

THE BUSINESS MODEL: THEORETICAL ROOTS, RECENT DEVELOPMENTS, AND FUTURE RESEARCH

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Abstract

The paper provides a broad and multifaceted review of the received literature on business models in which we examine the business model concept through multiple disciplinary and subject-matter lenses. The review reveals that scholars do not agree on what a business model is, and that the literature is developing largely in silos, according to the phenomena of interest to the respective researchers. However, we also found some emerging common ground among students of business models. Specifically, 1) the business model is emerging as a new unit of analysis; 2) business models emphasize a system-level, holistic approach towards explaining how firms do business; 3) organizational activities play an important role in the various conceptualizations of business models that have been proposed; and 4) business models seek to explain how value is created and captured. These emerging themes could serve as important catalysts towards a more unified study of business models.

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Introduction

In recent years, the business model has been the focus of substantial attention by both academics and practitioners. Since 1995 there have been 1,177 papers published in peer-reviewed academic journals in which the notion of a business model is addressed. The business model has also been the subject of a growing number of practitioner-oriented studies. While there has been an explosion in the number of papers published, and an abundance of conference sessions and panels on the subject of business models, it appears that researchers (and practitioners) have yet to develop a common and widely accepted language that would allow researchers who examine the business model construct through different lenses to draw effectively on each others' work.

In this comprehensive review of the academic literature, we have attempted to explore the origin of the construct and to examine the business model concept through multiple disciplinary and subject-matter lenses. This broad and multifaceted review revealed several insights, including:

- Despite the overall surge in the literature on business models, scholars do not agree on what a business model is. We observe that researchers frequently adopt idiosyncratic definitions that fit the purposes of their studies, but that are difficult to reconcile with each other. As a result, cumulative progress is hampered.
- The literature is developing largely in silos, according to the phenomena of interest to the respective researchers. The main interest areas identified are: 1) e-business and the use of information technology in organizations; 2) strategic issues, such as value creation, competitive advantage, and firm performance; and 3) innovation and technology management. There seems to be an opportunity to bridge these silos in order to move the literature forward.
- Despite conceptual differences among researchers in different silos (and within the same silo), there are some emerging themes, notably: 1) there is widespread acknowledgement—implicit and explicit—that the business model is a new unit of analysis in addition to the product, firm, industry, or network levels; it is centered on a focal organization, but its boundaries are wider than those of the organization; 2) business models emphasize a system-level, holistic approach towards explaining how firms do business; 3) organizational activities play an important role in the various conceptualizations of business models that have been proposed; and 4)

business models seek to explain both value creation and value capture. These emerging themes could serve as important catalysts towards a more unified study of business models.

In addition to our review of the business model literature, there is a range of associated literatures that can inform the study of business models, but which do not directly employ the term, such as the work on new organizational forms, ecosystems, activity systems, and value chains and value networks. We draw on these literatures to synthesize the main insights that they bring to bear on the study of business models.

Our intended contributions in this article, then, are two-fold: first, to provide the most comprehensive and up-to-date literature review on business models, as well as to document carefully the discrepancies and dissonances in that literature; and second, to structure the literature along its main fault lines and begin to bridge the seemingly wide gaps between the various approaches. This should facilitate future cumulative research on the topic.

The remainder of this review is structured as follows: we begin by briefly reviewing the emergence of the business model concept and proceed to a methods section where we discuss the way this review has been carried out. We then review the business model literature by examining it through multiple lenses. A discussion of related literatures is included in the Appendix.

Method

To conduct this study we followed a multi-step process. First, we searched for articles published in leading academic and practitioner-oriented management journals during the period January 1975 to December 2009. Our initial list of academic journals included the *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), and *Strategic Management Journal* (SMJ). To these we added three of the leading practitioner-oriented journals, namely the *California Management Review* (CMR), *Harvard Business Review* (HBR), and *MIT Sloan Management Review* (MSM). Focusing on papers that contain the term “business model” in the title or keywords, our initial search revealed 70 articles on business models, of which ten had been published in academic journals and 60 had appeared in CMR, HBR, and MSM.

This relatively small set of articles (especially those published in academic outlets) quickly pushed us to extend our search, using the EBSCO Business Source Complete database as a starting point (see Certo, Holcomb, & Holmes, 2009; Laplume, Sonpar, & Litz, 2008). This database includes more than 1,300 business journals and represents one of the most complete sources on business studies. We searched the database for academic articles published from January 1975 until December 2009 containing the term “business model” in the title, abstract, or keywords. As a result of this process, we obtained 1,202 articles, which we added to our initial sample of 70 papers. As 19 of the newly added articles were already present in the initial sample, our overall sample contained 1,253 (= 1,202 + 70 - 19) articles.

An initial cursory analysis of these articles, performed by reading article titles, journal names, abstracts, and introductions, revealed that not all the articles identified by our search would be useful for the purpose of writing this review. Many of these articles were case studies, summaries of articles published elsewhere, or studies in which the business model is not really the subject of the analysis.

To exclude non-relevant articles, we adopted the following three additional criteria for our literature review on business models. First, to be included in our review, an article must deal with the business model concept in a non-trivial and non-marginal way. Second, an article must also refer to the business model as a construct centered on business firms (as opposed to, for example, economic cycles). Lastly, to ensure a minimum level of quality, the journal in which the article appeared must be ranked in the ISI Web of Knowledge. As a result, we identified and eliminated 1,120 articles that did not fit these criteria, which left us with a sample of 133 articles that we deemed relevant for this review.

Through reading these 133 papers in depth, we became aware of further works on business models (in particular, books) which appeared relevant, and which we therefore decided to include in our review. We also found working papers that our database research had failed to reveal. Moreover, our careful reading of these articles also allowed us to exclude further studies in which the business model was treated in a rather marginal or trivial way. Our final sample, therefore, included 103 works (see Table 1 for an overview by publication outlet).

Table 1

Business Model Papers

Publication Outlet	Author(s) - Year
Academy of Management Executive	Ireland et al., 2001; Markides & Charitou, 2004; Seelos & Mair, 2007
British Journal of Management	Froud et al., 2009; Patzelt et al., 2008
California Management Review	Chesbrough et al., 2006; Mahadevan, 2000
Harvard Business Review	Johnson et al., 2008; Johnson & Suskewicz, 2009; Magretta, 2002; Rivette & Kline, 2000
Long Range Planning	Baden-Fuller & Morgan, 2010; Casadesus-Masanell & Ricart, 2010; Chesbrough, 2010; Demil & Lecoq, 2010; Doz & Kosonen, 2010; Gambardella & McGahan, 2010; Itami & Nishino, 2010; McGrath, 2010; Smith, Binns, & Tushman, 2010; Sosna, Trevinyo-Rodríguez & Velamuri, 2010; Svejenova, Planellas, & Vives, 2010; Teece, 2010; Thompson & MacMillan, 2010; Zott & Amit, 2010
MIT Sloan Management Review	Bouchikhi & Kimberly, 2003; Boudreau & Lakhani, 2009; Chesbrough, 2007b; Christensen, 2001; Hayashi, 2009
Research Policy	Björkdahl, 2009; Doganova & Eyquem-Renault, 2009
Strategic Management Journal	Amit & Zott, 2001; Teece, 2007; Zott & Amit, 2008
Strategy and Leadership	Chesbrough, 2007a; Giesen et al., 2007; Sheenan & Stabell, 2007
Other Journals (with only one business model publication each)	Alt & Zimmerman, 2001; Andersson et al., 2009; Applegate, 2001; Bigliardi et al., 2005; Bonaccorsi et al., 2006; Brousseau & Penard, 2006; Calia et al., 2007; Chesbrough & Rosenbloom, 2002; Clemons, 2009; Dubosson-Torbay et al., 2002; Eriksson et al., 2008; Ghaziani & Ventresca, 2005; Gordijn & Akkermans, 2001; Hedman & Kalling, 2003; Huizingh, 2002; Hurt, 2008; IBM, 2006; Konde, 2009; Linder & Cantrell, 2001; Mäkinen & Seppänen, 2007; Mansfield & Fourie, 2004; Mason & Leek, 2008; McPhillips & Merlo, 2008; Miles et al., 2006; Mitchell & Coles, 2003; Morris et al., 2005; Ojala & Tyrväinene, 2006; Osterwalder et al., 2005; Pauwels & Weiss, 2008; Perkmann & Spicer, 2010; Rappa, 2001; Richardson (2008); Seddon et al., 2004; Shafer et al., 2005; Stewart & Zhao, 2000; Susarla et al., 2009; Tankhiwale, 2009; Timmers, 1998; Van Der Vorst et al., 2002; Yip, 2004; Zott & Amit, 2007
Books and Book Chapters	Afuah, 2004; Afuah & Tucci, 2001; Amit & Zott, 2002; Applegate, 2000; Chesbrough, 2003; Hamel, 2000; Tapscott et al., 2000; Timmers, 1999; Weill & Vitale, 2001; Zott & Amit, 2009

Moreover, our careful reading of these publications suggested some important common ground among them, such as: 1) the business model as a new unit of analysis; 2) a holistic perspective on how firms do business; 3) an emphasis on activities; and 4) an acknowledgement of the importance of value creation. These themes led us to review adjacent literatures that might be relevant for the study of business models but do not directly refer to the concept—namely the literatures on new organizational forms, ecosystems, activity systems, and value chains and value networks. Drawing on these literatures will help put future research on business models on a more solid conceptual footing. Given space and scope considerations for this paper, however, we present our brief reviews of these adjacent literatures in the Appendix.

