan, 2013, for a review), and the early business model insights from Tripsas and Gavetti
(2000) and Chesbrough and Rosenbloom (2002), other scholars have suggested that
organizational members (also) create mental models of their and others’ business models (e.g.,
Baden-Fuller & Morgan, 2010; Baden-Fuller & Haefliger, 2013; Loock & Hacklin, 2015;
Martins et al., 2015).

Overall, according to the proponents of the cognitive schema interpretation, the business
model is seen as an implicit mental schema (rather than having a material manifestation as a
property of firms or a formal conceptual representation), a cognitive structure that operates as a
focusing device, making decision making of boundedly-rational decision makers facing
conditions of imperfect information and cognitive complexity more efficient (e.g. see; Doz &
Kosonen, 2010; Prahalad & Bettis, 1986; Walsh, 1995). Thus one function of schemas is to
improve decision-making efficiency by simplifying and filtering information and stimuli. Loock
and Hacklin (2015) have proposed that this is achieved by configuring “simple rules” into a
coherent structure that would inform value creation and capture.

However, the same schema could become a source of inertia, an aspect that has been
variously emphasized by cognition research in strategy (e.g., see Ocasio, 2011; Porac &
Tschang, 2013) as well as by business models scholars (e.g., see Chesbrough, 2010; Tripsas &
Gavetti, 2000). Schemas tend to be self-reinforcing because the simplification they allow occurs
automatically, guiding decision makers to ignore discrepant (but perhaps relevant) information
and data gaps (which tend to be filled with typical information) in favor of more familiar or
readily available information (e.g., see Gioia, 1986). More recently Martins et al. (2015) suggest that business model schemas could be employed to also create images of future business models. They offer a theory of firm level cognitive processes for business model design and reconfiguration, and emphasize the role of two mechanisms—analogue reasoning and conceptual combination—which individuals use to make sense of novelty and design new artifacts.

This insight suggests that schemas are, to some extent, malleable cognitive devices that could be recombined and used as instruments in imaginative and generative thinking supporting the proactive depiction of new, novel, and innovative business models. In other words, mental modeling could also refer to “this capacity [...] rooted in the ability to imagine—to depict in the mind—both real world and imaginary situations, and to make inferences about future states of these situations based on current understandings, with and in the absence of physical instantiations of the things being reasoned about” (Nersessian, 2008, p. 91). In other words, business models in this interpretation are not fixed attributes of the firm, but instead reside in managers’ heads. Without knowing or grasping all of the activities the firm itself is engaged in, what is in the head of managers can be changed first and foremost through an ideation or imagination process.

A challenge in the research that interprets business models as cognitive schema is the choice of how to approach the unit of analysis. Reducing business models to mental models only held by an individual can be misleading. Although individuals hold mental models, these models are often rooted in the collective—in the shared beliefs and models of other members of their organizations (Kaplan, 2011; Martin et al., 1983; Martin, 1992; Walsh, 1995; Weick et al., 2005). How do organizational members, collectively, create a shared, albeit implicit,
understanding of their business model and how do they communicate it internally as well as externally? The answer may lie in considering not only the cognitive dimension (collective and individual) but also the linguistic one (communicating within the organization). A surface manifestation of cognitive schema (what others see) is represented by *narratives* and *linguistic schema* of the business models, as we will discuss next.

Organizations are permeated with narratives, some of which are business model-related (e.g., Magretta, 2002). According to Magretta (2002) business models “are, at heart, stories – stories that explain how enterprises work. A good business model answers Peter Drucker’s age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?” (Magretta, 2002; p. 4). Narratives and linguistic schemas—like mental models and metaphors (e.g., see Morgan, 1986)—are used by individuals to infuse ambiguous situations with meaning (Brown, 2000). However they also have an important role in coordinating and facilitating social action within and outside the organization. Narratives create shared understanding and allow organizational members to communicate their business models both inside and outside the organization. Internally, narrative dynamics operate to drive the development of the firm’s social order, rules, organizational structure, hierarchy, and meaning-making. Downing (2005) discusses the role of narratives in the coproduction of organizations and identities. George and Bock (2011) offer an excellent discussion of the role of narratives of the business models in entrepreneurial action and provide empirical evidence of their use and value.
Perkman & Spicer (2010) suggest that because of their forward looking character, business model narratives play an important role in inducing expectations among interested constituents about how a business’ future might play out. Narratives of the business model can be constructed by managers and entrepreneurs and used not only to simplify cognition, but also as a communication device that could allow achieving various goals, such as persuading external audiences, creating a sense of legitimacy around the venture (for example by drawing analogies between a venture’s business model and the business model of a successful firm: “We want to be the Uber of…”) or guiding social action (for example by focusing attention on what to consider in decision making and instructing on how to operate). Doganova and Eyquem-Renault (2009) suggest that business model narratives can work as boundary objects capable of providing a solution to the coordination challenges of innovation, in particular when agency is distributed across heterogeneous actors, such as in innovation projects that are more open.

Business Models as Formal Conceptual Representations/Descriptions

Situated in between the two anchor points of the interpretation of business models as attributes of real entities and the interpretation of business models as cognitive and linguistic schemas (i.e., narratives) is the interpretation of business models as formal conceptual representations (Table 3). Here, we explicitly use the adjective formal to stress their difference from cognitive and linguistic schema. While they are both models, in the sense of simplifications of a real system (see below), they differ in that the former are implicit, not detailed, often unspoken or transmitted at a high level, while the latter are explicit, written down in pictorial, mathematical, or symbolic form.
The interpretation of business models as formal conceptual representations could be traced back to some of the early writings on business models. For example, Osterwalder, Pigneur and Tucci (2005), in referring to the place for business models within the Information Systems literature, suggested that a business model is a “blueprint of how a company does business. It is the translation of strategic issues, such as strategic positioning and strategic goals into a conceptual model that explicitly states how the business functions” (p. 3, emphasis added).

Conceptual models, in turn, are the result of the “activity of formally describing some aspects of the physical and social world around us for the purposes of understanding and communication” (Myopulos, 1992, p. 2, emphasis added). When a research study attempts to describe a model using detailed descriptions of some aspects of the organization’s activities, we would classify that as a formal conceptual representation. Several definitions of the business model in Table 3 indeed point to the descriptive nature of business models, implicitly stressing their manifestation as formal conceptual representations of how the firm is proposing to achieve its goals.

Why would scholars or even managers use formal conceptualizations (models) to represent business models? One of the main reasons is the complexity of the phenomenon. While the complexity of representing how firms do business may be a factor that influences all three interpretations of business models and inability to come to a common understanding of the literature, the use of formal conceptual representations is especially conducive for trying to make sense of the complexity of business models by highlighting the most important elements for use by managers and scholars (Burton & Obel, 1995; Sterman, 2000). Formal conceptual representations can be used to articulate, challenge, transfer, and recombine the tacit knowledge
at the background of implicitly understood cognitive schema, heuristics, narratives and other organizationally embedded manifestations of business models. In this sense, Chesbrough (2010) has suggested that formal and conceptual models may allow escaping dominant logic traps by raising awareness of one’s own assumptions and/or challenging them.

One way to understand formal conceptual representations (models) is as simplifications of something. Generally speaking, formal conceptual representations are employed because doing so makes dealing with real systems and phenomena simpler. In general terms, to create a conceptual representation (model) is to abstract and simplify what is (considered to be) “unnecessary” and “minor” in favor of what is (considered to be) core, with the goal of improving tractability, understanding, as well as our ability to measure, predict and communicate. This view of conceptual representations (models) as simplifications suggests that, at least in theory, there could be different possible representations of the same thing, depending on aspects such as what is assumed away, what is formally described, and how it is described (e.g., visually vs. verbally).

Consider the example of a geographical map (a slightly more complex example would be a model of, say, the weather or a cell). A geographical map could itself be considered a simplified representation of something, in this case, a given geographical region. However, maps of the same region exist at different scales (e.g., 1:10,000 vs. 1:50,000), report different information (e.g., political borders, fire risks), and with different styles of communication (e.g., adopting different color codes, or symbols whose meaning is captured in the legend). A similar situation may transpire with formal conceptual representations of the business model: there could be differences in level of abstraction (the “scale” of the representation), in content (i.e., what is formally described/represented and what is omitted) and, theoretically, in semantics (the signs,
symbols, text, as well as other codes that are adopted and their meaning, although in our review we did not find much evidence of this distinction). Let us examine each of these in turn.

First, the way a firm does business could be represented at varying degrees of depth depending on the *level of abstraction* or scale chosen (Massa and Tucci, 2014; Massa, Tucci & Viscusi, forthcoming). Closer to the level of the firm is a description of the business model as a system of interdependent activities (Amit & Zott, 2001), as a system of interdependent choices and their consequences (Casadesus-Masanell & Ricart, 2010), or the fundamental processes run in a business (e.g., the “business process viewpoint” as described in Gordjin and Akkermans, 2003, and in general in the fields of requirements engineering or information systems).

At higher levels of abstraction are situated so-called meta-models of business models, which are representations of the business model obtained by enumerating and clarifying its essential components. A popular example among managers and practitioners is the Business Model Canvas (Osterwalder, 2004; Osterwalder & Pigneur, 2010). The Business Model Canvas offers a scaled-down representation of a “generic” business model assumed to be valid for describing many firms, that enumerates and illustrates what the authors consider to be the critical components of a business model (Osterwalder & Pigneur, 2010). Earlier work also models business models by focusing on the critical components of a business model (Afuah & Tucci, 2000; Afuah, 2004). Johnson, Christensen, and Kagermann (2008), later proposed a representation of the business model based on four components, and more recently, Gassmann, Frankenberger and Csik (2014) propose four dimensions to represent a business model: *Who*, which refers to the targeted customer group, *What*, referring to the value proposition, *How*, referring to the activities and capabilities employed to create the value proposition and, finally,
Value, or an explicit explanation of how money is made in the business, including how revenues are collected and how costs are generated.

Second, content may also vary. For example, researchers interested in sustainability have tended to include in their formal representations of the business model information relative to environmental value creation and seen the environment and local communities as key stakeholders (e.g., Bocken et al., 2014). These components have typically been ignored by scholars asking different research questions for which modeling environmental impact is not critical. It is not true scholars in different fields were only studying firms not having any environmental impact (or impact on local communities). Every firm has environmental impact whether it is explicitly acknowledged or not. Rather, environmental impact may be omitted in a representation of the business model if it is believed that it does not represent a core element.

Morris, Schindenhutte and Allen (2005) have cross-compared 19 perspectives on business model components, including early work focusing on electronic commerce (e.g., Mahadevan 2000) and work in requirements engineering (e.g., Gordjin & Akkermans, 2003) noticing that “the perspectives are notable both for their similarities and differences” (p.727). They further highlight that “the number of components mentioned varies from four to eight. A total of 24 different items are mentioned as possible components, with 15 receiving multiple mentions. The most frequently cited are the firm’s value offering (11), economic model (10), customer interface/relationship (8), partner network/roles (7), internal infrastructure/connected activities (6), and target markets (5). Some items overlap, such as customer relationships and the firm’s partner network or the firm’s revenue sources, products, and value offering” (p.727).

Wirtz et al. (2016) reviewed 681 articles mentioning the business model and—consistent with, for example, Morris et al. (2005), Osterwalder et al. (2005), Shafer et al. (2005), Zott et al.
(2011), and Klang et al. (2014)—stress the heterogeneity of the content of business models across the literature as manifested by disagreement on its constituent elements. For example, Wirtz et al. (2016, p. 42), write that “The most agreement among the authors regarding the components is found with market offerings and resources. There seems to be a strong consensus about the importance of those components. There is little or no agreement with regards to the areas of strategy, revenue and procurement.“ Descriptions of different components represent formal conceptual representations of firms’ business models.

For the third category, semantics, in this case, the set of constructs, symbols and the rules for combining them (see Wand & Weber, 2002), Gordjin and Akkermans (2003) provide a modeling language that they refer to as the “e3-value ontology.” This language helps model how economic value is created and exchanged within a network of actors. The “e3-value ontology” and more broadly the domain of conceptual modeling techniques, suggests that formal modeling should also be concerned with semantics, even if to-date there has been less work in the area related to business models.

Overall, the literature in business models as formal conceptual representations suggests the following: (1) there have been many attempts to offer simplified representations of the business model by pointing to its fundamental components, and (2) there is a lack of agreement on what the critical components are. Even when scholars mention conceptually similar components, they do not employ the same terminology.

**Summary and implications of the three interpretations**

These three interpretations of the role and function of the business model point to the importance of *construct validity* in business model research (Bagozi & Philips, 1991). As noted
above, scholars have adopted the same term, the business model, in referring to: (1) attributes of real firms variously influencing their performance in markets; (2) cognitive schemas (and linguistic schemas as observable manifestations), and (3) formal (scaled-down) conceptual representations of organizational activities. In our view, this fact represents a major source of confusion. These interpretations of the business model are rarely discussed, and possibly not even completely recognized. Few papers explicitly mention the issue, and fewer still set clear boundaries for their study by explicitly stating which interpretation(s) is assumed. The three interpretations point to phenomena that are distinct from each other in terms of units of analysis and presumed function of the business model. As Tables 1-3 show, the appropriate units of analysis are, respectively, (1) the organizations themselves and their network of exchange partners; (2) individual and collective minds and discourse; and (3) the model itself and the subject of modeling. Functions range from (1) having an impact on organizational performance, to (2) shaping opportunity recognition and shared identity, to (3) isolating focal elements of an organization’s activities and possibly their dynamics. Thus, more explicitly considering the differences across the three interpretations also has the potential to inform scholars how to start building appropriate theoretical foundations business model research as a function of which interpretation is assumed.

One way of solving the construct validity issue would simply be to more explicitly acknowledge the existence of the three interpretations and make the effort of explaining which view of the business model is assumed in each study, perhaps adopting different terms that would support disambiguation, such as business models as attributes, business models as cognitive schema and business models as formal conceptual representations. This could also represent an opportunity for starting to investigate the nature of the relationship between the
three interpretations and the different meanings of the word “model” (for example, a model being understood as (1) the core logic with which an organization achieves its goals, (2) the dominant logic capturing how a firm is believed to operate, and (3) as a scaled-down simplified formal conceptual representation, respectively).

To conclude this section, not only do scholars not always share the same interpretation of the term business models (as seen above), but even those attempting to create formal conceptualizations (models) disagree on how to represent them when it comes to business models. This lack of agreement and understanding is an essential part of the relationship between business models and strategy to which we now turn.

The Relationship Between Business Models and Strategy: The Debate

The fascinating debate about the relationship between business models and strategy has been characterized by two main positions. On the one hand, skeptics suggest that business model research is just “old wine in a new bottle,” fundamentally moving under a new umbrella term, questions and concerns—and perhaps even insights—that have historically been the cornerstones of research in strategy, thus adding very little to our knowledge (e.g., see Porter, 2001). Business model research adds nothing to our understanding of strategy, and no new theories, beyond established ones such as the positioning view or the resource-based view (RBV) need to be developed to explore business model questions. The general conclusion by those sharing this perspective is that business model research should be abandoned, or at the very least, that researchers should stop referring to it as a separate literature stream.

On the other hand, supporters of the business model as a separate field do acknowledge an
overlap with strategy but also suggest that business models and strategy are distinct constructs, warranting attention both in isolation as well as jointly (Zott & Amit, 2008). Their general position is that the business model allows asking (and hopefully answering) new research questions that have historically been overlooked by what many would consider “more normal theorizing in strategy” (Priem, 2007). According to this view, research on the business model has the potential to shed light on important issues that have remained relatively unexplored, adding to existing knowledge (Amit & Zott, 2013; McGrath, 2010; Teece, 2010). Who is right? While we will eventually come down on the side of business model research adding value across multiple fields, including strategy, let us explore both sides (which we call “perspectives” below) in this debate.

**Business Models are Strategy in “New Bottles”**

Our first line of inquiry is the research stream supporting the argument that business models are new bottles used to peddle strategy concepts. This research stream has been characterized by efforts to shed light on the role of business models in explaining value captured relative to competition—a staple of strategy research. For example, Casadesus-Masanell & Ricart (2007, 2010), who see the business model through a strategy lens, suggest that firms compete through business models. Other studies sharing a paradigmatically similar perspective on value capture have focused on the role of the business models in explaining the sustainability of first-mover advantages in relationship to the business models adopted by late entrants (Markides & Sosa, 2013; Casadesus-Masanell & Zhu, 2013), the dynamics associated with competing through business models (Casadesus-Masanell & Ricart, 2007) or those related to adopting more than one business model simultaneously (Markides & Charitou, 2004; Markides, 2013).

What is common among these studies is the emphasis on the business model as a means to
compete, whether in existing markets or in emerging ones. This perspective tends to ignore the mechanisms and dynamics through which value is created in the first place. Value is often assumed to be exogenous (e.g., the size of the market is given). The managerial task, and the role of the business model, is reduced to a focus on capturing a part of that value relative to the competition. McGrath (2010) suggests that this perspective may resonate well with traditional strategy ideas—in particular those influenced by the positioning school or the capability view—for an additional reason: a static perspective on strategy and markets.

The positioning school has long proposed that what firms need to do to succeed is to find a truly differentiated and defensible position within an industry and execute relentlessly against that position. The capability school argues instead that advantage stems from having difficult-to-copy resources that are often built up over long periods of time. The dilemma is that neither of these perspectives give management much latitude for action. Having selected a position in an industry, it is hard to pluck a firm out and move it to some other position; similarly, after a firm has spent time and effort assembling a compelling resource endowment, order of magnitude shifts are quite difficult (McGrath, 2010, p.248).

That is, even when there is some focus on value created for the customer, in this perspective, all that companies have to do is to create incrementally more value than the competition (e.g., see Normann & Ramirez, 1993, 1994). The essence of capturing value relative to rivals is to have a competitive advantage. Competitive advantage rests on uniqueness. According to Porter (1996) “a company can outperform its rivals only if it can establish a difference that it can preserve. It must deliver greater value to the customer or create comparable value at lower cost, or do both.” (p.62). According to Teece (2010), this perspective further assumes that “if value is delivered, customers will always pay for it.” (p.172). There is no need to worry about the creation of radically new, paradigmatically different value (value is already existent in markets, as aggregate demand), nor about convincing customers to pay for it. The fundamental problem is that of defending against competitors and crafting the right business model is one way to do that.
The conceptual overlap with the mainstream strategic management field is evident not only in
the focus on competition but also in the convergence on embracing activity systems (Zott & Amit,
2010; Porter, 1996) and the use of activity systems to explain the foundations of competitive
advantage. Casadesus-Masane11l and Ricart (2010) have pointed to the set of interdependent choices
to explain business models, while Zott and Amit (2010) have more explicitly advocated activity
systems. The relationship between managerial choices and bundles of activities is clear in that, to be
implemented, choices require the firm to perform certain activities. This view is conceptually similar
with the activity-system view in strategy. In the words of Porter,

ultimately, all the differences between companies in cost or price derive from the
hundreds of activities required to create, produce, sell, and deliver their products and
services. [...] Cost is generated in performing activities. Similarly, differentiation
arises from both the choice of activities and how they are performed. Activities, then,
are the basic unit of competitive advantage. Overall companies’ advantage or
disadvantage results from all a company’s activities, not only a few (1996, p.62).

The activity system view suggests that in the same way in which activities can be
configured to achieve cost leadership or differentiation, a business model—or more specifically,
the architectural logic of its activity system (Zott & Amit, 2010)—can be designed around
efficiency or novelty design themes (Zott & Amit, 2007, 2008). These considerations highlight
the possibility of the existence of a strong conceptual overlap between cost leadership and
efficiency on one hand, and differentiation and novelty on the other; both pairs represent value
capture mechanisms and both point to activity systems. In this sense, business models—or at
least this particular perspective on it—and strategy—or at least a theory of it—may share a
similar perspective on value capture, so similar that the business model may appear to be
superfluous.

And yet, even in this case, things may not be that straightforward. As an example, compare
the low-cost carriers Southwest Airlines and Ryanair. While they appear to manifest similar
activity system architectures—both of them revolving around efficiency design (cost leadership)—many people would note that there are considerable differences in their sources of revenues (for example, Ryanair’s revenue sharing agreements with concessions at minor airports if the number of passengers exceed a target). This, and similar considerations, raise some important questions: how and where are revenues collected? Would asking (and answering) questions such as these help better understand how companies do or could capture value above their costs? Our review reveals that questions such as these have been at the center of a second perspective on business models—one that sees business models as a separate field.

**Business Models as a Separate Field from Strategy**

This second perspective has progressively emerged out of two related considerations. First, scholars have slowly started to accept that it is far from clear that if value is delivered to customers, customers will pay for it. According to Teece (2010), this is evident if one looks at “Internet companies, where the creation of revenue streams is often most perplexing because of customer expectations that basic services should be free. Figuring out how to earn revenues (i.e., capture value) from the provision of information to users/customers is a key (but not the only) element of business model design in the information sector” (p.172). And yet, traditional strategy research has not tackled these issues in a serious way.

In contrast, business model scholars have looked to the business model in trying to answer questions about how to capture value from customers (i.e., “monetize” value), which is how to craft one or multiple revenue streams. For example, Chesbrough and Rosenbloom (2002) have suggested that innovative technologies and ideas, *per se*, have no economic value, but only latent value. It is the function of the business model to realize part of that value by connecting these technologies and
ideas to the realization of economic output in markets. In some instances, earning revenues remains complex. The online news industry, for example, has not yet found a dominant business model to earn revenues (Cozzolino & Giarratana, 2014). In 2015, WhatsApp, the provider of a very successful messenger service for smartphones, declared it would pivot its business model and move away from trying to monetize by means of micropayments (0.89 USD a year). While during the old industrial economy, the essence of having a business model may well have been “finding a customer,” today getting paid for creating value—even in the absence of market externalities—seems to be less than trivial.

Second, scholars realized that companies such as Nespresso, Ikea, and Southwest Airlines—just to mention some recurrent iconic and very successful cases—did not simply focus on capturing a part of some exogenously given value. They rather reinvented value (Normann & Ramirez, 1993), often beyond traditional market boundaries, creating new markets where none existed before (Kim & Mauborgne, 2005). These phenomena raise questions that are difficult to answer within the boundaries of mainstream strategy ideas and theories. How is value reinvented—that is, what do firms do when they reinvent value? More broadly, how is value created in the first place (Priem, 2007)?

In essence, in this second perspective, business models and strategy are different in at least three fundamental ways. First, in business model research, value creation comes first—the business model starts by creating value for the customer or user, or even multiple exchange partners or stakeholders (e.g., see Tantalo & Priem, 2014), and “constructs the model around delivering that value” (Chesbrough & Rosenbloom, 2002, p. 535). Capturing value is typically understood as finding out how to earn revenues (monetization), or perhaps profits or what Lepak, Smith and Taylor (2007) referred to as exchange value. There may be some attention to competition, but emphasis
upon value captured and economic sustainability is much stronger in the realm of strategy (Demil et al., 2015).

A second difference between business models and strategy according to this perspective lies in the centrality of value created for the customer or even all the firm’s exchange partners (Amit & Zott, 2001) versus creation of value for shareholders. Customers and complementors can create value themselves—a fact often ignored in supply-side-oriented strategy theories. For one thing, customers and complementors can create value simply by participating, as in multi-sided networks or platforms (Cennamo & Santalo, 2013; Parker & Van Alstyne, 2006). The more members that there are on each side, the more valuable that the network becomes to the members on the other side(s). For the other, customers and complementors can also create value when they, rather than manufacturers or platform owners, innovate (Bogers, Afuah & Bastian, 2010; von Hippel, 2005).

A third difference between business models and strategy in this perspective lies in the state of knowledge held by the firm, its customers, and third parties. The business model construct consciously assumes that this knowledge is cognitively limited and biased. “The initial business model is more of a proto-strategy, an initial hypothesis for how to deliver value to the customer, than it is a fully elaborated and defined plan of action. It results less from carefully calculated choices from a diverse menu of well understood alternatives and more from a process of sequential adaptation to new information and possibilities” (Chesbrough & Rosenbloom, 2002, p. 550). Experimentation, rather than positioning or controlling critical resources becomes critical (McGrath, 2010).

In this case, proponents of the business model perspective argue that studying business models may introduce nuances that have escaped traditional strategy analysis. For example, Zott and Amit
(2007, 2008) have suggested that by virtue of its unit of analysis, which is nested between the firm and the network, comprising both (Zott et al., 2011), the business model may broaden the traditional boundaries of mainstream theories of value creation and capture (Dyer & Singh, 1998; Gulati, Nohria & Zaheer, 2000; Normann, 2001). The business model emphasizes the importance of network plays and mechanisms such as complementarity and lock-in effects in fully explaining superior performance. However, these arguments are not usually convincing enough for strategy purists.

We think this is a potentially fruitful line of inquiry that has the potential to enrich traditional theorizing in strategy, which, we argue, has been characterized by an overemphasis on value capture that may have come at the expense of theorizing on value creation. This sentiment is shared by other scholars who do not necessarily focus on the business model even if they often refer to it. For example, Adner and Kapoor (2010), working on business ecosystems, have suggested that strategy research “has tended to assume away the question of how value is created in the first place” (p. 309). Similarly, Nickerson, Silverman, and Zenger (2007) note that, “the vast majority of strategy research had focused on value capture and underemphasized the challenges of crafting organizations and strategies that continuously create value” (p. 211).

Richard Priem and colleagues (Priem, 2007, Priem & Butler, 2001; Priem, Butler & Li, 2013) have published a number of influential papers introducing and, subsequently, elaborating a demand-side perspective on strategy and the notion of Consumer Benefit Experienced (CBE) view of strategy. Whether these sub-streams—for example, research in ecosystems, the demand-side perspective in strategy, and the business model—will progressively converge and give birth to a new line of inquiry in and of itself and whether the latter, the business model, will play a central or a
peripheral role in helping theorizing on value creation is difficult to predict. At least for the moment, employing the business model construct may represent a fruitful avenue to better understand value creation over and above what is normally studied in the mainstream of strategic management.

**Why the Disagreements about the Relationship Between Business Models and Strategy?**

These disagreements about the relationship between business models and strategy raise an interesting question: What is behind these inconsistencies? In what follows, we argue that these disagreements and differences are rooted in the fact that business models may be challenging the assumptions of traditional theories of value creation and value capture. These theories assume away value creation in the demand side, seeing value creation as a supply-side phenomenon in which value is created solely by producers (Priem, 2007)—a point of view that contrasts with the business model perspective in which value can also be created on the demand side by customers and other members of their ecosystems. Thus, value creation and capture arguments that are rooted in these traditional theories are not always going to be consistent with those rooted in the business model perspective. What are these assumptions that assume away demand-side value creation? How do they underpin the disagreements in the relationship between business models and strategy?

**Assumptions Being Challenged by Business Models**

The research that theorizes about value creation and capture has been dominated by two theoretical perspectives: The positioning view and the resource-based view (RBV). These two traditional theories of value creation and capture make four assumptions—often implicitly—that are being challenged by business models research: (1) Firms and their customers have perfect
information, (2) firms and their customers have unlimited cognitive abilities and act independently, (3) there are no externalities, and (4) competitive advantage is single-sourced, either position-based only or resource-based only, but not both (Table 4). Let us briefly discuss each.

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**TABLE 4 ABOUT HERE**

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_Firms and customers have perfect information._ In contrast to the positioning view and RBV theorizing (e.g., Barney, 1991; Foss & Knudsen, 2003; Peteraf, 1993; Porter, 1980, 1996), business model research often recognizes the fact that firms and their customers do not have perfect information. This is consistent with the idea that firms and their customers often have information gaps that they would like to fill, or work around, when making decisions about products and their needs (Simon, 1955; 1987). For example, during the dot.com boom, it was not always clear what customers wanted, how to deliver it, or which groups of customers, if any, would pay for the value delivered. Thus, many business models are designed to deal with these information gaps and their ramifications (Pauwels & Weiss, 2008). For example, customers often do not have enough information about products and the trustworthiness of the firms that offer the products, and vice versa. Thus, online auction business models may incorporate rating systems in which sellers and buyers rate each other to build ratings that can serve as signals of trustworthiness (Johnson, 2010). Customers are effectively creating value by contributing to building the rating systems that reduce information asymmetries, thereby increasing the value that customers perceive. Or a smartphone company may decide to use a platform crowdsourcing business model to develop the apps that customers want (Johnson, 2010). That is, rather than
develop the apps internally or contract their development to designated developers, the smartphone company may decide to outsource app development—in the form of an open call—to anyone anywhere in the world that wants to self-select and develop the apps with no *ex ante* contract (Afuah & Tucci, 2012; Jeppesen & Lakhani, 2010; Poetz & Schreier, 2012; Saebi & Foss, 2015; Viscusi & Tucci, 2016). Again, value is being created by someone other than the producer.

*Firms and their customers have unlimited cognitive abilities.* In contrast to the positioning view and RBV (Barney, 1991; Foss & Foss, 2005; Peteraf, 1993; Porter, 1985, 1996), business model research often assumes that firms and their customers are cognitively limited. When buying a product, a customer with unlimited cognitive ability can, for example, determine the net present value of all future benefits that will accrue to the customer from buying the product (Priem, 2007). Thus, whether a customer purchases or leases a product should not matter since the customer is cognitively endowed enough to determine, *ex ante*, what future benefits will be and how to discount them to the present. However, when customers are cognitively limited, they simply do not have the foresight to, for example, accurately determine the net present value of future benefits from buying a product today (Simon, 1955; 1987). That means cognitively limited customers may prefer leasing a product rather than purchasing it, making a lease business model more profitable for the producer than a purchase one. That was the case with Xerox when it decided to lease its Xerox 914 copier rather than offer it for purchase.