Business Model Literature

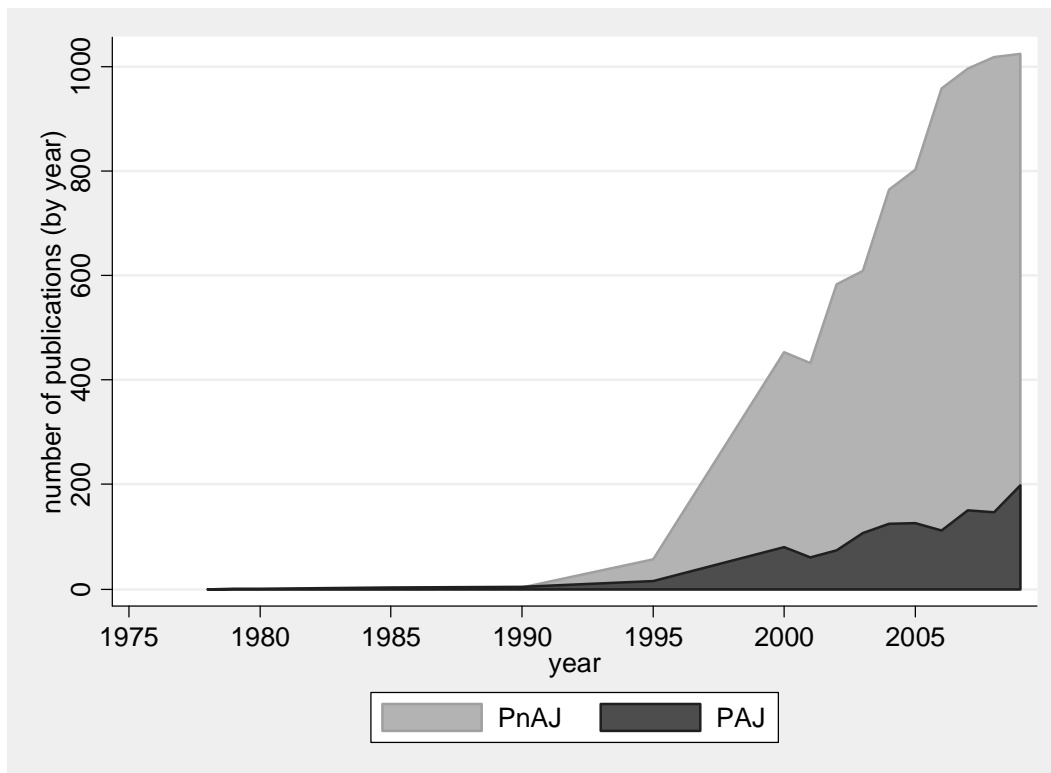
Emergence Of The Business Model Concept And Definitions

Emergence of the business model concept. Although business models have been integral to trading and economic behavior since pre-classical times (Teece, 2010), the business model concept became prevalent with the advent of the Internet in the mid 1990s, and it has been gathering momentum since then. From that time on, ideas revolving around the concept have resonated with scholars and business practitioners as documented by the number of publications, including articles, books, and book chapters in the business press and scientific journals. In a frame analysis of the use of the term “business model” in public talk, Ghaziani and Ventresca (2005) searched for the use of the term in general management articles from 1975 to 2000. Their search, conducted using the ABI/INFORM database, returned 1,729 publications which contained the term “business model.” Of these only 166 were published in the period 1975-1994; the remaining (1,563) belonged to the period 1995-2000, revealing a dramatic increase in the incidence of the term.

We performed a similar search using the EBSCOhost database, distinguishing between academic and journalistic outlets, and extending the analysis to 2009. We found that up to December 2009, the term “business model” has been included in 1,203 articles in academic journals. Non-academic articles follow a similar trend. From 1975 to December 2009 the term has been mentioned in 8,062 documents. As Figure 1 suggests, interest in the concept has virtually exploded in the 15-year period between 1995 and 2010, which is consistent with Ghaziani and Ventresca’s (2005) findings. The figure also indicates that academic research on business models seems to lag behind practice.

Figure 1

Business Model Articles in the Business/Management Field



This area graph shows trends in the number of business model articles. The label PnAJ identifies those articles Published in non-Academic Journals. The label PAJ identifies articles Published in Academic Journals.

Source: Business Source Complete EBSCOhost Database. Period: January 1975–December 2009.

Some scholars surmise that the emergence of the business model concept, and the extensive usage of the concept since the mid-1990s, may have been driven by the advent of the Internet (e.g., Amit & Zott, 2001), rapid growth in emerging markets and interest in “bottom-of-the-pyramid” issues (Prahalad & Hart, 2002; Seelos & Mair, 2007), as well as expanding industries and organizations dependent on post-industrial technologies (Perkman & Spicer, 2010).

Business model definitions. Surprisingly, the business model is often studied without explicitly defining the concept. Of the 103 business model publications reviewed, more than one-third (37%) do not define the concept at all, taking its meaning more or less for granted. Less than half (44%) explicitly define or conceptualize the business model, for example, by enumerating its main components. The remaining publications (19%) refer to the work of other scholars in defining the concept. Moreover, existing definitions only partially overlap, giving rise to a multitude of possible interpretations.

At a general level the business model has been referred to as a *statement* (Stewart & Zhao, 2000), a *description* (Applegate, 2000; Weill & Vitale, 2001), a *representation* (Morris, Schindehutte, & Allen, 2005; Shafer, Smith, & Linder, 2005), an *architecture* (Dubosson-Torbay, Osterwalder, & Pigneur, 2002; Timmers, 1998), a *conceptual tool or model* (Osterwalder, 2004; Osterwalder, Pigneur, & Tucci, 2005; Teece, 2010), a *structural template* (Amit & Zott, 2001), a

method (Afuah & Tucci, 2001), a *framework* (Afuah, 2004), a *pattern* (Brousseau & Penard, 2006), and as a *set* (Seelos & Mair, 2007).

This lack of definitional consistency and clarity represents a potential source of confusion, promoting dispersion rather than convergence of perspectives, and obstructing cumulative research progress on business models. Table 2 summarizes some of the most prevalent definitions suggested for the business model, and shows which papers have adopted these definitions.

Table 2

Selected Business Model Definitions

Author(s) Year	Definition	Papers Citing the Definition
Timmers, 1998	The business model is “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. 2).	Hedman & Kalling, 2003
Amit & Zott, 2001	The business model depicts “the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities” (p. 511).	Hedman & Kalling, 2003, Morris et al., 2005; Zott & Amit, 2007; Zott & Amit, 2008; Santos et al., 2009; Bock et al., 2010; Zott & Amit, 2010;
Chesbrough & Rosenbloom, 2002	The business model is “the heuristic logic that connects technical potential with the realization of economic value” (p. 529).	Chesbrough et al., 2006; Chesbrough, 2007a, 2007b; Teece, 2007, 2010
Magretta, 2002	Business models are “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?” (p. 4).	Seddon et al., 2004; Ojala & Tyrväinene, 2006; Demil & Lecoq, 2010
Morris et al., 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).[...] It has six fundamental components: Value proposition, customer, internal processes/competencies, external positioning, economic model, and personal/investor factors.	Calia et al., 2007
Johnson et al., 2008	Business models “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.	Johnson & Suskewicz, 2009
Casadesus-Masanell & Ricart, 2010	“A business model is [...] a <i>reflection</i> of the firm <i>realized</i> strategy” (p.195).	Baden-Fuller & Morgan, 2010
Teece, 2010	“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” (p.179).	Gambardella & McGahan, 2010

Our review further revealed that the business model has been mainly employed in trying to address or explain three phenomena: 1) e-business and the use of information technology in organizations; 2) strategic issues, such as value creation, competitive advantage, and firm performance; and 3) innovation and technology management. These could be viewed, respectively, as organizational phenomena relevant mostly for: 1) chief operating officers, 2) chief executive officers, and 3) chief technology officers. Although we do not wish to claim mutual exclusivity among these categories, we believe that they allow us to broadly classify the business model literature. Therefore, we use them as organizing principles for this review.

Business Models for e-Business

The research stream which, to date, has devoted the greatest attention to business models is *e-business*. E-business means “doing business electronically.” It comprises “Internet-based business,” “e-commerce,” “e-markets,” and “Internet-based business.” It considers business that is conducted exclusively over the Internet (e.g., Priceline.com) as business that exploits the potentiality of the Internet as a complement to a firm’s traditional operations, such as click-and-mortar-based businesses. Similarly to others (e.g., Mahadevan, 2000) we consider as e-businesses only those businesses that conduct commercial transactions with their business partners and buyers, thus excluding those that merely make use of web sites displaying information for products/services sold in the physical world.

The rapid growth and adoption of new technologies have facilitated organizational transformations (e.g., see Tapscott, Lowy, & Ticoll, 2000; Timmers, 1999). Recent advances in communication and information technologies, such as the emergence and swift expansion of the Internet and the rapid decline in computing and communication costs, have allowed the development of new ways to create and deliver value, which have offered scope for the creation of unconventional exchange mechanisms and transaction architectures (Amit & Zott, 2001), and accentuated the possibilities for the design of new boundary-spanning organizational forms (Daft & Lewin, 1993; Dunbar & Starbuck, 2006). Indeed, these developments have opened new horizons for the design of business models by enabling firms to change fundamentally the way they organize and engage in economic exchanges, both within and across firm and industry boundaries (Mendelson, 2000). According to Brynjolfsson and Hitt (2004), this includes the ways in which firms interact with suppliers as well as customers.

The Internet is a principal driver of the surge of the interest for business models and the consequent emergence of a literature which revolves around the topic (e.g., see Ghaziani & Ventresca, 2005; Magretta, 2002; Yip, 2004). Shafer et al. (2005) review 12 definitions in established publications during the period 1998-2000, finding that eight were related to e-business. Our literature review confirms this trend. In a total of 49 conceptual works, in which the business model is defined either directly or by means of its components, almost one-fourth of the works are related to e-business. Scholars have accentuated different aspects of new business models—from the ways companies exploit supply chain reconfiguration (e.g., value chain dis-intermediation or re-integration) to the ways revenues are collected (subscription cost and fees from the customer, advertising and sponsoring revenue from other firms, commission and transaction fees from provided services, etc.). Accordingly, research on e-business models can be organized around two complementary streams. The first stream aims to describe generic e-business models and provide typologies. The second stream focuses on the components of e-business models.