*No externalities.* The third assumption made by traditional theories (RBV and the positioning view) that is being challenged by business model research is that there are no externalities—that is, these theories assume that interactions between a focal firm and a customer
do not impose any benefits or costs on a third party. This assumption does not hold with products
or services that exhibit network effects. When a user buys a product that exhibits network
effects, it is increasing the value that other users perceive in the product—it is creating value on
the demand side. Many business models in the digital era are rooted in products/services or
technologies that exhibit network effects. For example, in a platform business model, the owner
of the platform charges the price-sensitive but important side little or nothing while charging the
less price-sensitive side a higher price (Cennamo & Santalo, 2013; Parker & Van Alstyne, 2006).
The so-called advertising business model used by Google, Facebook, and numerous others
exploits network effects.

*Competitive advantage is single-sourced and supply-side only.* The fourth assumption
that is made in traditional theories of value creation and capture is that competitive advantage is
rooted in a single source—in resources only, or a system of activities only, but not both. The
positioning view hypothesizes that a firm’s competitive advantage comes from having a system
of activities that is difficult to imitate, and not from a single core competence or resource (Porter,
1996; Rivkin, 2000; Rivkin & Siggelkow, 2003). RBV, in turn, hypothesizes that competitive
advantage comes from having valuable, rare, inimitable and non-substitutable resources (Amit
& Schoemaker, 1993; Barney, 1991; Mahoney & Pandian, 1992; Peteraf, 1993; Sirmon, Hitt &
Ireland, 2007). In business model research, competitive advantage can be from both resources
and systems of activities, on both the demand side and supply side. The business model
perspective would suggest that Google’s competitive advantage lies not just in its intellectual
property (including the look-and-feel of its web pages), but also in the system of activities that it
performs to deliver value to its large networks of searchers, advertisers, and app developers
(Afuah, 2014).
Overall, the assumptions of traditional theories have restricted value creation to the supply side where value is created exclusively by producers. In contrast, business model research often implicitly relaxes these assumptions so that value is created not only by producers, but also by customers and other members of their value-creation ecosystems. Additionally, competitive advantage in the business model perspective can rest not only in the demand and supply sides, but it can also be resource-based and position-based within each of these sides.

So how does the fact that business models challenge the assumptions of traditional theories of value creation and capture explain scholarly disagreement about the relationship between strategy and business models? On the one hand, because many value creation activities in the business model perspective can be derived from traditional strategy theories of value creation and capture by relaxing their rather restrictive assumptions, some scholars may see business models as a natural extension of strategy. After all, Barney (1991) and Peteraf (1993) relaxed the homogeneity of resources assumption of perfect competition to weave the logic for their RBV theory, while Michael Porter’s positioning view—especially the five forces part of it—was rooted in relaxing select assumptions of the perfect competition model of economics, including the no entry or exit barriers, large number of firms and buyers, firms and buyers being price takers, and product homogeneity assumptions. Witness also the relaxation of perfect competition’s ultra rationality assumption as a foundation for transaction cost economics (TCE) (Williamson, 1985, 2002), and the emergence of the information economics field from relaxing the perfect information assumption of perfect competition (Akerlof, 1970; Spence, 1973; Stigler, 1961).
On the other hand, business model scholars who focus their research primarily on value creation and capture on the demand side, and neglect the research that theorized about value creation before the dot.com boom and the popularity of business models, are likely to miss out on the link between the assumptions of traditional theories of value creation and business models. They are likely to miss out on the fact that the business model perspective can be obtained by relaxing the assumptions of traditional strategy theories of value creation and capture. Effectively, business model scholars who neglect earlier value creation and capture research are likely to think of business models as a new field, rather than an extension of strategy.

Future Research Directions

In this section, we examine how the core business model idea has helped or could help scholars explore meaningful questions in four fields: Strategic management, technology and innovation management, strategic corporate entrepreneurship, and sustainability. In each case, we examine some of the central research questions about value creation and capture in the field before the concept of business models was introduced to the field, how the concept has helped scholars explore these questions in an effort to move the field forward, and future research directions.

Strategic Management

A central question in strategic management has been: What determines performance differences between firms—that is, what makes some firms more profitable than others, and how sustainable is such an advantage (e.g., Besanko et al., 2009; Miller & Cardinal, 1994; Rumelt &
Teece, 1994)? Some of the earliest research that explored this question focused on the role of value capture, not value creation, and featured both the positioning view and RBV in explaining performance differences (Barney, 1991; Porter, 1980). Following criticism by other scholars (e.g., Nickerson et al., 2007; Priem & Buttler, 2001; Teece, Pisano & Shuen, 1997), proponents of the positioning view and RBV added more value creation elements to their earlier models (Barney, 2001; Peteraf & Barney, 2003; Porter, 1980, 1985, 1996). Importantly, as we saw earlier, the value creation efforts that led to superior performance in these models were supply side—that is, the producer with the system of activities or resources was the sole creator of the value that enabled it to outperform its rivals.

Effectively, competitive advantage from network effects and other demand-side factors was assumed away by these theories. That was until the advent of business models that emphasized value creation on the demand side and multi sources of competitive advantage. Adopting the business model perspective meant performance differences could be explained not only by value creation and capture in the supply side but also value creation and capture in the demand side. It also meant that competitive advantage could have multiple sources—it could be both resource-based and/or activities-based, in both the demand and supply slides.

Future strategic management research questions could now include: How much more does the business model perspective explain performance differences than traditional theories of value creation and capture? How much more does a firm’s ecosystem matter in explaining why some firms perform better than others? For example, it has been argued that firm performance depends on both firm-specific factors—such as valuable rare resources and difficult-to-imitate systems of activities—and industry-specific factors (Besanko et al., 2009; McGahan & Porter, 1997). Does industry matter even more (or less) in the business model perspective, now that
value creation is both supply-side and demand-side? Which competitive advantages are more sustainable: Those that are rooted in the supply side or those in the demand side?

Technology and Innovation Management

A central question in technology and innovation management (TIM) has been: Why are some firms more successful at technological innovation than others? Some of the earliest influential research to explore this question focused on how the use of new knowledge—especially technological knowledge—to offer customers new products that they want, could influence the success of a firm in meeting its goals (see Brown & Eisenhardt, 1995 for a review; Allen, 1984; Cardinal, 2001; Henderson & Clark, 1990; King & Tucci, 2002; Tushman & Anderson, 1990). That research also demonstrated that customers and suppliers, not just producers, could also innovate—invent new products or services that producers could not (Bogers et al., 2010; von Hippel, 2005). In any case, these early research endeavors were silent about the role of value capture in the face of technological innovation. That was until Teece’s (1986) argument that valuable tightly-held complementary assets can be critical to capturing value from technological innovation, and therefore to competitive advantage.

The advent of business model research added a new dimension to capturing value from technological innovation, beyond the use of complementary assets. Witness Netflix’s use of a subscription business model to capture value from its Internet-based video rental services (Afuah, 2014). The idea that a simple business model innovation—such as using a subscription model rather than a pay-and-take-along model—could be the difference between a thriving movie rental business and a languishing one is fascinating. As this example illustrates, the business model perspective opens up opportunities for exploring interesting questions in
technology and innovation management. Rather than focusing on the impact of technological innovation on the producer alone, in consonance with traditional theories of value creation and capture, scholars can now explore the impact of technological innovation on the whole value creation and capture ecosystem. For example, rather than focusing on whether a technological innovation is radical, incremental, architectural or competence-destroying to the producer (Henderson & Clark, 1990; Tushman & Anderson, 1986), scholars can also explore the impact of the technological innovation on the ecosystem that includes both the demand-side and supply side actors (Afuah, 2000; Afuah & Bahram, 1995).

This approach can enable scholars to more effectively explore basic questions such as: When and why are business model innovations likely to be more profitable than the technological innovations that they complement (IBM, 2006)? For example, does the profitability advantage of a business model innovation over a complementary technological innovation depend on the type of technological innovation—on whether the technological innovation is incremental, architectural, modular, radical, competence-enhancing or competence destroying (Henderson & Clark, 1990; Tushman & Anderson, 1986)? Relating to the three interpretations, are certain cognitive / linguistic schema more likely to allow managers to overcome radical technological change? How can formal modeling be used to inform technological decisions leading to business model reconfiguration?

Strategic Corporate Entrepreneurship

Strategic entrepreneurship can be broadly defined as the domain of studies emerging from the confluence of strategic management and entrepreneurship research, in which the focus is on creating new demand where none exists—in so-called “blue oceans” (Kim & Mauborgne, 2005; Demil et al.,
2015)—rather than battling for existing demand in the same existing industries (Hitt & Ireland, 2000; McGrath & McMillan, 2000; Thompson & MacMillan, 2010). This new demand is generated through the discovery of new opportunities, the creation of the opportunities, or the exploitation of existing ones in new ways (e.g., Alvarez & Barney, 2007; Ireland, Hitt, Camp, & Sexton 2001; Shah & Tripsas, 2007; Shane & Venkataraman, 2000). Thus, a core research question in the area is: How does one create new demand where none exists yet, and attain one’s goals?

Scholars interested in strategic entrepreneurship have pointed to the business model to explain how companies create value in the first place (Priem, 2007). Research that draws on traditional theories of value creation would suggest that the entrepreneur is the sole creator of this new demand where none exists. However, as discussed above, the business model perspective suggests that new demand can also be created by customers and members of their ecosystems. The reasons why scholars have pointed to the business model is that to reinvent value for customers (a more radical and potentially promising act than incrementally adding to the value already offered to customers under existing offerings (cf. Normann and Ramirez, 1998; Hamel, 2001) firms should rethink their business models and/or create new ones.

This raises even more interesting questions. Which opportunities are more likely to create new demand where none presently exists: Those where only the entrepreneur is the sole creator of value or those where customers and members of their ecosystems are co-creators? When is an entrepreneur or incumbent more likely to exploit opportunities in the demand side compared to those in the supply side? How do cognitive schema and narratives of entrepreneurs vs. intrapreneurs help them craft demand-side business models? When are incumbents more likely to be a problem for entrepreneurs: When the opportunities being exploited are in the demand side or supply side? What are the dynamics of entrepreneurs’ business model reactions to incumbent countermoves?
Sustainability

A central question in sustainability research has been: How can organizations create value in environmental, social, AND economic terms? Sustainability does not necessarily refer to sustainable competitive advantage or similar concepts from the strategy lexicon. Rather it broadly refers to the integration of social and environmental concerns in firms’ strategy, operations, and business models, and the incorporation of a balance among economic, social, and environmental value creation so as to contribute to sustainable development (see Nidumolu, Prahalad & Rangaswami, 2009; World Business Council for Sustainable Development, 2012; United Nations Industrial Development Organization, 2013). At the organizational level, the vision of sustainable development has led to concepts such as sustainability management, corporate sustainability (Dyllick & Hockerts, 2002; Schaltegger & Burritt, 2005), sustainability innovation and sustainable entrepreneurship (Schaltegger & Wagner, 2011), social business (Yunus, Moingeon, & Lehmann-Ortega, 2010) and, more recently, the notion of shared value (Porter & Kramer, 2011).

In a recent extensive report based on a systematic review of business models for sustainability, Lüdeke-Freund, Bocken, Brent, Massa, and Musango (2016) note that business models for sustainability differ from traditional ones in at least three fundamental ways. First they assume a view of business as an engine of societal progress. In other words, the concept of sustainability recognizes that societal contributions of companies are not limited to paying taxes, creating employment, or devising useful products (all of which fall within the paradigm of neoclassical economic theory and related lines of inquiry). Business also has the potential, resources, and capabilities to develop innovative solutions that turn environmental and social issues (read: problems) into market opportunities. Second they include a broader notion of value—from primarily
economic to also social and environmental. The general idea is that the sustainability paradigm offers an extended interpretation of value creation resembling a triple bottom line approach integrating people, planet, and profit (Elkington, 1998). Third, they undertake and offer a multi-stakeholder, system-level perspective on value creation—from one predominantly centered on customers and shareholders extended to embrace more of the firm’s stakeholders.

Future research in business models for sustainability may revolve around challenging some of the assumptions behind the more classical discussions of business models, such as measuring value creation for all stakeholders, and distribution of benefits (value capture) from the organization’s work, including demand-side value creation/capture and shared value. Other questions may include: How are formal models/components different when modeling business with a sustainability lens? What narratives are used to communicate sustainable business models throughout large organizations and which components of a business model are reinforced by sustainable business model narratives? How can formal models be used to model the dynamics of industry transformation toward higher levels of sustainability when instigated by new business models in one firm or one sector?

SUMMARY AND CONCLUSIONS

In this paper, we have argued that technological and other trends have led to organizations experimenting with new ways of achieving their goals. New business models that were unheard of, or very rare, decades ago are a great source of wealth and opportunity in today’s economy, but keeping a consistent understanding among scholars studying this topic has proved challenging. The very term “business model” itself along with its often-used descriptors “value creation” and “value capture” have morphed in meaning over the years, causing confusion in the
literature. One confusion is based on essentially three major interpretations of the term “business model:” as an attribute of a real organization, a cognitive/linguistic schema, or a formal conceptual representation of an organization’s activities. Another disagreement is based on whether scholars recognize that “value creation” and “value capture” have also broadened, which would recognize the validity or importance of the business model perspective.

As discussed above, one way of solving the construct validity problem associated with the three interpretations is to more explicitly acknowledge the existence of these interpretations and explain which interpretation is assumed in each study. Assumptions should also be made more explicit: Formally representing a business model involves several decisions related to the scale, content and semantics adopted, and evaluating and comparing different formal representations requires that the assumptions and the rationale behind those decisions be explicitly stated. This is rarely the case in business model papers. Almost no paper among the ones we reviewed (with rare exceptions such as Casadesus-Masanell and Ricart, 2010) proposes a clear elucidation of the assumptions and rationale behind the simplifications made. Conceptualization of the business model appears to be similar (the subject matter remains the firm and its ways of doing business independently of the choices made in representing it) and yet different, but the sources of difference are not formally discussed (and, perhaps, very difficult to recognize). Even readers of the business model literature that accept the existence of several possible ways of representing business models are left without the information necessary to understand the relative merits of each formal model and/or to “agree to disagree.”

Continuing on with the broadening of the meaning of value creation and capture, until the dot.com boom of the mid-1990s, when many scholars were introduced to business models, many theoretically interesting questions about value creation and capture were rooted—often
implicitly—in RBV or the positioning view of strategic management (Barney & Arikan, 2001).

These two dominant theoretical perspectives assumed away demand-side value creation while insisting that competitive advantage was single-sourced—that is, competitive advantage was either resource-based only (Amit & Schoemaker, 1993; Barney, 1991; Mahoney & Pandian, 1992; Peteraf, 1993) or activities-based only (Porter, 1996; Rivkin, 2000) but not both, and largely supply-side driven.

In the real world of business models, the assumptions of these traditional theories often do not hold. For example, in the Internet boom, network effects were critical to doing business, and delivering value to customers was no guarantee that one would get paid for it. That is, value creation and capture on the demand side were critical to doing business in the face of the Internet, and monetization of value could not be taken for granted. Effectively, in business model research, the assumptions of these traditional theories are often relaxed to accommodate the realities of business that have changed. One result of these differences in assumptions has been the different opinions about the relationship between business models and strategy, as we explored above in the heated debate about the relationship between business models and strategy.

We conclude this paper with a simple question from that debate. Are business models a new field distinct from strategy? We have argued that in the business model perspective, exploring questions that involve value creation has meant relaxing—often implicitly—some of the assumptions of traditional strategic management theories, much the same as different theoretical perspectives have been obtained by relaxing the perfect competition model of neoclassical economics. Thus, to the extent that, in relaxing the assumptions of a theoretical perspective, one can create a new field, the business model perspective is a new field because it can be derived from traditional theoretical perspectives. And to the extent that such relaxation
only extends the breadth of the strategy field, business models research is an extension of strategy, not a new field. In any case, there is a lot to gained by pursuing value creation and capture from both a supply side and demand side, and pursuing competitive as both resource-based and activities-based from both a demand and supply side.
References


Critical Assessment of Business Model Research


Vienna, Austria.


Table 1: Recent exemplar works interpreting business models as attributes of real firms

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Definition</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birkinshaw &amp; Goddard, 2009</td>
<td>&quot;[refers to] how a company makes money&quot; (p. 81)</td>
<td>Making money</td>
</tr>
<tr>
<td>Bocken, Rana &amp; Short, 2015</td>
<td>&quot;The framework of a “business model” might provide a structured way for sustainable business thinking by mapping the purpose, opportunities for value creation across the network, and value capture (how to generate revenue) in companies.” (p.67)</td>
<td>- Maps the purpose of a company; - maps the opportunities for value creation across the network; - maps value creation in companies.</td>
</tr>
<tr>
<td>Bocken, Short, Rana &amp; Evans, 2014</td>
<td>“Sustainable business models (SBM) incorporate a triple bottom line approach and consider a wide range of stakeholder interests, including environment and society.” (p.42)</td>
<td>- Shows the value proposition; - allows for value creation and delivery; - allows value capture.</td>
</tr>
<tr>
<td>Casadesus-Masanell &amp; Zhu, 2010</td>
<td>&quot;The business model is a set of committed choices that lays the groundwork for the competitive interactions that will occur between the incumbent and the ad-sponsored entrant down the line&quot;. (p.3) &quot;The choice of the particular business model with which to compete corresponds, in our development, to the choice of a particular profit function&quot;. (p.5)</td>
<td>- Lays the groundwork for the competitive interactions that will occur between the incumbent and the ad-sponsored entrant; - Reveals the firm strategy.</td>
</tr>
<tr>
<td>Chesbrough, 2010</td>
<td>Business model defined by function (see next column)</td>
<td>- Articulates the value proposition; - identifies a market segment; - specifies the revenue generation mechanism; - defines the structure of the value chain; - estimates the cost structure and profit potential; - describes the position of the firm within the value network linking suppliers and customers; - formulates the competitive strategy.</td>
</tr>
<tr>
<td>Dahan, Doh, Oetzel &amp; Yaziji, 2010</td>
<td>“…a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network”. (p.328)</td>
<td>- Generates and delivers economic value, [as well as] social value; - illustrates the mechanisms whereby the firm intends to deliver value to the target public; - illustrates how the necessary costs and revenues will be structured.</td>
</tr>
<tr>
<td>Gambardella &amp; McGahan, 2010</td>
<td>“A business model is an organization’s approach to generating revenue at a reasonable cost, and incorporates assumptions about how it will both create</td>
<td>Generates profit [if] the firm has developed activities and accumulated resources that drive a wedge between operating costs and</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Quote</td>
<td>Relevance</td>
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<tr>
<td>Hierneth, Keinz &amp; Lettl, 2011</td>
<td>“A business model describes the logic of how a business creates and delivers value to users and converts payments received into profits”. (p.346)</td>
<td>- Describes the logic; - Describes how firms make money.</td>
</tr>
<tr>
<td>Markides &amp; Oyon, 2010</td>
<td>“A business model distinguishes a company/unit according to its strategy, culture and processes”. (p.7)</td>
<td>Established corporations [respond to new disruptive BMs] by adopting new BMs along their established ones.</td>
</tr>
<tr>
<td>Nielsen &amp; Lund, 2014</td>
<td>“The business model is […] the platform which connects resources, processes and the supply of a service which results in the fact that the company is profitable in the long term. This definition emphasizes the need to focus on understanding the connections and the interrelations of the business and its operations so that the core of a business model description is the connections that create value.” (p.9)</td>
<td>- Articulates the value proposition; - identifies a market segment; - defines the structure of the value chain within the firm required to create and distribute the offering; - estimates the cost structure and profit potential of producing the offering, given the value proposition and value chain structure chosen; - describes the position of the firm within the value network linking suppliers and customers, including identification of potential complementors and competitors; - formulates the competitive strategy by which the innovating firm will gain and hold advantage over rivals.</td>
</tr>
<tr>
<td>Roome, Louche, 2016</td>
<td>“Business models refer to the way firms do business, creating and capturing value within a value network (Shafer et al., 2005)” (P. 126)</td>
<td>the business model links the working inside the firm to outside elements including the customer side and how value is then captured and monetized.</td>
</tr>
<tr>
<td>San Román, Momber, Abbad &amp; Miralles, 2011</td>
<td>“A business model describes how a product or service is provided, including perceived value creation of a certain product for a final customer”. (p.6364)</td>
<td>Inform regulatory frameworks by taking firm business models into consideration.</td>
</tr>
<tr>
<td>Sinfield, Calder, McConnell &amp; Colson, 2012</td>
<td>“… A business model includes all aspects of a company’s approach to developing a profitable offering and delivering it to its target customers.” (p.87)</td>
<td>Includes all aspects of a company’s approach to developing a profitable offering and delivering it to its target customers.</td>
</tr>
<tr>
<td>Smith, Binns &amp; Tushman, 2010</td>
<td>“…The design by which an organization converts a given set of strategic choices - about markets, customers, value propositions - into value, and uses a particular organizational architecture - of people, competencies, processes, culture and measurement systems - in order to create and capture this value”. (p.450)</td>
<td>It allows an organization to create and capture this value.</td>
</tr>
<tr>
<td>Weill, Malone &amp; Apel, 2010</td>
<td>“The types of assets a company sells and the rights it grants customers to use those assets”. (p.17)</td>
<td>A fundamental tool for analyzing many important strategic decisions, … for analyzing how a company is managed and the resulting firm performance.</td>
</tr>
<tr>
<td>Zott &amp; Amit, 2010</td>
<td>“A business model [is a] set of activities, as well as the resources and capabilities to perform them - either within the firm, or beyond it through cooperation with</td>
<td>- Depicts the content, structure, and governance of transactions designed so as to create value; - fulfills customers’ needs and</td>
</tr>
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</table>
partners, suppliers or customers”. (p.217) 
“[It depicts] the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”. (p.219) 
creates customer surplus while generating a profit for the focal firm and its partners; 
- lays the foundations for the focal firm’s value capture; 
- co-determines the focal firm’s bargaining power.

Note: Some sample publications may illustrate more than one interpretation of business models. Where that is the case, we have listed the publication under the most relevant interpretation. For example, we listed Chesbrough and Rosenbloom (2002) under the business model as cognitive/linguistic schema interpretation even though the paper illustrates the two other interpretations.
Table 2: Recent exemplar works interpreting business models as cognitive / linguistic schemas

<table>
<thead>
<tr>
<th>Cognitive/linguistic schema interpretation of business models</th>
<th>Unit of analysis: Individual and collective minds and discourse</th>
<th>Sample keywords: Heuristic, cognitive, mental model, dominant logic, story, narrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author (Year)</td>
<td>Definition</td>
<td>Function</td>
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<td>-------------------------------------------------------------</td>
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<tr>
<td>Aspara, Lamberg, Laukia, Tikkanen, 2013</td>
<td>“We view the business unit-level business model as the business unit managers’ perceived logic of how the unit in question functions and creates value, in connection with both its market environment, and within the corporation (i.e., with its other business units).” (p.460)</td>
<td>- It specifies the logic of how the unit in question functions and creates value; - connects both its market environment and the corporation; - specifies how the machine works; - produces revenue and/or costs to the corporation or to other business units.</td>
</tr>
<tr>
<td>Baden-Fuller &amp; Morgan, 2010</td>
<td>“Business Models as models” (p.156)</td>
<td>- Provides means to describe and classify businesses; - operate as sites for scientific investigation; - act as recipes for creative managers.</td>
</tr>
<tr>
<td>Chesbrough &amp; Rosenbloom, 2002</td>
<td>“The heuristic logic that connects technical potential with the realization of economic value” (p. 529).</td>
<td>- Articulate the value proposition; - Identify a market segment; - Define the structure of the value chain; - Estimate the cost structure and profit potential; - Describe the position of the firm within the value network; - Formulate the competitive strategy.</td>
</tr>
<tr>
<td>Doganova, Eyquem-Renault, 2009</td>
<td>Some authors define the business model broadly as a description of a company’s logic of value creation (Ghaziani and Ventresca, 2005). It “spells out how company makes money by specifying where it is positioned in the value chain” (Chesbrough and Rosenbloom, 2002, p. 533) and “depicts the design of transaction content, structure and governance so as to create value through the exploitation of business opportunities” (Amit and Zott, 2001, pp. 494–495) (p. 1560)</td>
<td>The business model works as both a calculative and a narrative device. It allows entrepreneurs to explore a market and to bring their innovation – a new product, a new venture and the network that supports it – into existence.</td>
</tr>
<tr>
<td>Doz &amp; Kosonen, 2010</td>
<td>Objectively [business models] are sets of structured and interdependent operational relationships between a firm and its customers, suppliers, complementors, partners and other stakeholders, and among its internal units and departments (functions, staff, operating units, etc.). … But, for the firm’s management, business models also function as a subjective representation of these mechanisms, delineating how it believes the firm</td>
<td>“Business models stand as cognitive structures providing a theory of how to set boundaries to the firm of how to create value, and how to organize its internal structure and governance.” (p. 371)</td>
</tr>
<tr>
<td>Author</td>
<td>Description</td>
<td>Notes</td>
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<tr>
<td>Magretta, 2002</td>
<td>&quot;Stories that explain how enterprises work. A good business model answers Peter Drucker’s age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?&quot; (p. 4)</td>
<td>Narratives to help understand who the customer is, what the customer values, how money is made, and the underlying economic logic for value delivery.</td>
</tr>
<tr>
<td>Martins, 2015</td>
<td>&quot;The designed system of activities through which a firm creates and captures value.&quot; (p. 99)</td>
<td>A reflection of managerial mental models or schemas concerning interdependent organizational activities.</td>
</tr>
</tbody>
</table>
| Velu & Stiles, 2013 | "A business model summarizes the architecture and logic of a business." (p.443) | - Aid for top management decision-making;  
- enables change in both the cognitive and economic aspects of a business. |

Note: Some sample publications may illustrate more than one interpretation of business models. Where that is the case, we have listed the publication under the most relevant interpretation. For example, we listed Chesbrough and Rosenbloom (2002) under the business model as cognitive/linguistic schema interpretation even though the paper illustrates the two other interpretations.
Table 3: Recent exemplar works interpreting business models as formal conceptual representations

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Definition</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdelkafi &amp; Täuscher, 2016</td>
<td>A reinforcing feedback loop between the created value to the customers, the value captured by the firm, and the value to the natural environment.</td>
<td>Represents the firm’s money-earning logic in a transition to sustainability.</td>
</tr>
</tbody>
</table>
| Baden-Fuller & Haefliger, 2013    | “We define the business model as a system that solves the problem of identifying who is (or are) the customer(s), engaging with their needs, delivering satisfaction, and monetizing the value. The framework depicts the business model system as a model containing cause and effect relationships, and it provides a basis for classification”. (p.419) | - Represents a tool for management  
- It solves the problem of identifying who is (or are) the customer(s), engaging with their needs, delivering satisfaction, and monetizing the value;  
- provides the basis for classification;  
- mediates the link between technology and firm performance. |
| Boons & Lüdeke-Freund, 2013        | The BM is defined by its components:  
"We distinguish the following elements of a generic business model concept:  
a. Value proposition: what value is embedded in the product/service offered by the firm;  
b. Supply chain: how are upstream relationships with suppliers structured and managed;  
c. Customer interface: how are downstream relationships with customers structured and managed;  
d. Financial model: costs and benefits from a), b) and c) and their distribution across business model stakeholders. In this context, a business model is used as a plan which specifies how a new venture can become profitable.” (p.10) | - Specifies how a new venture can become profitable;  
- shows what value is embedded in the product/service offered by the firm;  
- explains how are upstream relationships with suppliers structured and managed;  
- describes how are downstream relationships with customers structured and managed;  
- provides costs and benefits from a), b) and c) and their distribution across business model stakeholders. |
| Casadesus-Masanell & Ricart, 2010  | “Business Model refers to the logic of the firm, the way it operates and how it creates value for its stakeholders”. (p.196)  
“A firm’s business model is a reflection of its realized strategy”. (p.205) | - Articulates the value proposition;  
- identifies a market segment;  
- defines the structure of the value chain;  
- estimates the cost structure and profit potential;  
- describes the position of the firm within the value network;  
- formulates the competitive strategy. |
| Demil & Lecocq, 2010              | “The concept refers to the description of the articulation between different business model components or ‘building blocks’ to produce a proposition that can generate | - Enables description and classification;  
- synthesizes a way of creating value in a business: it helps to describe |
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Itami &amp; Nishino, 2010</td>
<td>“A business model is composed of two elements, a business system and a profit model.” (p. 364)</td>
</tr>
<tr>
<td>McGrath, 2010</td>
<td>“Two core components constitute a business model. The first is the basic ‘unit of business’, which is the building block of any strategy, because it refers to what customers pay for. The second are process or operational advantages, which yield performance benefits when more adroit deployment of resources leads a firm to enjoy superior efficiency or effectiveness on the key variables that influence its profitability”. (p. 249)</td>
</tr>
<tr>
<td>Osterwalder, Pigneur &amp; Tucci, 2005</td>
<td>“A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.” (p. 10)</td>
</tr>
<tr>
<td>Provance, Donnelly &amp; Carayannis, 2011</td>
<td>“Business models have traditionally been viewed as constructions of the internal values, strategies, and resources of organizations”. (p. 5630)</td>
</tr>
<tr>
<td>Reim, Parida &amp; Ortvist, 2015</td>
<td>“Business models describe the design or architecture of the value creation, delivery and capture mechanisms”. (p. 65)</td>
</tr>
<tr>
<td>Sainio &amp; Marjakoski, 2009</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Value for consumers and thus for the organization”. (p.227)

How an organization functions and generates revenues;
- is a tool to address change and focus on innovation, either in the organization, or in the business model itself.

- Illustrates the production/delivery system (how to deliver products or services to the target customers);
- reflects the firm’s intention about how it will make a profit in its given business.

- Offers strategists a fresh way to consider their options in uncertain, fast-moving and unpredictable environments.

Helps identify
- Customer value;
- financial consequences;
- revenue stream;
- customer segment(s);
- value creation;
- partners network.

- Provides a framework for management to allocate resources in order to gain competitive advantage and appropriate rents;
- ensures a logical and internally consistent approach to the growth of an entrepreneurial venture;
- defines the architecture through which key variables – or resources and capabilities – will be combined;
- demonstrates the economic appeal of an entrepreneurial venture;
- guides ongoing operations.