Description of generic e-business models and typologies. Several scholars have attempted to classify e-business models by describing types. Table 3 provides an overview of these efforts.

Table 3

e-Business Model Typologies

Author(s) e-business model type	Description
Timmers, 1998	
e-Shops	Stands for the Web marketing and promotion of a company or a shop and increasingly includes the possibility to order and to pay.
e-Procurement	Describes electronic tendering and procurement of goods and services.
e-Malls	Consists of a collection of e-shops, usually enhanced by a common umbrella, for example a well-known brand.
e-Auctions	Stands for the electronic implementation of the bidding mechanism also known from traditional auctions.
Virtual Communities	This model brings together virtual communities that contribute value in a basic environment provided by the virtual community operator. Membership fees and advertising generate revenues. It can also be found as an add-on to other marketing operations for customer feedback or loyalty building.
Collaboration Platforms	Companies of this group provide a set of tools and information environment for collaboration between enterprises.
Third-Party Marketplaces	A model that is suitable when a company wishes to leave the Web marketing to a third party (possibly as an add-on to their other channels). Third-party marketplaces offer a user interface to the supplier's product catalogue
Value Chain Integrators	Represents the companies that focus on integrating multiple steps of the value chain, with the potential to exploit the information flow between those steps as further added value.
Value Chain Service Providers	Stands for companies that specialize in a specific function for the value chain, such as electronic payment or logistics.
Information Brokerage	Embraces a whole range of new information services that are emerging to add value to the huge amounts of data available on the open networks or coming from integrated business operations.
Trust and Other Third Parties	Stands for trust services, such as certification authorities and electronic notaries and other trusted third parties.
Tapscott, Lowy, & Ticoll, 2000	
Agora	Applies to markets where buyers and sellers meet to freely negotiate and assign value to goods. An Agora facilitates exchange between buyers and sellers, who jointly "discover" a price. Because sellers may offer a wide and often unpredictable variety or quantity of goods, value integration is low.
Aggregation	In Aggregation b-webs there is a leader that takes responsibility for selecting products and services, targeting market segments, setting prices, and ensuring fulfillment. This leader typically sets prices in advance and offers a diverse variety of products and services, with zero to limited value integration.

Table 3 (continued)

Author(s) e-business model type	Description
Value Chain	In a Value Chain, the so-called context provider structures and directs a b-web network to produce a highly integrated value proposition. The seller has the final say in pricing.
Alliance	An Alliance strives for high value integration without hierarchical control. Its participants design goods or services, create knowledge, or simply produce dynamic, shared experiences. Alliances typically depend on rules and standards that govern interaction, acceptable participant behavior, and the determination of value.
Distributive Network	Distributive Networks are b-webs that keep the economy alive and mobile. They play a vital role in ensuring the healthy balance of the systems that they support. Distributive Networks service the other types of b-webs by allocating and delivering goods.
Applegate, 2001	
Focused Distributors	Provide products and services within specific industry or market niche. There are five types of focused distributors business models—retailers, marketplaces, aggregators, infomediaries, and exchanges.
Portals	Not defined. They include horizontal portals, vertical portals, and affinity portals. These are differentiated on the basis of the gateway access, affinity group focus, revenues source, and costs structure.
Infrastructure Distributors	Enable technology buyers and sellers to perform business transactions. There are three categories of focused distributors: infrastructure retailers, infrastructure marketplace, and infrastructure exchange, which are differentiated on the basis of control inventory, online selling presence, online pricing, revenues source, and costs structure.
Infrastructure Portals	Enables consumers and businesses to access online services and information. They are further classified into horizontal infrastructure portals (Internet service providers, network service providers and web hosting) and vertical infrastructure portals (producers and distributor application service providers, or ASPs).
Infrastructure Producers	Design, build, market, and sell technology hardware, software, solutions, and services. Four types of infrastructure producers are: equipment component manufacturers, software firms, customer software and integration, infrastructure service firms.
Rappa, 2001	
Brokerage Model	They bring buyers and sellers together and facilitate transactions. Usually, a broker charges a fee or commission for each transaction it enables. Subcategories are: Marketplace Exchange, Business Trading Community, Buy/Sell Fulfillment, Demand Collection System, Auction Broker, Transaction Broker, Bounty Broker, Distributor, Search Agent, Virtual Mall.
Advertising Model	The broadcaster, in this case a web site, provides content (usually for free) and services (like email, chat, forums) mixed with advertising messages in the form of banner ads. The banner ads may be the major or sole source of revenue for the broadcaster. The broadcaster may be a content creator or a distributor of content created elsewhere. Subcategories are: Portal, Personalized Portal, Niche Portal, Classifieds, Registered Users, Query-based Paid Placement, Contextual Advertising.

Table 3 (continued)

Author(s) e-business model type	Description
Merchant Model	Some firms function as infomediaries (information intermediaries) by either collecting data about consumers or collecting data about producers and their products and then selling it to firms which in turn can mine it for important patterns and other useful information to better serve their clients. Examples are: Advertising Networks, Audience Measurement Services, Incentive Marketing, Metamediary. Wholesalers and retailers of goods and services sold over the Internet. These include: Virtual Merchant, Catalog Merchant, Click and Mortar, Bit Vendor
Manufacturer Model	Manufacturers can reach buyers directly through the Internet and thereby compress the distribution channel.
Affiliate Model	The affiliate model provides purchase opportunities wherever people may be surfing. It does this by offering financial incentives (in the form of a percentage of revenue) to affiliated partner sites. The affiliates provide purchase-point click-through to the merchant via their web sites.
Community Model	The community model is based on user loyalty. Users have a high investment in time and emotion in the site. In some cases, users are regular contributors of content and/or money. Examples are Voluntary Contributor Models and Knowledge Networks.
SubscriptionModel	Users are charged a periodic—daily, monthly or annual—fee to subscribe to a service. Examples are Content Services, Person-to-Person Networking Services, Trust Services, Internet Service Providers.
Utility Model	The utility model is based on metering usage, or a pay-as-you-go approach. Unlike subscriber services, metered services are based on actual usage rates.
Weill & Vitale, 2001	
Content Providers	Provides content (information, digital products, and services) via intermediaries.
Direct to Customer	Provides goods or services directly to the customer, often bypassing traditional channel members.
Full-Service Provider	Provides a full range of services in one domain (e.g., financial, health, industrial chemicals) directly via allies, attempting to own the primary consumer relationship.
Intermediary	Brings together buyers and sellers by concentrating information.
Shared Infrastructure	Brings together multiple competitors to cooperate by sharing common IT infrastructure.
Value Net Integrators	Coordinate activities across the value net by gathering, synthesizing, and distributing information.
VirtualC community	Creates and facilitates an online community of people with a common interest, enabling interaction and service provision.
Whole-of-Enterprise/Government	Provides a firm-wide single point of contact, consolidating all services provided by a large multi-unit organization.

While in general scholars have described specific e-business initiatives, Timmers (1998) distinguishes among 11 generic e-business models, from e-shops and e-procurement to trust and other third-party services. Tapscott et al. (2000) propose a network- and value-centered taxonomy that distinguishes between five types of value networks they call b-webs (business webs), which differ in their degree of economic control and value integration. Rappa (2001) classifies companies according to the nature of their value proposition and their mode of generating revenues. Weill and Vitale (2001) describe eight so-called *atomic* business models, each of which describes a different way of conducting business electronically. E-business initiatives can be represented by pure atomic business models or by combining them. And Applegate (2001) introduces the following six business models: focused distributors, portals, producers, infrastructure distributors, infrastructure portals and infrastructure producers. What is common to all these approaches is an attempt to describe and organize around typologies and taxonomies the plethora of new perceived business archetypes, enabled mainly by Internet technologies.

While Timmers (1998) and Mahadevan (2000) propose two-dimensional classification schemes, Dubosson-Torbay et al. (2002) propose a multidimensional one. They identify the following principal dimensions for classifying business models: user's role (how the client or prospect is considered by the company), interaction pattern (one or many people/companies providing to one or many people/companies), nature of the offering (information, services, or products), pricing system (fee system, price list, or dynamic price mechanism), level of customization (mass vs. customized content), and economic control (from self-organizing to hierarchical).

Components of e-business models. Besides providing typologies that enlist and describe various generic e-business models, students of e-business have also attempted to distinguish first- and second-order themes among the components of e-business models. Table 4 presents a summary of these efforts.

Table 4

Components of e-Business Models

Author(s) - Year	First Order Concept(s)	Second Order Concept(s)
Mahadevan, 2000	<ul style="list-style-type: none"> • Value stream for partners and buyers network (identifies the value proposition for the buyer, sellers, and market makers and portals in an Internet context) • Revenue stream (a plan for assuring revenue generation for the business) • Logistical stream (addresses various issues related to the design of the supply chain for the business) 	