Explains the design or architecture of the company's mechanisms to create, deliver, and capture value.

Describes how the firm works as a system.
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Citation</th>
<th>Definition/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schaltegger, Hansen, Ludeke-Freund, 2016</td>
<td>“A business model for sustainability helps describing, analyzing, managing and communicating (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries” (p. 6)</td>
<td>The business model describes the design or architecture of the value creation, delivery and capture mechanisms employed.</td>
</tr>
<tr>
<td>Teece, 2010</td>
<td>“A business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value. ... It's about the benefit the enterprise will deliver to customers, how it will organize to do so, and how it will capture a portion of the value that it delivers”. (p.179)</td>
<td>Outlines the business logic required to earn a profit; defines the way the enterprise 'goes to market'; reflects management’s hypothesis about what customers want, how they want it and what they will pay, and how an enterprise can organize to best meet customer needs, and get paid well for doing so.</td>
</tr>
<tr>
<td>Upward, Jones, 2016</td>
<td>“A description of how a business defines and achieves success over time” (p. 98)</td>
<td>It provides a description of the logic for an organization's existence: who does it for, to and with; what does it now and in the future; where, how, and with what does it do it; and how it defines and measures its success</td>
</tr>
<tr>
<td>Wells, 2016</td>
<td>“A business model can be defined as having three constituting elements: the value network and product/service offering that defines how the business is articulated with other businesses and internally (i.e. how value is created); the value proposition that defines how products and/or services are presented to consumers in exchange for money (i.e. how value is captured); and the context of regulations, incentives, prices, government policy and so on (i.e. how value is situated within the wider socioeconomic framework).” (p. 37)</td>
<td>Description of how a firm interacts with its ecosystem.</td>
</tr>
<tr>
<td>Wirtz, Schilke &amp; Ullrich, 2010</td>
<td>“A business model reflects the operational and output system of a company, and as such captures the way the firm functions and creates value”. (p.274)</td>
<td>Reflects the operational and output system of a company; Captures the way the firm functions and creates value</td>
</tr>
<tr>
<td>Yunus, Moingeon &amp; Lehmann-Ortega, 2010</td>
<td>“We suggest that a business model has three components: a value proposition, a value constellation, a profit equation.” (p.311)</td>
<td>Offers a consistent and integrated picture of a company and the way it generates revenues and profits.</td>
</tr>
</tbody>
</table>

Note: Some sample publications may illustrate more than one interpretation of business models. Where that is the case, we have listed the publication under the most relevant interpretation. For example, we listed Chesbrough and Rosenbloom (2002) under the business model as cognitive/linguistic schema interpretation even though the paper illustrates the two other interpretations.
Table 4: Traditional theories vs. business models

<table>
<thead>
<tr>
<th></th>
<th>Traditional theories (RBV and Positioning view)</th>
<th>Business models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavioral assumptions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfect information</td>
<td>Assumed</td>
<td>Not necessarily assumed</td>
</tr>
<tr>
<td>Unlimited cognitive abilities</td>
<td>Assumed</td>
<td>Not necessarily assumed</td>
</tr>
<tr>
<td>No externalities</td>
<td>Assumed</td>
<td>Not necessarily assumed</td>
</tr>
<tr>
<td>Single source of competitive advantage</td>
<td>Assumed</td>
<td>Not necessarily assumed</td>
</tr>
<tr>
<td><strong>Value creation and capture assumptions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value creation</td>
<td>Supply-side only</td>
<td>Can be demand side and/or supply side</td>
</tr>
<tr>
<td>Value capture</td>
<td>Supply-side</td>
<td>Can be demand side and/or supply side (monetization)</td>
</tr>
<tr>
<td>Sources of competitive advantage</td>
<td>Resource-based or activities-based on the supply side only</td>
<td>Can be resource-based and/or activities-based on the demand and/or supply sides</td>
</tr>
</tbody>
</table>
FIGURES

Figure 1: Growth in Business Model Research (number of articles published per year)
A critical assessment of business models research
APPENDIX: METHODOLOGY

This appendix discusses the methods adopted at various stages in preparing this manuscript, i.e.,
the methods used in identifying and analyzing the relevant papers, in preparing tables, and in
general in making sense of the literature.

Identification of relevant literature

In conducting this review, we first of all looked to collect the relevant papers and
created a large database of articles to consider. Using the Scopus\textsuperscript{1} database as a starting point, we
searched for articles in the social sciences subject areas containing the term “business model” in
their title, abstract or keywords, focusing on the years 2010 – 2015, thus extending Zott et al.’s
(2011) review of the literature published between 1975 and 2010. Our first search yielded 2754
results, of which 390 for 2010, 375 for 2011, 440 for 2012, 520 for 2013, 535 for 2014, and 492
for 2015, plus two articles already online but yet to be published in 2016. Because the business
model construct is still an emerging one, interesting insights could be found in outlets other than
those traditionally considered by a management readership. Therefore, we decided to read all the
abstracts to identify potentially interesting outlets to include in our list of “leading” academic and
practitioner journals. On the basis of this initial scan, we decided to restrict our research to the
following leading academic and practitioner-oriented management journals in the area of
management. Our list includes: Academy of Management Journal (AMJ), Academy of
Management Review (AMR), Administrative Science Quarterly (ASQ), Journal of Management
(JOM), Journal of Management Studies (JMS), Management Science (MS), MIS Quarterly,
Organization Science (OS), Strategic Entrepreneurship Journal (SEJ), Strategic Management

\textsuperscript{1}Scopus, a bibliographic database a covering nearly 22,000 titles from over 5,000 publishers, of which 20,000 are
peer-reviewed journals, has broad coverage of the social sciences.

We included the following two criteria for conducting the search. First, to be included in our review, an article must deal with the business model concept in a nontrivial and non-marginal way. Second, an article also must refer to the business model as related to organizations (as opposed to, e.g., economic cycles). As a result, we obtained 83 papers to be added to those already considered by Zott et al. (2011), leading to a final sample of 216 business model papers.

**How the papers were analyzed**

To analyze papers, in addition to reading them, we created a database in which we organized important information we extracted from them:

- Complete Reference
- Title
- Authors 1 to 5 (5 columns)
- Year of publication (from 1995 to 2016)
- Type of publication, differentiating between academic and practitioner journals
• Type of definition/conceptualizations of the business model (we divided between Direct definition, Indirect definition (conceptualizations), definition provided by Other and No Definition as further explained in Table M1).
• Definition / conceptualization (we report the original text in these cells)
• Functions (what a business model does – examples: “is source of disruptive innovation”, “simplifies cognition”, “connects a technology to the realization of an economic output in a market”).
• Research Question / Research objective
• Method. We differentiate among empirical (1.1 single case study, 1.2 multiple case studies, 1.3 regression and large samples, 1.4 simulation, 1.5 other) and conceptual (2.1 general conceptual, 2.2 theoretical work / theory development) (see M2)
• Empirical setting
• Notes (general comments / observations)
• And a number of additional columns (notably, Antecedents, mechanisms and outcomes of business model design/innovation).
# TABLE M1 – Definition / conceptualization instructions

<table>
<thead>
<tr>
<th>Definitions/conceptualizations</th>
<th>Direct</th>
<th>Indirect (conceptualization)</th>
<th>Other</th>
<th>No Definition - conceptualization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>These are proper definitions of the business model that point to what a business model is. It includes definitions that are the result of significant elaboration of definitions provided by others.</td>
<td>There is no direct definition (a business model is). However, a conceptualization of the business is still offered, often referring to what a business model does or by pointing to the components it comprises.</td>
<td>Scholars employ a definition offered by somebody else. It includes definitions that only marginally modify other’s definitions, without elaboration.</td>
<td>The term business model is employed in the paper without defining it.</td>
</tr>
</tbody>
</table>
TABLE M2 – METHODS adopted in papers

<table>
<thead>
<tr>
<th>Method Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Empirical</strong></td>
<td>Empirical papers may also include theory development (not vice-versa, a conceptual theory development paper does not include empirical work).</td>
</tr>
<tr>
<td>1.1 single case study</td>
<td></td>
</tr>
<tr>
<td>1.2 multiple case studies</td>
<td></td>
</tr>
<tr>
<td>1.3 regression and large samples</td>
<td></td>
</tr>
<tr>
<td>1.4 simulation (computer) when combines with empirical data</td>
<td></td>
</tr>
<tr>
<td>1.5 other</td>
<td></td>
</tr>
<tr>
<td><strong>Conceptual</strong></td>
<td>Theoretical work generally refers to work concerned with theory development - includes identifying propositions, developing hypothesis (which are not tested) or offering some type of causal explanation for a phenomena, or computer simulation used for theory development</td>
</tr>
<tr>
<td>2.1 general conceptual</td>
<td></td>
</tr>
<tr>
<td>2.2 theoretical work</td>
<td></td>
</tr>
</tbody>
</table>

Identification of the three interpretations of the term “business model”

We combined two complementary approaches and analyzed two types of data gathered from the papers we reviewed. First, we focused on definitions / conceptualizations of the business model and prepared Table M3 based on 216 articles, 89 of which provided 71 original definitions.

Sometimes scholars state clearly how they understand a business model. For example, definitions exist stating that the business model is a *concise representation* (Morris et al., 2005) or a *conceptual tool that allows expressing the business logic of a firm* (Osterwalder et al., 2005),
clearly pointing to the perspective of a business model as a formal representation/model. In other cases the business model is defined as a *heuristic*, as in Chesbrough and Rosenbloom 2002 (pointing to a cognitive schema).

Second, we also focused on analyzing the data relative to the *functions* of the business model. For function, we refer to statements and verbs explaining what a business model *does*. The papers we review are rich in terms of sentences of this type. Thus focusing on functions complements the analysis of definitions and can support revealing a scholars view of the business model. For example, many scholars state that business models can be source of disruptive innovation (Hamel, 2000; Linder and Cantrell, 2000; Johnson et al., 2008), can influence firm performance (Amit and Zott, 2001; Zott and Amit, 2007; 2008), their ability to react to new entrants (Markides and Charitou, 2004), or to commercialize their technologies (Chesbrough and Rosenbloom 2002; Chesbrough, 2010), just to mention some. These studies suggest an interpretation of the business model as an attribute of real firms having material impact in markets (in few cases, as for example in Weill et al, 2011 or Zott and Amit, 2007, 2008 scholars have also attempted to measure that impact, another argument in support of a view of the business model as an attribute of a real organization). In other cases, scholars say that the business model “shapes” (decision making/opportunity recognition), “articulates”, “formulates” (the intended strategy), overall pointing to the view of the business model as a cognitive / linguistic schema (in other cases, e.g. as in Chesbrough and Rosembloom, 2002, this is explicit). In yet other cases, scholars state that a business model “describes” or “formally represents” something (typically how a firm operates, or is believed to operate), suggesting a view of the business model as a formal representation (in many cases also offering a framework for the
business model, frequently obtained by pointing to the fundamental components as in Osterwalder et al., 2005 or in Alt and Zimmerman, 2001).

These interpretations are not necessarily mutually exclusive. Many nested cases exist in which an analysis of the function of the business model provides evidence of two or even three interpretations simultaneously. For example, Chesbrough, 2010 states that the same technology, combined with two different business models, will yield two different commercial results, thus pointing to the business model as a vehicle for commercializing technologies (a view consistent with the business model as an attribute of a real firm having material impact). However, he also defines the business model as a “heuristic logic” (and discusses cognitive barriers related to the business model as a cognitive representation). Clearly a heuristic logic (a cognitive schema or mental model) cannot, alone, unlock the economic value potential of a technology and allow execution of a market transaction; to do that, a firm needs something more than a cognitive schema (e.g., activities, processes, delivery channels, etc.).

By working on functions and definitions of the business model we first identified differences in the extent to which a business model has been understood as an attribute of a real firm (what we originally called a “BUSINESS model”) or more as a model (what we originally called a “business MODEL”). Progressive analysis led us to identify a difference in how the business model as a model has been understood (cognitive / linguistic schema vs. formal conceptual representations). The fact that to bring to the surface the different interpretations of the business model as a BUSINESS or as a MODEL (whether mental or formal) we needed to analyze functions and the fact that within the same paper, scholars have proposed functions pointing to conceptually distinct interpretations of the term business model (as in Chesbrough,
suggests that the sources of confusion on the term business model are not immediately apparent and that in many cases, they have not been recognized.

We then used these three interpretations to group 40 recent articles plus three “classics” which are shown in Table 1. Table 1 also provides a summary of the unit of analysis of each of the three interpretations as well as some sample keywords, which for the sake of brevity, are in a shorter list than what we describe above.

**Tables M3 and M4 on definitions and components**

Tables M3 and M4 also include the fundamental components (e.g., “a business model comprises the following components…”) proposed by authors in 71 articles. In preparing these tables, we did not include studies that merely adopt definitions / conceptualizations provided by others or modified them marginally. We excluded studies that: (1) do not include definitions of the business model and/or (2) for which is it not possible to identify any component or theme (e.g., “business models are models”). A list of such studies is available upon request.

| Column three reports first order components and themes (to adopt the terminology employed by Zott et al., 2011; Zott and Amit, 2010). These (first order components or themes) are components of the business model that were either explicitly mentioned as components by the respective authors, or have been inferred by us from the definitions/conceptualizations offered. |
Components of business models (mentioned briefly in the article)

Tables M3 and M4 find 180 unique denominations for first order components we encountered corresponding to the definitions and conceptualizations. These are grouped into 34 classes, each one including conceptually similar components. To create this table, two of us with the support of one research assistant created a database with all the unique components provided, and we clustered them in categories such as value (e.g., value creation, value stream, value architecture), participants (customers, exchange partners), etc. from top to bottom of the Table and grouped similar components adopting different terminology into the same category. Whenever in doubt on the meaning of a specific component we went back to the original studies and tried to understand the original meaning for the component. We iterated in this process until at the grouping proposed in the tables.