Author(s)- Year	First Order Concept(s)	Second Order Concept(s)
Stewart, & Zhao, 2000	<ul style="list-style-type: none"> • Profit stream (includes the revenue stream and cost structure) 	<ul style="list-style-type: none"> • Customer selection • Value capture • Differentiation and strategic control • Scope
Afuah & Tucci, 2001	<ul style="list-style-type: none"> • A system made of components, linkages between components, and dynamics • Customer value (the extent to which the firm's offer is distinct or has a lower cost than its competitors') • Revenue sources (Where do the dollars comes from? Who pays what value and when? What are the margins in each market and what drives them? What drives value in each source?) 	<ul style="list-style-type: none"> • Scope • Price • Connected activities • Implementation • Capabilities • Sustainability
Alt & Zimmerman, 2001	<ul style="list-style-type: none"> • Mission • Structure • Processes • Revenues • Legal issues • Technology 	<p>Mission:</p> <ul style="list-style-type: none"> • Goals; Vision; Value proposition <p>Structure:</p> <ul style="list-style-type: none"> • Actors and governance; Focus <p>Processes:</p> <ul style="list-style-type: none"> • Customer orientation; Coordination mechanism <p>Revenues:</p> <ul style="list-style-type: none"> • Source of revenues; Business logic
Applegate, 2001	<ul style="list-style-type: none"> • Concept (describes an opportunity) • Capabilities (define the resources needed to turn concept into reality) • Value (measures the return to investors and other stakeholders) 	<p>Concept:</p> <ul style="list-style-type: none"> • Market opportunity; Product and service offered; Competitive dynamic; Strategy for capturing a dominant position; Strategic options for evolving the business <p>Capabilities:</p> <ul style="list-style-type: none"> • People and partners; Organization and culture; Operating model; Marketing sales model; Management model; Business development model; Infrastructure model <p>Value:</p> <ul style="list-style-type: none"> • Benefits returned to stakeholders; Benefits returned to the firm; Market share and performance; Brand and reputation; Financial performance
Rappa, 2001	<ul style="list-style-type: none"> • Sustainability • Revenue stream • Cost structure • Value chain positioning 	
Osterwalder, 2004	<ul style="list-style-type: none"> • Value proposition • Customer segments • Partners' network • Delivery channel • Revenue stream 	<ul style="list-style-type: none"> • Relationship • Value configuration • Capability • Cost structure
Bonaccorsi et al., 2006	<ul style="list-style-type: none"> • Products and services delivery • Customers • Costs structure • Income 	<ul style="list-style-type: none"> • Network (structural aspects) • Network externalities
Brousseau & Penard, 2006	<ul style="list-style-type: none"> • Costs • Revenue stream • Sustainable income generation • Goods and services production and exchanges 	<ul style="list-style-type: none"> • Pricing strategies • Relationships (demand and supply) • Network externalities

Business model representations. Several authors have attempted to represent business models through a mixture of informal textual, verbal, and ad hoc graphical representations (e.g., Amit & Zott, 2002; Casadesus-Masanell & Ricart, 2010). Weill and Vitale (2001) have introduced a set of simple schematics intended to provide tools for the analysis and design of e-business initiatives. Their “e-business model schematics” are based on three classes of objects: participants (firm of interest, customers, suppliers, and allies), relationships, and flows (money, information, product, or service flows). In a related vein, Tapscott et al. (2000) suggest a value map for depicting how a business web operates. The value map depicts all key classes of participants (partners, customers, suppliers) and value exchanges between them (tangible and intangible benefits and knowledge).

Other scholars have attempted to provide business model ontologies. A business model ontology (BMO) (Osterwalder, 2004) is a conceptualization and formalization of the essential components of a business model into elements, relationships, vocabulary, and semantics. A BMO is structured into several levels of decomposition with increasing depth and complexity. Tankhiwale (2009) has applied a BMO in a longitudinal case study in order to trace the evolution of a telecommunication firm’s business model and its impact on the firm’s business process architecture. Gordijn and Akkermans (2001) have proposed a conceptual modelling approach, what they call the “e3-value ontology,” designed to help define how economic value is created and exchanged within a network of actors. This modelling technique takes a value viewpoint, unlike other traditional modelling tools that take either a business process viewpoint (typical of operational management) or a system architecture viewpoint (typical of information systems literature). The proposed ontology borrows concepts from business literature such as actors, value exchanges, value activities, and value objects, and uses these notions to model networked constellations of enterprises and end-consumers who create, distribute, and consume things of economic value.

Strategic marketing in e-business. Within the domain of e-business, some scholars have focused on the changing nature of customer-firm relationships. A special concern has been the monetization of e-business. Pauwels and Weiss (2008) examine “fee and free” business models for providing digital content on the Internet. In the “free” models firms offer all the content for free, while in the “fee” model they charge for at least part of it. Their work focuses on the firm performance implications of a shift from the “free” to the “fee” model, and empirically analyzes the role that marketing actions can play in accommodating this shift.

In this regard, scholars have also examined the degree of Internet advertising effectiveness which affects advertising-based e-business models and their ability to monetize Internet applications. Clemons (2009) has provided an overview of business models for monetizing Internet applications. He argues that while the majority of attempts to monetize Internet applications targeted at individuals have focused on natural extensions of traditional media or traditional retailing, there are several potential online business models that are not based on advertising and that, given declining advertising effectiveness, might constitute a better choice. The most powerful revenue source on the Internet might be paying for key words (e.g., Google). Community content recommendations, social search, and contextual mobile advertising all seem to offer possibilities for providing value to users.

Scholars have also noted the phenomenon of *media convergence* (e.g., see Fidler, 1997), the convergence of different media channels on one digital platform, which has resulted in structural change in the media industry. McPhillips and Merlo (2008) have referred to it by introducing the term “media business model.” Structural change in the media industry has also

been driven by the advent of new communication channels, such as mobile e-services (m-services). Eriksson, Kalling, Åkesson, and Fredberg (2008) have considered e-newspapers published for mobile reading devices equipped with e-paper displays, and analyzed the implication of future m-service innovation on the development of new business models. Huizingh (2002) has studied how to help managers design such e-business models. While he employs the term “e-business strategies,” his focus is on the generation of superior customer value. He proposes three management models, which are rooted in marketing literature and which could guide managers in how best to exploit the commercial potential of the Internet.

Summary of literature on business models in e-business. Scholars focusing on e-business as an area for research on business models have been mainly interested in understanding the “gestalt” of firms engaging in (new) Internet-based ways of doing business, and the (new) roles that these firms play in their respective ecosystems. For that purpose, scholars have 1) defined and represented generic (e-)business models, and/or 2) developed typologies and taxonomies; they have been less concerned with causal explanation or empirical testing. Their mostly descriptive contributions highlight, to varying degrees, the notion of value (e.g., value stream, customer value, value proposition), monetary and financial aspects (e.g., revenue streams, cost structures) and aspects related to the architecture of the network between the firm and its exchange partners (e.g., delivery channels, network relationships, logistical streams, infrastructure). Each of these components may constitute part of a generic business model, and it could be a source of differentiation among business model types. But none of these components, in isolation, is sufficient for capturing the business model as a whole.

Thus, in this literature stream the business model is *not* a value proposition, a revenue model, or a network of relationships by itself; it is all of these elements together. Accordingly (and not surprisingly), none of the papers in this literature stream analyzes the relationship between any business model component (e.g., revenue mechanism, configuration of control activities, pricing system, or interaction pattern) and other constructs, a fact that renders the delineation of potential antecedents or consequences of the business model difficult.

Business Models and Strategy: Value Creation and Value Capture Through Activities

The business model has received increasing attention from scholars and business strategists interested in explaining firms’ value creation, performance, and competitive advantage.

Value creation in networked markets. The digital economy has provided firms with the potential to experiment with novel forms of value creation mechanisms, which are networked in the sense that value is created in concert by a firm and a plethora of partners, for multiple users. This redefinition of value has attracted the attention of management scholars, who have employed the concept of business model in their attempt to explain value creation in networked markets (e.g., Zott & Amit, 2009). However, in explaining value creation, the concept of business model has not only been used in the context of e-business. Seelos and Mair (2007), for example, have studied value creation mechanisms in the context of deep poverty. They conceptualize a business model as a “set of capabilities that is configured to enable value creation consistent with either economic or social strategic objectives” (Seelos & Mair: 53). Thus value creation can refer to different forms of value (in this case, social vs. economic).

Value creation mechanisms often go beyond the value that can be realized through Schumpeterian innovation, the (re-)configuration of the value chain (Porter, 1985), the

formation of strategic networks among firms, or the exploitation of firms' specific core competencies. In e-business, as Amit and Zott (2001) observe, the locus of value creation, and thus the appropriate unit of analysis, spans firms' and industries' boundaries. The authors conclude that prior frameworks used in isolation cannot sufficiently address questions about total value creation. Based on a sample of 150 firms, they propose four potential sources of value creation: 1) Novelty (Schumpeterian types of innovation in the design of the business model); 2) Lock-In (business model features which incentivize the focal firm's customers and strategic partners to engage in repeat transactions and prevent them from migrating); 3) Complementarities (business model features that facilitate bundling, e.g., combining complementary products, services, or activities); and 4) Efficiency (business model features that foster transaction efficiency). These NICE value drivers can be mutually reinforcing, that is, the presence of each value driver can enhance the effectiveness of any other value driver.

Value can also be created through revolutionary business models. According to Hamel (2000), to thrive in the "age of revolution," companies must adopt a new, radical innovation agenda, and develop new business models. One of the primary characteristics of new business models is that both value creation and value capture occur in a value network, which can include suppliers, partners, distribution channels, and coalitions that extend the company's resources.

Business model and firm performance. While some literature on the business model tends to concentrate on the firm's activities with its network of partners, increasingly scholars are acknowledging that firms do not execute their business model in a competitive vacuum (Hamel, 2000), and that firms can compete through their business models (Casadesus-Masanell & Ricart, 2010). The business model, then, represents a potential source of competitive advantage. The novelty presented by new effective models can result in superior value creation (Morris et al., 2005), or even change the economics of an industry (Magretta, 2002). The business model may replace the old way of doing things and become the standard for the next generation of entrepreneurs to beat (Magretta).

Business models can play a central role in explaining firm performance. Afuah and Tucci (2001) propose the business model as a unifying construct for explaining competitive advantage and firm performance and define it as "the method by which a firm builds and uses its resources to offer its customer better value and to make money in doing so" (2001:3). Afuah (2004) focuses on firms' profitability and introduces a strategic framework in which the business model is conceptualized by means of a set of components that corresponds to the determinants of firm profitability. The framework includes the following components: resources (including competences and capabilities), industry factors, activities, and position. By envisioning the business model through the lens of the factors affecting the firm's profitability, he implicitly establishes a causal relationship between the business model and firm performance.