Research streams in the literature

Different streams progressively emerged as we analyzed research questions asked (research objectives when research questions were not applicable) and, more generally, the phenomena of interest to the respective researchers. The three researchers involved in this study individually analyzed the literature by asking the following questions: What research questions have been asked? What phenomena have been analyzed relying on the business model? What were the respective scholars trying to understand, explain? We identified initial streams (for example, two of us initially identified a stream named “business models and strategy” which was eventually divided into two streams “competition and rivalry” and “strategic entrepreneurship”). We held several internal discussions and came up with five final categories: E-business and
business architectures, technology and innovation management, competition and rivalry, strategic entrepreneurship, and sustainability. Although we do not wish to claim mutual exclusivity among these research streams (other categories are, indeed, possible and boundaries among them are porous), we believe they offer a comprehensive coverage of the different areas of concern that have motivated management scholars to employ the business model. We adopted them as an (additional) organizing principle to review the principle insights and findings from the business model literature as a function of the different research questions asked and phenomena studied. This coding was not emphasized in the article, but is available from the authors upon request.
TABLE M3 – Business model definitions / conceptualizations and first order components

The Table reports business model definitions and conceptualization, organized chronologically in ascending order. Definitions are statements that explain what a business model is. Conceptualizations are statements that indirectly define a business model by explaining what it does (e.g., “the business model performs the following functions…”), or by pointing to fundamental components (e.g., “a business model comprises the following components…”). In preparing this table, we did not include studies that merely adopt definitions/conceptualizations provided by others or modify them only marginally. However, the relative authors are reported between parentheses below the authors they directly refer to in column one. Finally, we excluded studies: (1) that do not include definitions of the business model, or (2) for which it is not possible to identify any component or theme (e.g., “business models are models”). A list of such studies is available upon request. Column three reports first order components and themes (cf. Zott et al., 2011; Zott and Amit, 2010). These (first order components or themes) are components of the business model that are either explicitly mentioned as components by the respective authors, or have been inferred by us from the definitions/conceptualizations provided. This table includes a total of 89 articles developing 71 definitions / conceptualizations of the business model.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Definitions/conceptualizations</th>
<th>First order components/themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscio &amp; Pasternack, 1996</td>
<td>A firm business model comprises five elements. A global core (responsible for key missions across the corporation and meant to add value to all of the other elements of the model); Business units; Service; Governance and Linkages (which tie the corporation together and cover issues such as organization, management processes and communications).</td>
<td>- Global core;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- business units;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- service;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- governance and linkages.</td>
</tr>
<tr>
<td>Timmers, 1998</td>
<td>“An architecture of the product, service and information flows, including a description of the various business actors and their roles; A description of the potential benefits for the various business actors; A description of the sources of revenues” (p.4).</td>
<td>- Product;</td>
</tr>
<tr>
<td>(Holger, et al., 2008)</td>
<td></td>
<td>- service;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- information flows;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- business actors;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- roles;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- potential benefits (business actors);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- sources of revenues.</td>
</tr>
<tr>
<td>Hamel, 2000</td>
<td>“A Business Concept is a radical innovation that can lead to new customer value and change the rules of the industry”(p.66). The business concept is directly related to the business model since the latter is “nothing else that the business concept implemented in practice” (p.66).</td>
<td>- (New) customer value</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Definitions/conceptualizations</td>
<td>First order components/themes</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Linder and Cantrell, 2000</td>
<td>A business model […] “is the organization’s core logic for creating value” (p. 1).</td>
<td>- Value Creation</td>
</tr>
<tr>
<td>Mahadevan, 2000</td>
<td>The business model is a “unique blend of three streams that are critical to the business. These includes the value stream for the business partners and the buyers, the revenue stream and the logistical stream” (p.59)</td>
<td>- Value stream; - revenue stream; - logistical stream.</td>
</tr>
<tr>
<td>Stewart and Zhao, 2000</td>
<td>“A statement of how a firm will make money and sustain its profit stream over time” (p.290).</td>
<td>- Profits</td>
</tr>
<tr>
<td>Alt &amp; Zimmerman, 2001</td>
<td>“[…] we will distinguish six generic elements of the business model:” (p.5)</td>
<td>- Mission (goals, vision, value Proposition); - structure (Actors and governance, Focus); - processes (customer orientation, coordination mechanism); - revenues (source of revenues, business logic); - legal issues; - technology.</td>
</tr>
<tr>
<td>Amit &amp; Zott, 2001</td>
<td>The business model depicts “the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities.” (p. 511).</td>
<td>- Transaction content - Transaction structure - Transaction governance - Value creation</td>
</tr>
<tr>
<td>Applegate, 2001</td>
<td>A business model comprises 3 components. A concept, which describes an opportunity; Capabilities, which define the resources needed to turn concept into reality; and value, which measures the return to investors and other stakeholders.</td>
<td>- Concept (an opportunity); - capabilities (resources); - value (return to investors and stakeholders).</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Definitions/conceptualizations</td>
<td>First order components/themes</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Weill &amp; Vitale, 2001</td>
<td>“A description of the roles and relationships among a firm’s consumers, customers, allies, and suppliers that identifies the major flows of product, information, and money, and the major benefits for participants” (p. 34)</td>
<td>- Roles and relationships among stakeholders (consumers, customers, allies, suppliers);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- flows of product;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- flows of information;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- flows of money;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- major benefits for participants.</td>
</tr>
<tr>
<td>Dubosson-Torbay, Osterwalder &amp; Pigneur, 2002</td>
<td>&quot;A business model is nothing else than the architecture of a firm and its network of partners for creating, marketing and delivering value and relationship capital to one or several segments of customers in order to generate profitable and sustainable revenue streams” (p.7).</td>
<td>- Exchange partners;</td>
</tr>
<tr>
<td></td>
<td>The business model comprises four components:</td>
<td>- value creation;</td>
</tr>
<tr>
<td></td>
<td>Value proposition or a value cluster for target customer;</td>
<td>- value delivery;</td>
</tr>
<tr>
<td></td>
<td>A market-space offering – which could be a product, service, information, or all three;</td>
<td>- relationship capital;</td>
</tr>
<tr>
<td></td>
<td>A unique, defendable resource system;</td>
<td>- customer segments;</td>
</tr>
<tr>
<td></td>
<td>A financial model.</td>
<td>- revenue streams.</td>
</tr>
<tr>
<td>Rayport &amp; Jaworsky, 2002</td>
<td>Provide a framework based on six elements:</td>
<td>- Value proposition;</td>
</tr>
<tr>
<td></td>
<td>Value proposition (underlying purpose for which the participants in the business web are working together to create competitive advantage)</td>
<td>- product, service, information (or all three);</td>
</tr>
<tr>
<td></td>
<td>Roles of participants that are interacting with each other, exchanging information Processes supported by the e-business initiative)</td>
<td>- resource system;</td>
</tr>
<tr>
<td></td>
<td>Functionalities that support processes Applications that enables functionalities Specific characteristics.</td>
<td>- financial model.</td>
</tr>
<tr>
<td>Van Der Vorst, Van Dongen, Nouguier &amp; Hilhorst, 2002</td>
<td></td>
<td></td>
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<tr>
<td>Chesbrough &amp; Rosenbloom, 2002</td>
<td>The business model is “the heuristic logic that connects technical potential with the realization of economic value” (p. 529). An operational definition is offered by describing the functions of the business model.” (p. 533-534)</td>
<td>- Value proposition;</td>
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<td></td>
<td>(Chesborough, Ahern, Finn &amp; Guerraz, 2006; Björkdahl, 2009)</td>
<td>- market segment;</td>
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<td>- structure of the value chain;</td>
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<td>- cost structure and profit potential;</td>
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<td>- position of the firm within the value network;</td>
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<td>- competitive strategy.</td>
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<td>Magretta, 2002</td>
<td>Business models are “stories that explain how enterprises work. A good business model answer Peter Drucker’s age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?” (p. 4).</td>
<td>- Customer;</td>
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<td>(Ojala &amp; Tyrväinene, 2006)</td>
<td>- value propositions;</td>
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<td>- how money are made;</td>
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<td>- value delivery;</td>
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<td>- costs.</td>
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<td>Hedman &amp; Kalling, 2003</td>
<td>&quot;A business model includes the following causally related components: 1) customers, 2) competitors, 3) offering, 4) activities and organization, 5) resources, and 6) supply of factors and production inputs. To this it is added a longitudinal process component 7), to cover the dynamics of the business model over time and the cognitive and cultural constrains that managers have to cope with. ... We refer to it as the scope of management”. (p. 52-53)</td>
<td>- Customers;</td>
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<td>(Eriksson, Kalling, Akesson &amp; Fredberg, 2008)</td>
<td>- competitors;</td>
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<td>- activities and organization;</td>
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<td>- supply of factors and production inputs;</td>
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<td>- scope of management.</td>
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<td>Mitchell &amp; Coles, 2003</td>
<td>&quot;A business model comprises the combined elements of &quot;who&quot;, &quot;what&quot;, &quot;when&quot;, &quot;why&quot;, &quot;where&quot;, &quot;how&quot; and &quot;how much&quot; involved in providing customers and end users with products and services&quot;. (p. 16)</td>
<td>- &quot;Who&quot;;</td>
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<td>- &quot;what&quot;;</td>
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<td>- &quot;why&quot;;</td>
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<td>- &quot;how&quot;;</td>
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<td>- &quot;how much&quot;;</td>
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<td>- customers.</td>
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| Osterwalder, 2004              | "The business model is a representation of how a company buys and sells goods and services and earns money". (p. 9)                                                                                                                  | - Business logic of a company;  
- the way the company makes money;  
- what the company offers;  
- to whom the company offers this;  
- how the company can accomplish this. |
| (Abdelkafi, Täuscher, 2016; Gauthier and Gilomen, 2016) | "The business model is an abstract representation of the business logic of a company, an abstract comprehension of the way a company makes money, what it offers, to whom it offers this and how it can accomplish this". (p. 14) |                                                                                                                                               |
| Afuah, 2004                    | "A business model is a framework for making money. It is the set of activities which a firm performs, how it performs them, and when it performs them so as to offer its customers benefits they want and to earn a profit". (p.2)                                                                 | - Activities (what, how, when);  
- customer benefits;  
- profit.                                                                                                                   |
| Bigliardi, Nosella & Verbano, 2005 | The business model is operationalized by measuring the following components (variables): geographical location, age, size, level of newness of the biotechnologies used, level of R&D integration and level of industrialization/services of the sector. | - Geographical location;  
- age;  
- size;  
- level of newness of the biotechnologies used;  
- level of R&D integration;  
- level of industrialization/services of the sector.                                                          |
| Morris, Schindehutte & Allen, 2005 | “A business model is a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets” (p. 727). | - Venture strategy;  
- architecture;  
- business economics;  
- competitive advantage;  
- markets.                                                                                                               |
| (Calia, Guerrini & Moura, 2007; Andersen, Mathews, Rask, 2009) | “A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.” (p. 10) | - Customer value;  
- financial consequences;  
- revenue stream;  
- customer segment(s);  
- value creation;  
- partners network.                                                                 |
<p>| Osterwalder, Pigneur &amp; Tucci, 2005 |                                                                                                                                                                                                                              |                                                                                                                                               |</p>
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<td>Shafer, Smith &amp; Linder, 2005</td>
<td>&quot;A business model is a representation of the underlying core logic and strategic choices for creating and capturing value within a value network&quot; (p. 202)</td>
<td>- Core logic; - strategic choices; - value capture; - value creation.</td>
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<td>(Ammar, 2006; Dahan, et al., 2010; Roome and Louche, 2016)</td>
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<td>Govindarajan &amp; Trimble, 2005</td>
<td>The business model defines &quot;Who is the customer, What value is it offered to her, How is that value delivered?&quot;</td>
<td>- Customer; - value proposition; - value delivery.</td>
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<td>Bonaccorsi, Giannangeli &amp; Rossi, 2006</td>
<td>“The way product/services are sold to customers, cost is generated and income is produced” (p.1086).</td>
<td>- Product; - service; - cost; - income.</td>
</tr>
<tr>
<td>Brousseau &amp; Penard, 2006</td>
<td>“A pattern of organizing exchanges and allocating various costs and revenue streams so that the production and exchange of goods and services becomes viable, in the sense of being self-sustainable on the basis of the income it generates.” (p. 82)</td>
<td>- Exchanges of goods and services; - cost streams; - revenue streams; - production.</td>
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<td>Chesbrough, (a) 2007</td>
<td>“The functions of a business model are: 1. Articulate the value proposition, i.e. the value created for users by the offering. 2. Identify a market segment, i.e. the users to whom the offerings is useful and for what purpose. 3. Define the structure of the value chain required by the firm to create and distribute the offering, and determine the complementary assets needed to support the firm’s position in this chain. 4. Specify the revenue generation mechanism for the firm, and estimate the cost structure and potential of producing the offering, given the value proposition and value chain structure. 5. Describe the position of the firm within the value network, linking suppliers and customer, including identification of potential complementors and competitors. 6. Formulate the competitive strategy, by which the innovating firm will gain and hold advantage over rivals.” (Exhibit 1, p.13).</td>
<td>- Value proposition; - market segment; - structure of the value chain; - complementary assets; - revenue generation mechanism; - cost structure and potential of producing the offering; - position of the firm in the value network (suppliers, customers, complementors, competitors); - competitive strategy.</td>
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| Chesbrough, (b) 2007 | “In essence, a business model performs two important functions: it creates value, and it captures a portion of that value.” (p.22) | - Value Creation  
- Value Capture (competitive advantage). |
| Seelos & Mair, 2007 | “A set of capabilities that is configured to enable value creation consistent with either economic or social strategic objectives.” (p. 53) | - Capabilities;  
- value creation;  
- social value creation. |
| Al-Debei, El-Haddadeh & Avison, 2008 (Panagiotopoulos et al., 2012) | This paper defines the BM as an abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, co-operational and financial arrangements designed and developed by an organization presently and in the future, as well as all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives.” (p. 372) | - Architectural arrangements (value architecture);  
- co-operational arrangements (value network);  
- financial arrangements (value finance). |
| Konde, 2008 | "A typical business model consists of three components - value proposition, value-chain structure and revenue generation.” (p. 215) | - Value proposition;  
- value-chain structure;  
- revenue generation. |
| Hurt, 2008 | A business model is "the total architecture of the firm made up of a set of components and linkages, reflecting the firm’s choices.” (p. 1) | - The way of doing business;  
- the set of choices;  
- the set of consequences derived from those choices. |
| Richardson, 2008 | "Business model can be seen as the conceptual and architectural implementation of a business strategy and as the foundation for the implementation of business processes. The business model framework is organized around the concept of value," (p. 136) | - Value proposition;  
- value creation and delivery system;  
- value capture. |
<p>| Fiet &amp; Patel, 2008 | “A business model explains how a venture is expected to create a profit”. (p.751) | - Profit |</p>
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<td>Johnson, Christensen &amp; Kagermann, 2008</td>
<td>“A business model consist of four interlocking elements, that, taken together, create and deliver value” (p. 52). These are: Customer Value Proposition, Profit Formula, Key resources and Key processes.</td>
<td>- Customer value proposition; - profit formula; - key resources; - key processes.</td>
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<td>(Hwang &amp; Christensen, 2008; Johnson &amp; Suskewicz, 2009)</td>
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<td>Andersson, Johannesson &amp; Zdravkovic, 2009</td>
<td>&quot;A business model gives a high level view of the activities taking place in and between organizations by identifying agents, resources, and the exchange of resources between the agents.&quot; (p. 144) Define the business model by mean of the following components -Service component: a description of the value proposition (added value of a service offering) and the market segment at which the offering is aimed; -Technological component: a description of the technical functionality required to realize the service offering; -Organizational component: a description of the structure of the multi-actor value network required to create and distribute the service offering and to describe the focal firm’s position within the value network; -Financial component: a description of the way a value network intends to generate revenues from a particular service offering and of the way risks, investments and revenues are divided among the various actors in a value network.</td>
<td>- Activities; - agents/actors; - resources; - exchange of resources between the agents. - Value proposition; - market segment at which the offering is aimed; - technology (technical functionality); - (structure of the multi-actor) value network; - focal firm’s position within the value network; - (value network) revenues; - (value network) risks; - (value network) investments; - (value network) revenues.</td>
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<td>De Reuver &amp; Haaker, 2009</td>
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<td>Froud, Johal, Leaver, Phillips &amp; Williams, 2009</td>
<td>Use a two dimensional conceptualization of the business model. Dimensions are cost recovery (i.e. the need to recover costs incurred) and stakeholder expectations (the need to secure credibility in the eyes of stakeholders meeting stakeholder expectation and demands).</td>
<td>- Cost recovery; - stakeholder.</td>
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| Sabatier, Mangematin & Rousselle, 2010 | "We define business model portfolio as the range of different ways a firm delivers value to its customers to ensure both its medium term viability and future development." (p. 431) | - Value delivery;  
- strategy;  
- time-to-market;  
- revenue stream;  
- risk;  
- interdependencies. |
| Weill, Malone & Apel, 2010    | “The concept of business model provides a fundamental tool for analyzing many important strategic decisions, [...] for analyzing how a company is managed and the resulting stock market total return”. (p. 19) | - Strategic decisions;  
- how a company is managed;  
- stock market total return. |
| Wirtz, Schilke & Ullrich, 2010 | “A business model reflects the operational and output system of a company, and as such captures the way the firm functions and creates value”. (p. 274) | - Sourcing (resources);  
- Value generation;  
- Value offering (product and services);  
- Distribution;  
- Revenues. |
| Zott & Amit, 2010             | “A business model [is a] set of activities, as well as the resources and capabilities to perform them - either within the firm, or beyond it through cooperation with partners, suppliers or customers”. (p. 217) | - Activity system content: the selection of activities;  
- activity system structure: how the activities are linked;  
- activity system governance: who performs the activities;  
- exchange partners (partners, suppliers, customers)  
- resources and capabilities (to perform the activities);  
- value creation. |
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<tr>
<td>Chesbrough, 2010</td>
<td>“A business model articulates the value proposition (i.e., the value created for users by an offering based on technology), identifies a market segment and specify the revenue generation mechanism (i.e., users to whom technology is useful and for what purpose), defines the structure of the value chain required to create and distribute the offering and complementary assets needed to support position in the chain, details the revenue mechanism(s) by which the firm will be paid for the offering, estimates the cost structure and profit potential (given value proposition and value chain structure), describes the position of the firm within the value network linking suppliers and customers (incl. identifying potential complementors and competitors), and formulates the competitive strategy by which the innovating firm will gain and hold advantage over rivals”. (p. 355)</td>
<td>- Key activities; - partner network; - key resources; - cost structure; - value proposition; - client relationships; - client segments; - distribution channels; - revenue flows.</td>
</tr>
<tr>
<td>Gambardella &amp; McGahan, 2010</td>
<td>&quot;A business model is an organization's approach to generating revenue at a reasonable cost, and incorporates assumptions about how it will both create and capture value.” (p. 263)</td>
<td>- Revenue generation; - cost; - value creation; - value capture.</td>
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<td>Teece, 2010</td>
<td>“A business model articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value. [...] It’s about the benefit the enterprise will deliver to customers, how it will organize to do so, and how it will capture a portion of the value that it delivers”. (p.179) &quot;It reflects management's hypothesis about what customers want, how they want it, and how an enterprise can best meet those needs and get paid for doing so&quot;.</td>
<td>- Value proposition (logic, data, other evidence that support it); - revenue and cost structure (value capture).</td>
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<tr>
<td>Casadesus-Masanell &amp; Ricart, 2010</td>
<td>“Business Model refers to the logic of the firm, the way it operates and how it creates value for its stakeholders”. (p. 196) “A firm’s business model is a reflection of its realized strategy”. (p. 205)</td>
<td>- Logic of the firm; - the concrete choices made by management about how the organization must operate; - the consequences of these choices; - value creation for the customers.</td>
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<td>Itami &amp; Nishino, 2010</td>
<td>“A business model is composed of two elements, a business system and a profit model.” (p.364)</td>
<td>- Business system;</td>
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<td>- profit model.</td>
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<td>Markides &amp; Oyon, 2010</td>
<td>“A business model distinguishes a company/unit according to its strategy, culture and processes”. (p. 7)</td>
<td>- Strategy;</td>
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<td>- culture;</td>
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<td>- processes.</td>
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<td>Demil &amp; Lecocq, 2010</td>
<td>“Generally speaking, the concept refers to the description of the articulation between different BM components or &quot;building blocks&quot; (resources and competences, organization, value propositions) to produce a proposition that can generate value for consumers and thus for the organization”. (p. 227)</td>
<td>- Resources and competences;</td>
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<td>- organizational structure;</td>
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<td>- value propositions.</td>
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<td>Doz &amp; Kosonen, 2010</td>
<td>&quot;Business models can be defined both objectively and subjectively. Objectively they are sets of structures and interdependent operational relationships between a firm and its customers, suppliers, complementors, partners and other stakeholders, and among its internal units and departments (functions, staff, operating units, etc). These &quot;actual&quot; relationships are articulated in procedures or contracts and embedded in (often) tacit action routines. But, for the firm's management, business models also function as a subjective representation of these mechanisms, delineating how it believes the firm relates to its environment. So business models stand as a cognitive structures providing a theory of how to set boundaries to the firm, of how to create value, and how to organise its internal structure and governance”. (p. 370-371)</td>
<td>- Set of interdependent operational relationships;</td>
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<td>- customers;</td>
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<td>- stakeholders (suppliers, complementors, partners, internal departments);</td>
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<td>- departments;</td>
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<td>- subjective representation.</td>
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<td>McGrath, 2010</td>
<td>“Two core components constitute a business model. The first is the basic ‘unit of business’, which is the building block of any strategy, because it refers to what customers pay for. The second are process or operational advantages, which yield performance benefits when more adroit deployment of resources leads a firm to enjoy superior efficiency or effectiveness on the key variables that influence its profitability”. (pag.249)</td>
<td>- Business units;</td>
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<td>- process or operational advantages.</td>
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<td>Smith, Binns &amp; Tushman, 2010</td>
<td>&quot;By business model, we mean the design by which an organization converts a given set of strategic choices - about markets, customers, value propositions - into value, and uses a particular organizational architecture - of people, competencies, processes, culture and measurement systems - in order to create and capture this value.&quot; (p. 450)</td>
<td>- Markets; - customers; - value propositions; - people; - competencies; - processes; - culture; - measurement systems; - value creation; - value capture.</td>
</tr>
<tr>
<td>Yunus, Moingeon &amp; Lehmann-Ortega, 2010</td>
<td>“We suggest that a business model has three components: a value proposition, a value constellation, a profit equation.” (p. 311)</td>
<td>- Value proposition; - value constellation; - profit equation.</td>
</tr>
<tr>
<td>Hienerth, Keinz &amp; Lettl, 2011</td>
<td>“A business model describes the logic of how a business creates and delivers value to users and converts payments received into profits”. (p. 346)</td>
<td>- Customer value proposition; - profit formula; - key resources; - key processes.</td>
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<td>Sorescu, Frambach, Singh, Rangaswamy &amp; Bridges, 2011</td>
<td>&quot;A business model is a well-specified system of interdependent structures, activities, and processes that serves as a firm’s organizing logic for value creation (for its customers) and value appropriation (for itself and its partners).&quot; (p. S4)</td>
<td>- Firm's organizing logic (structures, activities, processes); - value creation for the customers; - value appropriation (for the company and its partners).</td>
</tr>
<tr>
<td>Provance, Donnelly &amp; Carayannis, 2011</td>
<td>“Business models have traditionally been viewed as constructions of the internal values, strategies, and resources of organizations”. (p. 5630)</td>
<td>- Internal values; - strategies; - resources of an organization.</td>
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<tr>
<td>Mason &amp; Spring, 2011</td>
<td>&quot;Business models can be understood as a framing device for influencing and shaping collective and individual action&quot;. (p. 1038)</td>
<td>- Technology; - market offering; - network architecture.</td>
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<td>San Román, Momber, Abbad &amp; Miralles, 2011</td>
<td>“A business model describes how a product or service is provided, including perceived value creation of a certain product for a final customer”. (p. 6364)</td>
<td>- Product or service;</td>
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<td>- Value creation for a final customer.</td>
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<td>Describe more than 40 components, such as:</td>
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<td>Sinfield, Calder, McConnell &amp; Colson, 2012</td>
<td>“[…] A business model includes all aspects of a company’s approach to developing a profitable offering and delivering it to its target customers”. (p.87)</td>
<td>- target customer;</td>
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<td>- type of offering;</td>
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<td>- pricing approach.</td>
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<td>Baden-Fuller &amp; Haefliger, 2013</td>
<td>“We define the business model as a system that solves the problem of identifying who is (or are) the customer(s), engaging with their needs, delivering satisfaction, and monetizing the value. The framework depicts the business model system as a model containing cause and effect relationships, and it provides a basis for classification. We formulate the business model relationship with technology in a two-way manner. First, business models mediate the link between technology and firm performance. Secondly, developing the right technology is a matter of a business model decision regarding openness and user engagement”. (p.419)</td>
<td>- Customer identification;</td>
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<td>- customer engagement (value proposition);</td>
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<td>- value delivery and linkages;</td>
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<td>- monetization (value capture).</td>
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<td>Aspara, Lamberg, Laukia, Tikkanen, 2013</td>
<td>“We view the business unit-level business model as the business unit managers’ perceived logic of how the unit in question functions and creates value, in connection with both its market environment, and within the corporation (i.e., with its other business units).” (p. 460)</td>
<td>- Business units;</td>
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<td>- value creation;</td>
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<td>- market environment;</td>
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<td>- revenue and/or costs production.</td>
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<td>“The business model in this agenda is not a complete description of what the firm does, but rather it should be stripped down characterization, that captures the essence of the cause-effect relationships between customers, the organisation and money. Hence, a business model is a special example of a configuration (as defined by Fiss, 2011).” (p. 2)</td>
<td>- Customers;</td>
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<td></td>
<td></td>
<td>- customer engagement (value proposition);</td>
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<td></td>
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<td>- monetization;</td>
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<td></td>
<td></td>
<td>- value chain and linkages (sometimes called architecture or governance systems).</td>
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<tr>
<td>Author(s)</td>
<td>Definitions/conceptualizations</td>
<td>First order components/themes</td>
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<tr>
<td>Boons &amp; Lüdeke-Freund, 2013</td>
<td>“Our definition of a business model - the value proposition, organization of supply chain and customer interface, and financial model.” (p. 16) “[…] a business model is used as a plan which specifies how a new venture can become profitable.” (p. 10)</td>
<td>- Value proposition;</td>
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<td>- supply chain;</td>
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<td>- customer interface;</td>
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<td>- financial model.</td>
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<td>Nielsen &amp; Lund, 2014</td>
<td>“The business model is the platform which connects resources, processes and the supply of a service which results in the fact that the company is profitable in the long term.” (p.9)</td>
<td>- Resources;</td>
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<td>- processes;</td>
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<td>- supply of a service;</td>
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<td>- connections and interrelations of the business;</td>
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<td>- value creation.</td>
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<tr>
<td>Bohnsack, Pinkse &amp; Kolk, 2014</td>
<td>“…[We] structured it by distinguishing between three main components – i.e. value proposition, value network, and revenue/cost model derived from existing frameworks”. (p. 288).</td>
<td>- Value proposition;</td>
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<td></td>
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<td>- value network;</td>
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<td>- revenue &amp; cost model.</td>
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<tr>
<td>Bocken, Short, Rana &amp; Evans, 2014</td>
<td>“Sustainable business models (SBM) incorporate a triple bottom line approach and consider a wide range of stakeholder interests, including environment and society.” (p. 42)</td>
<td>- Stakeholder interests (including environment and society);</td>
</tr>
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<td></td>
<td></td>
<td>- Triple Bottom line.</td>
</tr>
<tr>
<td>Reim, Parida &amp; Ortvist, 2015</td>
<td>“Business models describe the design or architecture of the value creation, delivery and capture mechanisms”. (p. 65)</td>
<td>- Value creation;</td>
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<td>- value delivery;</td>
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<td></td>
<td></td>
<td>- value-capture mechanisms.</td>
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<tr>
<td>Author(s)</td>
<td>Definitions/conceptualizations</td>
<td>First order components/themes</td>
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<tr>
<td>Bocken, Rana &amp; Short, 2015</td>
<td>“[…] a “business model” might provide a structured way for sustainable business thinking by mapping the purpose, opportunities for value creation across the network, and value capture (how to generate revenue) in companies.” (p. 67). This requires that “a wider [than done for traditional business models] range of stakeholders, including environment and society, and value creation, needs to be considered.” (p. 78)</td>
<td>- Purpose; - opportunities (for value creation); - network; - stakeholders; - Environment; - Society; - value capture.</td>
</tr>
<tr>
<td>Wells, 2015</td>
<td>&quot;In broad terms, a business model can be defined as having three constituting elements: the value network and product/service offering that defines how the business is articulated with other businesses and internally (i.e. how value is created); the value proposition that defines how products and/or services are presented to consumers in exchange for money (i.e. how value is captured); and the context of regulations, incentives, prices, government policy and so on (i.e. how value is situated within the wider socioeconomic framework)&quot;. (p. 37)</td>
<td>- The value network and product/service; - the value proposition; - socioeconomic framework.</td>
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<tr>
<td>Schaltegger, Hansen, Ludeke-Freunde, 2016</td>
<td>&quot;A business model for sustainability helps describing, analyzing, managing and communicating (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries&quot;. (p. 6)</td>
<td>- Sustainable value proposition; - how value is created and delivered; - how economic value is captured.</td>
</tr>
<tr>
<td>Upward, Jones, 2016</td>
<td>&quot;A description of how a business defines and achieves success over time&quot;. (p. 98)</td>
<td>- Definition of success; - how success is achieved over time.</td>
</tr>
</tbody>
</table>
# TABLE M4: FIRST ORDER COMPONENTS