While the work of Afuah (2004) and Afuah and Tucci (2001) is conceptual, some authors have conducted empirical analyses. Zott and Amit (2007) have analyzed the performance implications of business model design in entrepreneurial firms. They refer to the business model design as the design of an organization's set of boundary-spanning transactions. In their view, the essence of the association between business model design and firm performance can be analyzed by looking at two distinct effects: the total value creation potential of the business model design and the firm's ability to appropriate that value. They identify two design themes around which the business model can be orchestrated: efficiency and novelty. In their empirical work, Zott and Amit see the business model as the independent variable, and link it to firm performance, moderated by the environment.

In another empirical study on firm performance, the business model has been employed as a contingent variable. Palzelt, Knyphausen-Aufseß, and Nikol (2008) introduce the business model as a variable moderating the effect of top management team composition and organizational performance. They analyze a set of biotechnology ventures in the German industry and focus on two types of business models which biotechnology firms might adopt: platform and therapeutics business models. They show that founder-based, firm-specific experience of management team members can have either a positive or a negative effect on the firm's performance, depending on the business model adopted. Similarly, Zott and Amit (2008) acknowledge the possible contingent effect of the business model in mediating between product market strategy and firm performance. They root their study in contingency theory and ask: how do the firm's business model and product market strategy interact to impact the firm performance? They see the business model as a structural construct that captures the firm's architecture of transactions with external parties, namely customers, partners, and vendors. In their work they develop a formal model and test it empirically, finding that: 1) business models that emphasize novelty and are coupled with either differentiation or cost leadership can have a positive impact on the firm's performance, and 2) novelty-centered business models together with early entry into a market have a positive effect on performance.

Other studies on the performance implications of business model design come from business practitioners and consultants. Linder and Cantrell (2001), from the Accenture Institute for Strategic Change, have published a report that comments on the results of interviews with 70 companies' executives and analysts, as well as extensive secondary research on the role of the business model in firms' success. According to their research, successful companies choose an effective business model and execute it superbly, or they relentlessly alter their business model as competition threatens.

Consultants at IBM Global Business Services, interviewing 765 corporate and public sector leaders world-wide, found that firms that were financial outperformers put twice as much emphasis on business model innovation as underperformers. Going a step further, Giesen and colleagues (Giesen, Berman, Bell, & Blitz, 2007), also from IBM, looked at the relationship between business model innovation and firm performance. They identify three types of business model innovation, namely *industry models* (innovations in industry supply chain), *revenue models* (innovations in how companies generate value), and *enterprise models* (innovations in the role the structure of an enterprise plays in new or existing value chains). They report two key findings: 1) each type of business model innovation can generate success, and 2) innovation in enterprise models that focuses on external collaboration and partnerships is particularly effective in older companies as compared to younger ones.

Strategy and the business model. The business model extends central ideas in business strategy and its associated theoretical traditions. Much of the early discussion about the relationship between strategy and the business model has revolved around the question of the extent to which they are different concepts. Our review reveals that consensus is growing that the business model and product-market strategy are indeed conceptually different. Scholars contend, for example, that the business model can be a source of competitive advantage that is distinct from the firm's product-market position (Christensen, 2001). Firms that address the same customer need and pursue similar product-market strategies can do so with very different business models; business model design and product-market strategy are complements, not substitutes (Zott & Amit, 2008).

Two main differentiating factors seem to have captured the attention of scholars. The first is the emphasis of strategy on competition, while the business model focuses more on cooperation, partnerships, and joint value creation (Magretta, 2002). In general, the business strategy of a firm is more concerned with value capture and competitive advantage than with value creation, whereas business models combine a concern for sustainable value creation (in terms of total value created) with value capture and appropriation (Mäkinen & Seppänen, 2007). The total value created is the value created for all business model stakeholders (focal firm, customers, suppliers, and other exchange partners). It is the upper limit for the value that can be captured by the focal firm (Brandenburger & Stuart, 1996).

Product-market strategy differs from the business model in its focus on the firm positioning *vis a vis* its rivals (Zott & Amit, 2008) and its emphasis on how to capture value and sustain it (Chesbrough & Rosenbloom, 2002). It defines how a business organization can do better than its rivals by embracing principles of differentiation (Magretta, 2002). The *prima facie* role of product-market strategy is the pursuit of competitive advantage (Mansfield & Fourie, 2004).

The second factor of interest to management scholars is the focus of the business model on the value proposition and a generalized emphasis on the role of customer, which is less pronounced in the strategy literature. Our review reveals a strong consensus that the business model revolves around the general concept of (customer-focused) value creation (Chesbrough & Rosenbloom, 2002; Mansfield & Fourie, 2004). Seen from the lens of the value that it creates, it is a customer-centric construct (Mansfield & Fourie), but at the same time it highlights the networked architecture of the value creation pattern (Amit & Zott, 2001). It centers on the pattern of the firm's economic exchanges with external parties in its addressable factor and product markets (Zott & Amit, 2008), and it outlines the essential details of a firm's value proposition for its various stakeholders and the activity system the firm uses to create and deliver value to its customers (Seddon, Lewis, Freeman, & Shanks, 2004).

Despite the highlighted conceptual differences between business models and particular aspects of firm strategy, recently scholars have emphasized that the business model can play an important role for strategy. According to Richardson (2008), the business model explains how the activities of the firm work together to execute its strategy, thus bridging strategy formulation and implementation. Shafer et al. (2005) use the metaphor of the construction of a custom home. In this illustration the architect consults with the future homeowners to understand how they envision the future home and creates the design to fulfill that vision. According to Shafer and colleagues, this design corresponds to the strategy. However, in the next step the architect prepares a detailed floor plan based on the choices made during the design process. It is this step which corresponds to the business model design. A similar position is held by Casadesus-Masanell and Ricart (2010), who view the business model as a reflection of a firm's realized strategy and by Teece who sees the business model as reflecting management "hypothesis about what customers want, and how an enterprise can best meet those needs, and get paid for doing so" (2007: 1329).

Business model and strategy can also differ in terms of the assumptions about the state of knowledge held by the firm and its stakeholders. Chesbrough & Rosenbloom (2002) propose that business models explicitly assume limited or distorted information and knowledge, whereas strategies are built on analysis and refinements in knowledge, thereby assuming the existence of reliable and plentiful information to be transformed into knowledge.

Summary of literature on business models in the strategy field. Within the strategy literature, research on business models has revolved mainly around three aspects: 1) the networked nature of value creation, 2) the relationship between business models and firm performance, and 3) the distinction between the business model and other strategy concepts. Since strategy scholars are generally interested in a firm's activities (as these help explain, for example, how a firm distinguishes itself from its competitors), it is not surprising that many of the business model conceptualizations proposed in this literature stream center on (or at least include) the notion of activities or activity systems.

In the absence of a commonly accepted definition, scholars' attempts at conceptual refinement have helped clarify at least what a business model is *not*. First, the business model does not involve a linear mechanism for value creation from suppliers to the firm to its customers. Value creation through business models involves a more complex, interconnected set of exchange relationships and activities among multiple players. Second, the business model is not the same as product-market strategy (i.e., it does not refer to firm positioning in product markets based on differentiation or cost leadership in certain activities) nor corporate strategy (i.e., it does not describe or prescribe the areas of business in which a firm becomes active). Third, the business model cannot be reduced to issues that concern the internal organization of firms (e.g., control mechanisms, incentive systems) (Casadesus-Masanell & Ricart, 2010); activity systems, even though centered on a focal firm, typically span firm boundaries. However, the business model can be a source of competitive advantage, as it emphasizes the importance of activities centered on customer needs, a perspective that is relatively rare within the strategy literature.

Business Models, Innovation, and Technology Management

The business model concept has also been addressed in the domains of innovation and technology management. Two complementary views seem to dominate the research. The first is that companies commercialize innovative ideas and technologies through their business models. The second is that the business model represents a new dimension of innovation, which spans the traditional modes of process, product, and organizational innovation, and involves new forms of cooperation and collaboration.

One important role of the business model could consist of capturing value from early stage technology by unlocking the value potential embedded in technologies and converting it into market outcomes. Chesbrough and Rosenbloom (2002) detail an extensive case study, in which they show how the Xerox Corporation grew by employing an effective business model to commercialize a technology rejected by other leading companies. Their study also focuses on a selected sample of technology spin-offs which emerged from Xerox PARC, the company's research center at Palo Alto. The study compares successful and unsuccessful technology spin-offs with comparable market potential. They find that in successful ventures the search and learning for an effective business model was significantly higher than in failed ventures. These authors view the business model as a conceptual tool that connects product development and customer needs.

In a related vein, Björkdahl (2009) employs the notion of business model for studying technology diversification and cross fertilization efforts. Some companies diversify their technological portfolios by introducing new technologies into existing products, exploiting the opportunities arising from such "cross fertilizing" technologies. Björkdahl explores the role of the business model in capturing value from technology cross fertilization. His central argument

is that the integration of new technologies into the technology base of a product (i.e., technology cross fertilization) can open up new subspaces in the existing technical performance and functionality space, which in turn requires a new business model if the economic value potential of the new technology is to be captured. He roots his conceptualization of the business model in the work of Chesbrough and Rosenbloom (2002) and defines it as the logic and the activities that create and appropriate economic value. In two of the three cases he examines, the firms were able to create economic value by substantially changing their business models; the third company, which did not change its business model, failed to do so.

Business models can not only entail consequences for technological innovations; they can also be shaped by them. Calia, Guerrini, and Moura (2007) show how technological innovation networks can provide the resources necessary for business model reconfiguration. They present the results of a case study of a technology company in the aluminum industry, finding that the impact of technological innovation, when it is the result of a collaborative effort in a network of technological partners, might not be limited to the new product's technological features, but can result in changes in the company's operational and commercial activities, which ultimately correspond to a change of the business model.

While these works have looked at the roles of business models in commercializing technologies at the level of the individual firm, more recently Johnson and Suskewicz (2009) have referred to the business model at the level of an entire industry. In their article, which discusses the transition from a fossil fuel economy to a clean tech economy, it is argued that in such a large infrastructural change the key is to shift the focus from developing individual technologies to creating whole new systems. The business model is introduced as part of a framework for thinking about systemic change, which also includes enabling technology, a careful market adoption strategy, and a favorable government policy. Their central argument for employing the business model is consistent with the main thesis in the technology management literature, i.e., new technological paradigms require appropriate business models in order to both create value for customers and to capture part of the value.

Specifically, while technological innovation is important, it might not suffice to guarantee firms' survival for two reasons. First, technology *per se* has no inherent value (Chesbrough, 2007a; 2007b). Business models matter even for general purpose technologies, in which upstream firms license general purpose technologies (i.e., "half polished" applications sold at intermediate development stages) to downstream firms rather than developing final product themselves (Gambardella & McGahan, 2010). Second, competition on technology alone is becoming increasingly difficult. The rising costs of R&D together with increasingly short product life cycles means that even great technologies can no longer be relied upon to earn a satisfactory profit before they become commoditized. A better business model will beat a better idea or technology (Chesbrough, 2007a).

Business model innovation. Besides adopting business models to facilitate technological innovation and the management of technology, firms can also view the business model as a source of innovation in and of itself. To become business model innovators companies need to create processes for making innovation and improvements (Mitchell & Coles, 2003). Chesbrough (2003) introduced the notion of *open innovation*. Open innovation is a mode of innovation in which companies, rather than relying on internal ideas to advance business, look outside the firm boundaries in order to leverage internal and external sources of ideas. Open innovation relies on outsiders as a source of ideas and as the means to commercialize them. It can lead to new business models (Chesbrough, 2003, 2010). For example, from the point of view of the

focal firm, external innovators can be organized as a collaborative community or as a market (Boudreau & Lakhani, 2009). These are fundamentally different modes of organization which in turn imply a different business model configuration; in the former (community), members are often willing to collaborate and work for free, while in the latter (market) innovators develop multiple competing varieties of complementary goods, components, or services, with little cooperation among them.

A concept similar to open innovation is *collaborative entrepreneurship*, which is defined as “the creation of something of economic value based on new jointly generated ideas that emerge from the sharing of information and knowledge” (Miles, Miles, & Snow, 2006: 2). Though the authors do not explicitly define the business model, they employ it in referring to the organizational process and the external collaboration efforts that articulate this type of network play. Collaborative entrepreneurship thus involves business model innovation. However, as the authors point out, collaboration is much more complex and demanding than cooperation, where desired outcomes are relatively clear and the distribution of future returns can be negotiated. Collaboration often involves unpredictable outcomes and relies on trust and a joint commitment to values of honesty and equitable treatment.

In an extension of his earlier work, Chesbrough (2007b) has focused on networks in which players partner and collaborate in the co-creation of the business model, and introduced the notion of *open business models*. According to the author, companies open their business model by actively searching for and exploiting outside ideas and by allowing unused internal technologies to flow to the outside, where other firms can unlock their latent economic potential. His central argument is that the value of in-house technologies might be not evident to proprietary companies.

Open business models designed for sharing or licensing technologies, apart from being a source of innovation themselves, may prompt additional business model innovation in complementary markets as a consequence of the reconfiguration of downstream industry structure as well as capabilities (Gambardella & McGahan, 2010). The business model itself can become part of intellectual property (Rivette & Kline, 2000; Rappa, 2001).

Business model innovation and renewal in incumbent firms. There is an increasing consensus that business model innovation is key to firm performance. As a result, an important number of scholars focus on issues related to business model renewal and innovation in incumbent firms (e.g., Chesbrough, 2007a; Demil & Lecoq 2010; IBM Global Business Services, 2006; Ireland, Hitt, Camp, & Sexton 2001; Johnson, Christensen, & Kagermann, 2008; Sosna, Treviño-Rodríguez & Velamuri, 2010). Considerations on issues related to business model innovation in incumbent firms were already present in Chesbrough and Rosenbloom’s study (2002) of the Xerox Corporation and its research center at Palo Alto. According to the authors, the business model as an *heuristic logic* might act as a mental map, which mediates the way business ideas are perceived by filtering information as valuable or not. This filtering process within a successful established firm is likely to preclude the identification of models that differ substantially from the firm’s current business model. In its cognitive dimension the business model concept is similar to Prahalad and Bettis’s (1986) notion of a *dominant logic*. The dominant logic is a prevailing wisdom about how the world works and how the firm competes in this world. The dominant logic can act as a filter on information, preventing managers from seeing opportunities (removing certain possibilities from serious consideration) when they fall outside of the prevailing logic, driving firms into the *dominant logic trap* (Chesbrough, 2003).

Bouchikhi and Kimberly (2003) have referred to a similar phenomenon as the *identity trap*. In their view an organization's identity can become a trap when it so constrains strategic options that the organization cannot cope effectively with a changing environment. Attempts to change that are in conflict with this core identity are often doomed to failure. Recently Chesbrough (2010) has analyzed in more detail barriers to business model innovation in existing firms, suggesting two types of barriers. The first type of barrier refers to the underlying configuration of assets. Barriers exist in terms of conflicts with existing assets and business models (i.e., inertia emerges because of the complexity required for the re-configuration of assets and operational processes). The second type of barrier is cognitive. It is manifested by the inability of managers who have been operating within the confines of a certain business model to understand the value potential in technologies and ideas which do not fit in the current business model.

How can managers overcome these barriers? They could, for example, construct maps of business models, in order to clarify the process underlying them; the maps then become a source of experiments to consider alternatives (Chesbrough, 2010). In a related vein, some scholars contend that the business model takes shape through a discovery-driven process of experimentation (McGrath, 2010). Hayashi (2009) notes that many companies have had original business models that did not work, and further suggests that companies need to experiment in order to "find" the right business model. They need a culture that encourages employees to investigate numerous "what if" questions.

The process of discovering new business models might differ for different organizations in different competitive landscapes. Sheehan and Stabell (2007) argue that knowledge-intensive organizations might require special tools to discern innovative growth opportunities. They argue that knowledge-intensive organizations can be classified into three groups. Diagnosis shops create value by defining problems and creating remedies (e.g., law and audit firms). Search shops create value by searching for and defining opportunities (e.g., pharmaceutical and biotech discovery units). Design shops create value by formulating innovative concepts of production prototypes (e.g., architecture firms). The authors propose a three-step process of analysis to help managers in knowledge-intensive organizations improve their business model.

A specific leadership agenda might be required for business model renewal. In order to overcome the rigidity that accompanies established business models, Doz and Kosonen (2010) propose that companies be made more agile, which can be achieved by developing three meta-capabilities: strategic sensitivity, leadership unity, and resource flexibility. They point to the importance of the top management team (TMT) to achieve collective commitment for taking the risks necessary to venture into new business models and abandon old ones. In similar vein, Smith, Binns and Tushman highlight how the effective management of complex business models "depend on leadership that can make dynamic decisions, build commitment to both overarching visions and agenda specific goals, learn actively at multiple levels and engage conflict" (2010: 448). Santos, Spector, and Van Der Heyden (2009) also emphasize the importance of the behavioral aspects involved in business model innovation (BMI). To achieve BMI, they suggest that mutual engagement and organizational justice are needed. BMI, they argue, should not only consider the structural aspects of the formal organization (typically activity sets), but should also focus on the relational dynamics at the level of informal organization.

Some scholars have attempted to develop typologies for BMI. Giesen et al. (2007) have proposed that BMI can be classified into three groups: 1) industry model innovation, which

consists of innovating the industry value chain by moving into new industries, redefining existing industries, or creating entirely new ones; 2) revenue model innovation, which represents innovation in the way revenues are generated, for example through re-configuration of the product-service value mix or new pricing models; and 3) enterprise model innovation, changing the role a firm plays in the value chain, which can involve changes in the extended enterprise and networks with employees, suppliers, customers, and others, including capability/asset configurations.

Summary of literature on business models and technology management. Within the technology and innovation management field, the business model is mainly seen as a mechanism that connects a firm's (innovative) technology to customer needs, and/or to other firm resources (e.g., technologies). The business model is conceptually placed between firm's input resources and market outcomes, and "embodies nothing less than the organizational and financial 'architecture' of the business" (Teece, 2010: 173). The business model, according to this more functionalist, firm-centric perspective, complements technology, open innovation, and collaborative entrepreneurship, but these (i.e., technology, open innovation, or collaborative entrepreneurship) are not necessarily an essential part of it. Neither are input resources nor competition in output markets part of the business model concept. The "core logic" of a business model, instead, revolves around a firm's revenues and costs, its value proposition to the customer, and the mechanisms to capture value. These issues have traditionally been neglected in economic theory, in organizational and strategic studies, and in marketing science (Teece, 2010). Thus conceived, the business model can be a vehicle *for* innovation as well as a source *of* innovation.

Discussion

Throughout our review, we have shown that the business model has been used to address different concerns in different contexts and in different management areas. Scholars have used the same term (i.e., business model) to explain and address different phenomena such as e-business types, value creation or value capture by firms, and how technology innovation works. Research about the role of business models has proceeded in largely isolated fashion within these "silos". There have also been a range of conceptualizations of business models within "silos." This multitude of (sometimes ad-hoc) conceptualizations has prevented, or at least slowed, cumulative research progress.

Given that interest in the concept has only recently emerged, it is not surprising that the literature is currently characterized by a lack of consensus. Definitional and conceptual disagreement is to be expected during an emergent phase of any new potentially big idea of general usefulness (Gladwin, Kennelly, & Krause, 1995). We use the opportunity that this emergent phase offers for clarification and making sense of the various developments: first by comparing and contrasting the various approaches to business models in each of the three identified literature streams (see Table 5), and second by suggesting possibilities for moving forward.