(All references from M3 that point to that component or equivalent)

<table>
<thead>
<tr>
<th></th>
<th>Value creation</th>
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<tbody>
<tr>
<td></td>
<td>- Value generation (Wirtz, Schilke &amp; Ullrich, 2010).</td>
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<td></td>
<td>- Opportunities (Bocken, Rana &amp; Short, 2015).</td>
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<td></td>
<td>Value creation (stakeholders)</td>
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<tr>
<td></td>
<td>- Business actors (Timmers, 1998).</td>
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<td></td>
<td>- Return to investors and stakeholders (Applegate, 2001).</td>
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<td></td>
<td>- Benefits for participants (Weill &amp; Vitale, 2001).</td>
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<td>- The concrete choices made by management about how the organization must operate to create value (Casadesus-Masanell &amp; Ricart, 2010).</td>
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<tr>
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<td>Value creation (customer(s))</td>
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<td></td>
<td>- Benefits for participants (Weill &amp; Vitale, 2001).</td>
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<td></td>
<td>- Customer value (Osterwalder, Pigneur &amp; Tucci, 2005).</td>
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<td>- Value creation for the final customer (San Román, Momber, Abbad &amp; Miralles, 2011; Sorescu, Frambach, Singh, Rangaswamy &amp; Bridges, 2011).</td>
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<tr>
<td></td>
<td>- Value proposition (Alt &amp; Zimmerman, 2001; Chesbrough &amp; Rosenbloom, 2002; Rayport &amp;</td>
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</tbody>
</table>
Jaworsky, 2002; Van Der Vorst, Van Dongen, Nougrier & Hilhorst, 2002; Yip, 2004; Govindarajan & Trimble, 2005; Hwang & Christensen, 2008; Johnson, Christensen & Kagermann, 2008; Konde, 2008; Richardson, 2008; Chesbrough, 2010; Demil & Lecocq, 2010; Boons & Lüdeke-Freund, 2013; Bohnsack, Pinkse & Kolk, 2014; Wells, 2015; Abdelkafi, Täuscher, 2016; Schaltegger, Hansen, Ludeke-Freunde, 2016).