Table 5

Comparing and Contrasting Literatures on Business Models

	E-commerce	Strategy	Technology & Innovation Management
Main Purpose (Why the business model concept is offered)	To make sense of new “gestalts” and Internet-based organizational configurations To offer typologies or taxonomies (to which class does an observed business model belong to?) To explain firm's (new) role within its ecosystem	To explain new network- and activity system-based value creation mechanisms and sources of competitive advantage	To understand how technology is converted into market outcomes To understand new networked modes of innovation
What a Business Model Is Not .	Components in isolation, e.g.: <ul style="list-style-type: none"> • Revenue model/Cost Structure (Dubosson-Torbay et al., 2002) • Marketing model or strategy (Timmers, 1998) • Pricing model/strategy (Rappa, 2001) • Network structure (Tapscott et al., 2000) • Value proposition (Dubosson-Torbay et al., 2002) • Control mechanisms/Incentive systems (Casadesus-Masanell & Ricart, 2010) 	<ul style="list-style-type: none"> • Product market strategy (Zott & Amit, 2008) • Corporate Strategy (Richardson, 2008) • Market adoption strategy (Ojala & Tyrväinen, 2006) • Business processes (Shafer et al., 2005) • Senior leadership team processes and structures (Smith et al., 2010) 	<ul style="list-style-type: none"> • Technology (Chesbrough & Rosenbloom, 2002) • Policy (Johnson & Suskewicz, 2009) • Networked innovation (e.g., open innovation, collaborative entrepreneurship) (Chesbrough, 2003; Miles et al., 2006). • Management teams (Patzelt et al., 2008)
Antecedents of Business Models	<ul style="list-style-type: none"> • New information and communication technologies (Timmers, 1998; Dubosson-Torbay et al., 2002)) 	<ul style="list-style-type: none"> • Choices (e.g., Shafer et al., 2005; Casadesus-Masanell & Ricart, 2010) • Design drivers (Zott & Amit, 2010) • Discovery (McGrath, 2010) • External pressures - regulation (Tankhiwale, 2009) 	<ul style="list-style-type: none"> • Technology (Chesbrough, & Rosenbloom, 2002; Chesbrough 2007a) • Technological development, innovation (Calia et al., 2007; Björkdahl, 2009)
Mechanisms Through Which Business Models Influence Outcomes	<ul style="list-style-type: none"> • Pricing systems (Rappa, 2001; Tapscott et al., 2000) • Value chain de-construction and re-construction (Timmers, 1998) • Revenue mechanisms (Rappa, 2001) • Control Activities – Transactions’ Governance Structure –(Weill & Vitale, 2001) • Interaction pattern (Mahadevan, 2000; Dubosson-Torbay et al., 2002) 	<ul style="list-style-type: none"> • Schumpeterian innovation (Teece, 2010) • Value chain re-configuration (Zott & Amit, 2008) • Advantageous cost structures (Teece, 2007) • Competitive advantage – unique value propositions (Teece, 2007) • NICE mechanisms (Zott & Amit, 2008) 	<ul style="list-style-type: none"> • Network plays (Calia et al., 2007; Björkdahl, 2009) • Connection of the technology with customers (Chesbrough, & Rosenbloom, 2002)

Table 5 (continued)

	E-commerce	Strategy	Technology & Innovation Management
Outcomes / Consequences of Business Models		<ul style="list-style-type: none"> • Value creation (Amit & Zott, 2002) • Firm performance (e.g., Zott & Amit, 2007, 2008; Casadesus-Masanell & Ricart, 2010) • Competitive advantage (Christensen, 2001) 	<ul style="list-style-type: none"> • Value creation (Hedman & Kalling, 2002) • Relationship infrastructure (Björkdahl, 2009) • Innovation network dynamics (Calia et al., 2007) • Creation and appropriation of value from technology (Chesbrough & Rosenbloom, 2002)

As stated above (and summarized in Table 5), one possible way to move research on business models forward could be based on the realization that scholars in different fields use the same label to explain very different things. It might be helpful, perhaps, to adopt more precise labels that indicate the researcher’s main analytical focus, such as “e-business model archetype” (for studies on e-business model types), “business model as activity system” (for strategy studies focusing on boundary-spanning activities), or “business model as cost/revenue architecture” (for technology management and innovation scholars interested in explaining the economic mechanisms that allow a firm to commercialize technological innovations). This could help increase analytical focus and precision, and minimize potential confusion.

Our literature review offers a second possible avenue for advancing research on business models by suggesting the emergence of some important common ground among various business model researchers, despite the disparity of their approaches in terms of detailed concepts used and phenomena explained. It is our hope that the following four common themes that were identified in this review pave the way for future conceptual convergence and breakthroughs.

First, the business model is—explicitly or implicitly—considered as a new unit of analysis (see Tables 2 and 4), which spans or bridges traditional levels of analysis, such as the firm or the network. Some researchers view the business model closer to the firm (e.g., Casadesus-Masanell & Ricart, 2010), others place it closer to the network (e.g., Tapscott et al., 2000), and for others still it is nested somewhere between the firm and the network (e.g., Amit & Zott, 2002). All but a few business model scholars would agree, however, that it is a new, distinct concept, worthwhile of academic study and relevant in practice.

Second, as evidenced by the large number of studies attempting to provide business model typologies (see Table 3), business model researchers generally adopt a holistic and systemic (as opposed to particularistic and functional) perspective, not just on what businesses do (e.g., what products and services they produce to serve needs in addressable market spaces), but also on how they do it (e.g., how they bridge factor and product markets in serving the needs of customers). The business model perspective thus involves simultaneous consideration of content and process, which explains part of the challenge in defining and operationalizing the construct.

Third, many scholars include organizational activities, performed either by a focal firm or by any of its suppliers, partners, or customers, as part of their conceptualizations (McGrath, 2010; Teece, 2010; Zott & Amit, 2010). In many business model definitions the activity perspective is recurrent, either implicitly or explicitly. Some point directly to activities (e.g., Afuah, 2004; Hedman & Kalling, 2003; Seddon et al., 2004), others imply them indirectly, for example by pointing to processes (e.g., Alt & Zimmerman, 2001; Johnson et al., 2008; Morris et al., 2005), functionalities (e.g., Van Der Vorst, Van Dongen, Nougier, & Hilhorst, 2002), or transactions (Amit & Zott, 2001). All these concepts are related to the notion of organizational activities.

Combined with the first and second emerging common themes identified above (i.e., business models are a new unit of analysis and represent a system-level concept), this suggests a view of the business model as a firm-centric, yet boundary-spanning, activity system. This view is consistent with the representational nature that is often attributed to the business model (e.g., Applegate, 2000; Morris et al., 2005; Shafer et al., 2005; Stewart & Zhao, 2000; Weill & Vitale, 2001) as well as its systemic nature (e.g., Dubosson-Torbay et al., 2002; Timmers, 1998). A business model can be viewed as a “system that is made up of components, linkages and dynamics” (Afuah & Tucci, 2000: 4). And many of the modeling tools that have been proposed with the aim of representing the business model can be conceptualized as systems of activities. In a nutshell, the received literature on business models seems to support an activity system perspective.

A fourth insight that emerges from our review of the literature is that business model scholars have shifted emphasis from value capture to value creation, highlighting the latter without ignoring the former. Indeed, the business model promotes a dual focus on value creation and value capture. The centrality of the notion of value within the business model literature is apparent from the various conceptualizations of the business model which have been proposed (see Tables 2 and 4). For example, an analysis of the business model components shown in Table 4 as first- and second-order concepts reveals that the most prevalent component is related to the concept of value. The customer value proposition, for instance, is a recurrent component in the various definitions which have been provided (e.g., Johnson et al., 2008). And the technology management literature attributes to the business model a crucial role for realizing the value potential embedded in technologies (e.g., Chesbrough & Rosenbloom, 2002).

The centrality of the concept of value in the business model literature is therefore evident in all three areas around which we have organized our review: e-business, strategy, and innovation. Even those business model scholars who tend to focus on how value is appropriated by the focal firm recognize that value is created through the focal firm in concert with its ecosystem of exchange partners. Such a systemic notion of value is also apparent from the prevalence of concepts such as value network, value stream for customer and buyers, customer value, value proposition, or value chain structure in discussions of business models.

Taken together, these four emerging themes—the business model as a new unit of analysis, a system-level concept, centered on activities, and focusing on value—could serve as important catalysts towards a more unified study of business models. Based on these themes, we have identified a range of associated literatures that can inform the study of business models. We suggest that business model researchers also consider these literatures (of which we have synthesized the main insights in the Appendix) in order to advance the study of business models by building more robust constructs.

Limitations and future research. Despite our attempt to rigorously present and objectively organize the received literature on business models, this review comes with several limitations. First, much of the reviewed literature is quite recent, dating back only a decade or so. Second, only few contributions have appeared in top journals. Third, the literature is widely divergent; making sense of it is therefore challenging. Fourth, the business model remains theoretically underdeveloped (Teece, 2010), which may raise doubts concerning the usefulness of the business model as a construct for research and theory building. Future research should seek to overcome these limitations. Scholars, in particular, need to develop the theoretical foundations of the business model, and shed light on the conceptual distinction from other related concepts (such as new organizational forms, ecosystems, activity systems, and value chains and value networks). We need to establish clarity about the theoretical building blocks, the antecedents and consequences of the concept, as well as the mechanisms through which it works.

Conclusion

The burgeoning literature on business models is young, and quite dispersed. It is just starting to make inroads into the top management journals. A common conceptual base is still lacking, but our review of the literature suggests two ways to advance the study of business models. First, employing more precise labels (aka, constructs) would allow other researchers to better understand what the business model in the respective study is meant to denote (and what it is not). Our review suggests at least three concepts that might warrant distinct consideration: 1) business model archetypes, 2) business model as activity system, and 3) business model as cost/revenue architecture. These distinct ideas could all be fruitfully investigated—individually, as well as in relation to each other—under the umbrella theme of the business model.