- Concept defining an opportunity (Applegate, 2001).
- What the customer values (Magreta, 2002).
- Customer benefits (Afuah, 2004).
- Service component (De Reuver & Haaker, 2009).
- Logic, data, other evidence that support it (Teece, 2010).
- Value offering (Wirtz, Schilke & Ullrich, 2010; De Langea, 2011).
- Customers, product/service (Yunus, Moingeon & Lehmann-Ortega, 2010).
- Market offering (Mason & Spring, 2011).
- (New) customer value (Hamel, 2000).

4 Value delivery

- Value delivery (Dubosson-Torbay, Osterwalder & Pigneur, 2002; Govindarajan & Trimble, 2005; Richardson, 2008; Sabatier, Mangematin & Rousselle, 2010; Baden-Fuller & Haefliger, 2013; Klang, Wallnofer & Hacklin, 2014; Reim, Parida & Ortvist, 2015; Schaltegger, Hansen, Ludeke-Freunde, 2016).

5 Value stream

- Value stream (Mahadevan, 2000).

6 Value architecture

- Architectural arrangements (Al-Debei, El-Haddadeh & Avison, 2008)
- Architecture (Morris et al., 2005)
- Value constellation: internal value chain, external value chain (Yunus, Moingeon & Lehmann-Ortega, 2010).
- Value network (Bohsack, Pinkse & Kolk, 2014; Wells, 2015).
• Value chain structure (Konde, 2008).
• Logistical stream (Mahadevan, 2000).

7 Value capture

• Return to investors (Applegate, 2001).
• Benefits for participants (Weill & Vitale, 2001; Richardson, 2008; Gambardella & McGahan, 2010; Sabatier, Mangematin & Rousselle, 2010; Klang, Wallnofer & Hacklin, 2014; Bocken, Rana & Short, 2015; Reim, Parida & Ortilqvist, 2015; Abdelkafi, Täuscher, 2016; Schaltegger, Hansen, Ludeke-Freunde, 2016).
• Value capture (Shafer, Smith & Linder, 2005).
• Value appropriation (Sorescu, Frambach, Singh, Rangaswamy & Bridges, 2011).
• Monetization, often labeled value capture (Baden-Fuller & Haefliger, 2013).

8 Offering (Service / product / information goods)

• Offering (Hedman & Kalling, 2003).
• What, when, why (Mitchell & Coles, 2003).
• What the company offers (Osterwalder, 2004).
• Nature of outputs (Yip, 2004).

   Service
• Service (Viscio & Pasternack, 1996; Chesborough, 2007b; San Román, Momber, Abbad & Miralles, 2011; Nielsen & Lund, 2014; Wells, 2015; Bonaccorsi et al., 2006).

   Product
• Product (Timmers, 1998; Weill & Vitale, 2001; Chesborough, 2007b; San Román, Momber, Abbad & Miralles, 2011; Wells, 2015; Bonaccorsi et al., 2006).

   Information goods
• Information goods (Rayport & Jaworsky, 2002).

9 Delivery channels

• Distribution channels (Chesbrough, 2010).
• Distribution domain (Wirtz, Schilke & Ullrich, 2010).
Customers/market segment

- Market segment (Chesbrough & Rosenbloom, 2002).
- Customer segments (Dubosson-Torbay, Osterwalder & Pigneur, 2002).
- Target customer (Rayport & Jaworsky, 2002).
- To whom the company offers this (Osterwalder, 2004).
- Nature of customers (Yip, 2004).
- Service component (De Reuver & Haaker, 2009).
- Client segments (Chesbrough, 2010).
- Markets (Morris et al., 2005).

Exchange partners/stakeholders

- Business actors (Timmers, 1998).
- Exchange partners (Dubosson-Torbay, Osterwalder & Pigneur, 2002).
- Actors (Mahadevan, 2000; Alt & Zimmerman, 2001; Panagiotopoulos, Al-Debei, Fitzgerald & Elliman, 2012).
- Roles of participants (Van Der Vorst, Van Dongen, Nouguier & Hilhorst, 2002).
- Partners network (Osterwalder, Pigneur & Tucci, 2005; Chesbrough, 2010).
- Stakeholders (Weill & Vitale, 2001; Zott & Amit, 2007; Doz & Kosonen, 2010).
- Agents or actors (Andersson, Johannesson & Zdravkovic, 2009).
- Multiactor value network (De Reuver & Haaker, 2009).
- Network architecture (Mason & Spring, 2011).
- Network (Bocken, Rana & Short, 2015).

Resources/capabilities

Resources (Applegate, 2001; Chesborough, 2007b; Hwang & Christensen, 2008; Johnson, Christensen & Kagermann, 2008; Andersson, Johannesson & Zdravkovic, 2009; Chesbrough, 2010; Demil & Lecocq, 2010; De Langea, 2011; Provance, Donnelly & Carayannis, 2011;
• Resource system (Rayport & Jaworsky, 2002).
• Supply of factors and production inputs (Hedman & Kalling, 2003).
• Inputs (Yip, 2004).
• Sourcing domain (Wirtz, Schilke & Ullrich, 2010).
• Resources to perform the activities (Zott & Amit, 2010).

Capabilities
• Capabilities (Applegate, 2001; Seelos & Mair, 2007; Dahan, Doh, Oetzel & Yaziji, 2010).
• How the company can accomplish this (Osterwalder, 2004).
• How to transform inputs (Yip, 2004).
• Competences (Demil & Lecocq, 2010).
• Capabilities and competences (Sabatier, Mangematin & Rousselle, 2010).
• Capabilities to perform the activities (Zott & Amit, 2010).

Technology
• Technology (Alt & Zimmerman, 2001; Björkdahl, 2009).
• Functionalities and applications (Van Der Vorst, Van Dongen, Nougueir & Hilhorst, 2002).
• Level of newness of the biotechnology used (Bigliardi, Nosella & Verbano, 2005).
• Technological component (De Reuver & Haaker, 2009).
• The technologies that make up the product/service offering, its delivery and management (Mason & Spring, 2011).

Revenue stream
• Sources of revenues (Mahadevan, 2000; Alt & Zimmerman, 2001).
• Flows of money (Weill & Vitale, 2001).
• Revenue streams (Dubosson-Torbay, Osterwalder & Pigneur, 2002; Osterwalder, Pigneur & Tucci, 2005; Brousseau & Penard, 2006;).
• How money are made (Magretta, 2002).
• The way the company makes money (Osterwalder, 2004).
• Revenue logic (Ojala & Tyrväinene, 2006).
• Financial arrangements (Al-Debei, El-Haddadeh & Avison, 2008).
• Revenue generation (Konde, 2008).
• Revenue model (Bohnsack, Pinkse & Kolk, 2014).
• Revenue flows (Chesbrough, 2010).
• Revenue structure (Teece, 2010).
• Revenue domain (Wirtz, Schilke & Ullrich, 2010).
• Revenue production (Aspara, Lamberg, Laukia, Tikkanen, 2013).
• How products and/or services are presented to consumers in exchange for money (Wells, 2015).
• Revenues (De Reuver & Haaker, 2009).
• Income (Bonaccorsi et al., 2006)

15 Cost structure

Cost structure
• Cost structure (Chesbrough & Rosenbloom, 2002; Chesbrough, 2010; Teece, 2010).
• Underlying economic logic for value delivery (Magretta, 2002).
• Cost stream (Brousseau & Penard, 2006).
• Financial arrangements (Al-Debei, El-Haddadeh & Avison, 2008).
• Cost(s) (Gambardella & McGahan, 2010; Aspara, Lamberg, Laukia, Tikkanen, 2013; Bonaccorsi et al., 2005).
• Cost model (Bohnsack, Pinkse & Kolk, 2014).

Investments
• Investments (De Reuver & Haaker, 2009).

16 Financial model/profits

Financial model
• Financial model (Rayport & Jaworsky, 2002; Boons & Lüdeke-Freund, 2013).
• Business Economics (Morris et al., 2005)

Profits
• Profit potential (Chesbrough & Rosenbloom, 2002).
• Profit (Afuah, 2004).
• Financial consequences (Osterwalder, Pigneur & Tucci, 2005).
• Profit formula (Hwang & Christensen, 2008; Johnson, Christensen & Kagermann, 2008).
• Financial arrangements (Al-Debei, El-Haddadeh & Avison, 2008).
• Expected returns (Sabatier, Mangematin & Rousselle, 2010).
• Stock market total return (Weill, Malone & Apel, 2010).
• Profit equation: sales revenues, cost structure, capital employed (Yunus, Moingeon & Lehmann-Ortega, 2010).

Cost recovery
• Cost recovery (Froud, Johal, Leaver, Phillips & Williams, 2009).

17 Exchanges (Exchanges / relationships / transactions/information flows)

Exchanges
• Exchange of goods and services (Brousseau & Penard, 2006).
• Connections and interrelations of the business (Nielsen & Lund, 2014).
• Co-operational arrangements, value network (Al-Debei, El-Haddadeh & Avison, 2008).
• Exchange of resources between the agents (Andersson, Johannesson & Zdravkovic, 2008).
• Interdependencies with other organisations (Sabatier, Mangematin & Rousselle, 2010).

Relationship(s)
• Relationship capital (Dubosson-Torbay, Osterwalder & Pigneur, 2002).
• Client relationships (Chesbrough, 2010).
• Set of interdependent operational relationships (Doz & Kosonen, 2010).
• Interaction with the customers (Sabatier, Mangematin & Rousselle, 2010).
• Customer engagement, linkages (Baden-Fuller & Haefliger, 2013)\(^1\).
• Relationships with upstream suppliers; customer interface (Boons & Lüdeke-Freund, 2013).
• Linkages (Viscio & Pasternack, 1996).

Transactions
• Content, structure and governance of the transactions (Zott & Amit, 2007).

Information flows
• Information flows (Timmers, 1998).
• Exchanging information (Van Der Vorst, Van Dongen, Nougier & Hilhorst, 2002).
• Communication flows (Panagiotopoulos, Al-Debei, Fitzgerald & Elliman, 2012).
• Flows of information (Weill & Vitale, 2001).

18 Activities/processes

\(^1\) Baden-Fuller et al., 2013 consider “customer engagement” and “linkages” as two distinct components.
Activities

- Activities (Afuah, 2004; Chesborough, 2007b; Andersson, Johannesson & Zdravkovic, 2009; Chesborough, 2010; De Langea, 2011; Sorescu, Frambach, Singh, Rangaswamy & Bridges, 2011).
- Activities and organisation (Hedman & Kalling, 2003).
- Activity system content, structure, governance (Zott & Amit, 2010).
- Activity systems (Zook & Allen, 2011).

Processes

- Processes (Van Der Vorst, Van Dongen, Nouguier & Hilhorst, 2002; Hwang & Christensen, 2008; Johnson, Christensen & Kagermann, 2008; Markides & Oyon, 2010; Sorescu, Frambach, Singh, Rangaswamy & Bridges, 2011; Nielsen & Lund, 2014).
- Production (Brousseau & Penard, 2006).

Strategy

Strategy

- Strategic choices (Shafer, Smith & Linder, 2005).
- The concrete choices made by management about how the organization must operate (Casadesus-Masanell & Ricart, 2010).
- Strategy (Markides & Oyon, 2010; Sabatier, Mangematin & Rousselle, 2010; Provance, Donnelly & Carayannis, 2011).
- Strategic decisions (Weill, Malone & Apel, 2010).
- Venture Strategy (Morris et al., 2005).

Competitive strategy

- Competitive strategy (Chesbrough & Rosenbloom, 2002).
- Competitive advantage (Chesborough, 2007b; Morris et al., 2005).
- Operational advantage (McGrath, 2010).
- Sources of differentiation (Zook & Allen, 2011).

Markets/boundaries

Markets

- Markets (Sabatier, Mangematin & Rousselle, 2010; Smith, Binns & Tushman, 2010).

**Vertical scope**
• Vertical scope (Yip, 2004).
• Level of R&D integration (Bigliardi, Nosella & Verbano, 2005).

**Horizontal scope**
• Horizontal scope (Yip, 2004).

**Geographic scope**
• Geographic scope (Yip, 2004).
• Geographical location (Bigliardi, Nosella & Verbano, 2005).
• Size
• Size (Bigliardi, Nosella & Verbano, 2005).

**Industry**
• Level of industrialization and service of the sector (Bigliardi, Nosella & Verbano, 2005).

21 **Risk**

• Risk(s) (De Reuver & Haaker, 2009; Sabatier, Mangematin & Rousselle, 2010).

22 **Triple Bottom Line**

• Triple Bottom Line, stakeholder interests (society, environment) (Bocken, Short, Rana & Evans, 2014)\(^2\).
• Social and environmental value creation (Bocken, Rana and Short, 2015).
• Social value creation (Seelos & Mair, 2007).

23 **Organization informal**

• Purpose (Bocken, Short, Rana & Evans, 2014).
• Behaviors (Zook & Allen, 2011).
• Routines (Zook & Allen, 2011).
• Internal values (Provance, Donnelly & Carayannis, 2011).
• Culture (Markides & Oyon, 2010).

\(^2\) Bocken et al., 2014 consider “Triple Bottom Line” and “stakeholder interests” as two distinct components.
• Subjective representations (Doz & Kosonen, 2010).
• Scope of management (Hedman & Kalling, 2003).

24 Organization formal

• The value chain of activities (Demil & Lecocq, 2010).
• Organization architecture (Smith, Binns & Tushman, 2010).
• How a company is managed (Weill, Malone & Apel, 2010).
• Structures (Doz & Kosonen, 2010; Sorescu, Frambach, Singh, Rangaswamy & Bridges, 2011).

25 Business units

• Business units (Viscio & Pasternack, 1996; McGrath, 2010).

26 Departments

• Departments (Doz & Kosonen, 2010).

27 Competitors

• Competitors (Hedman & Kalling, 2003).

28 Governance

• Governance (Viscio & Pasternack, 1996).

29 Age

• Age (Bigliardi, Nosella & Verbano, 2005).

30 Legal issues

• Legal issues (Alt & Zimmerman, 2001).
31 **Time-to-market**
   - Time-to-market (Sabatier, Mangematin & Rousselle, 2010).

32 **Socioeconomic framework**
   - The context of regulation, incentives, prices, government policy and so on (Wells, 2015).

33 **Consequences of choices**
   - Consequences of choices (about how the organization must operate) (Casadesus-Masanell & Ricart, 2010).

34 **Stakeholder expectations**
   - Stakeholder expectations (Froud, Johal, Leaver, Phillips & Williams, 2009).