Second, we found that a few important themes are forming, primarily around the notions of the business model as a new unit of analysis, offering a systemic perspective on how to do business, encompassing organizational activities (performed by a focal firm or others), and as a source of value creation. These themes are interconnecting and mutually reinforcing. This all suggests that the field is moving towards conceptual consolidation, which will pave the way for more cumulative research on business models.

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Appendix: Related Literatures

Our review of the business model literature revealed the following common themes: 1) business models are a new unit of analysis nested between firm and network levels; 2) they embody a holistic perspective on how firms do business; 3) they emphasize activities; and 4) they help explain value creation (not just value capture). These insights led us to review closely related adjacent literatures on: 1) new organizational forms, 2) ecosystems, 3) activity systems, and 4) value chains and value networks. In our short, focused reviews of these literatures, we have relied mainly on seminal pieces (articles and books), published mostly in top journals (see Table A1).

Table A1

Publications in Related Literatures

Domain Type	Author(s) - Year - Journal/Publisher
New Organizational Forms	Daft & Lewin, 1993, <i>Organization Science</i> Djelic & Ainamo, 1999, <i>Organization Science</i> Lewin, Long, & Carroll, 1999, <i>Organization Science</i> Lewin & Volberda, 1999, <i>Organization Science</i> McKendrick & Carroll, 2001, <i>Organization Science</i> McKendrick, Jaffee, Carroll, & Khessina, 2003, <i>Administrative Science Quarterly</i> Polos & Carroll, 1999, Stanford University Romanelli, 1991, <i>Annual Review of Sociology</i> Ruef, 2000, <i>The American Journal of Sociology</i> Victor & Stephens, 1994, <i>Organization Science</i> Zajac, Golden, & Shortell, 1991, <i>Management Science</i>
Ecosystem	Adner, 2006, <i>Harvard Business Review</i> Adner & Kapoor, 2010, <i>Strategic Management Journal</i> Boudreau, 2009, Paper presented at research seminar, IESE Business School Boudreau & Hagiu, 2008, Working Paper 0-061, Harvard Business School Iansiti & Levien, 2004, Harvard Business School Press Moore, 1996, Harper Business Pierce, 2008, <i>Strategic Management Journal</i> Power & Jerjian, 2001, Pearson Education Ltd.
Activity System	Bigley & Roberts, 2001, <i>Academy of Management Journal</i> Blackler, 1993, <i>Journal of Management Studies</i> Engestrom & Middleton, 1998, Cambridge University Press. McLure Wasko & Faraj, 2005, <i>MIS Quarterly</i> Milgrom & Roberts, 1990, <i>The American Economic Review</i> Milgrom & Roberts, 1995, <i>Journal of Accounting and Economics</i> Piccoli & Ives, 2005, <i>MIS Quarterly</i> Porter, 1985, Free Press Porter, 1996, <i>Harvard Business Review</i> Porter & Siggelkow, 2008, <i>Academy of Management Perspectives</i> Siggelkow, 2002, <i>Administrative Science Quarterly</i> Siggelkow & Levinthal, 2003, <i>Organization Science</i> Spender, 1996, <i>Strategic Management Journal</i> Stieglitz & Heine, 2007, <i>Strategic Management Journal</i>
Value Chain and Value Networks	Allee, 2002, Butterworth-Heinemann Brandenburger & Nalebuff, 1997, Doubleday Brusoni, Jacobides, & Prencipe, 2009, <i>European Management Review</i> Chesbrough & Appleyard, 2007, <i>California Management Review</i> Gulati, 1998, <i>Strategic Management Journal</i> Hansen & Birkinshaw, 2007, <i>Harvard Business Review</i> Jacobides & Billinger, 2006, <i>Organization Science</i> Jacobides, Knudsen, & Augier, 2006, <i>Research Policy</i> Normann & Ramirez, 1993, <i>Harvard Business Review</i> Parolini, 1999, John Wiley & Sons Ltd Porter, 1985, Free Press. Porter, 1996, <i>Harvard Business Review</i> Stabell & Fjeldstad, 1998, <i>Strategic Management Journal</i> Thorelli, 1986, <i>Strategic Management Journal</i>

New Organizational Forms

A major theme of organization theorists is how organizations evolve and adapt to their environments. The popular business press of the 1980s and 1990s produced extensive literature under the label of “new organizational forms” (Daft & Levin, 1993). Thus, terms such as post-industrial organization, post-bureaucratic organization, joint ventures, internal corporate joint ventures, cluster organization, and flexibility became familiar to practitioners and the business public, and were supposed to represent the so-called new organizational forms (e.g., Djelic & Ainamo, 1999; Zajac, Golden, & Shortell, 1991). Practitioners and academics recognized the emergence of new ways of organizing, which were moving away from the traditional paradigm within which organizations strive for more production efficiencies, hierarchical organizations, and bureaucratic structures that provide central control over activities divided into small parts (Daft & Lawin, 1993). As managers in organizations started to engage in organizational experiments, new terms such as modular organization, virtual corporation, spinout corporation, cluster organization, learning organization, network organization, and perpetual matrix emerged in the academic literature (Barlett & Goshal, 1989; Miles & Snow, 1986).

Despite the attention new organizational forms received, there was no universal agreement about the nature of the phenomena the concept was intended to capture. At the beginning of the 1990s Elaine Romanelli reviewed the body of work on the new organizational forms, finding that, even at a basic level, there were no common definitions of the form concept in use (Romanelli, 1991). A decade later, McKendrick and Carroll noted that, in the ten years that followed Romanelli’s review, conceptual positions concerning new organizational forms had further diverged, with the concept becoming, “if anything, more elastic” (McKendrick & Carroll, 2001: 662).

Despite the variance in perspective and the debate which characterized the literature on the topic, however, some definitions have achieved wider popularity than others. One of these is Romanelli’s characterization of organizational forms. According to her, the concept refers to those characteristics that identify the organization as a distinct entity and classify it as a member of a particular group of similar organizations (Romanelli, 1991). Others have emphasized an institutional and cognitive perspective. McKendrick and Carroll (2001), building on the work of Polos and Carroll (1999), conceptualized organizational forms as external codes of identity. Thus, the organizational form becomes a recognizable code, which serves both for interpretative signal (the “genetic code”) and as a basis for rules of conduct (the “penal code”) (McKendrick, Jaffee, Carroll, & Khessina, 2003: 63).

Such clarification of the concept of organizational form has represented a point of departure for conceptual research on the topic. The central concern of researchers has been one of understanding why new organizational forms come into being. This question has been approached through a wide range of perspectives and different theoretical lenses. In her review work, Romanelli identified three dominant approaches or views in the literature: 1) an organizational genetic view that focuses on characteristic features of organizations and sees variation as a random event; 2) an environmental conditioning view that emphasizes the role of environment and exogenous forces in determining variation in organizational forms; and 3) a social system view that sees “organizational form variation to be the products of embedded social organizational interactions” (Romanelli, 1991: 81).

Victor and Stephens (1994), in a critical analysis of the social changes following from the emergence of post-bureaucratic, networked organizations, highlight how new organizational

forms tend to arise in response to technological and social changes. Scholars have not only examined how new organizational forms emerge, but also how they evolve. The distinctive nature of new organizations and forms and their change could be interpreted in a co-evolutionary framework (Lewin, Long, & Carroll, 1999; Lewin & Volberda, 1999) that integrates the interplay between the adaptation of individual organizations, their competitive dynamics, and the dynamics of the institutional system in which these organizations exist. In a similar vein, it has been proposed that the emergence and evolution of forms has to be puzzled out within the concrete system of interrelationships among suppliers, consumers, regulators, and intermediaries settled in a specific institutional arena (Ruef, 2000).

Ecosystems

The notion of ecosystem is a central concept in biology and earth sciences. According to the online Encyclopædia Britannica (2010), an ecosystem is “the complex of living organisms, their physical environment, and all their interrelationships in a particular unit of space.” From the sciences, the analogy has spread to different fields and was first applied to interpret the reality of businesses by Moore in 1996. In his suggestive *The Death of Competition*, Moore (1996) declared that the term “industry” should be replaced with the term “business ecosystem,” which is an economic community supported by a foundation of interacting organizations and individuals. As in natural ecosystems, firms cannot thrive alone; they need to develop in clusters.

As suggested by the title of Moore’s book, the concept of ecosystem put forward a different understanding of competition and cooperation. If competition is a specific mode of relationship between firms in the market, which puts particular emphasis on the relationship of the focal firm with its competitors, then the ecosystem notion highlights the fact that in many situations different firms, not necessarily in the same industry, are drawn together in a relationship of complementarity or even dependency, and that this type of relationship might involve various forms of cooperation. In this sense the ecosystem standpoint should be taken while considering the advantages of cooperation (Power & Jerjian, 2001). In nature, different species help each other produce wealth and prosperity for the whole community, and Power and Jerjian propose that the ecosystem metaphor provides an interesting lens through which to approach the idea of value generation through cooperation (as opposed to value appropriation in zero sum competitive games).

Cooperation in ecosystems is a consequence of their networked nature. Interdependence, not only with competitors, but also with customers, complementors, and other stakeholders, introduces the idea that firms might manage relationships at different levels. Adner and Kapoor (2010), for example, have found that the success of an innovating firm often depends on the activities performed by third parties in its environment. Therefore, for managers, a company’s success hinges on the accurate assessment of its ecosystem’s risks; that is, the identification of opportunities and threats, as well as the value chain analysis, should be mapped systemically (Adner, 2006).

Interdependence is also emphasized when considering the evolutionary process of ecosystems players. In natural ecosystems, the evolution of living organisms is a path-dependent but chaotic process, as they react to natural changes in their habitat. Small changes can produce a wide variation of outcomes depending on the actor analyzed. Pierce (2008: 325) found that “the actions of core firms in business ecosystems can have widespread and severe effects on

complementors, and that monitoring and understanding the actions of these core firms must be of primary importance to managers of firms in niche markets.” Iansiti and Levien (2004: 8-9) recognize that:

“[the] biological ecosystem provides a powerful analogy for understanding a business network. Like business networks, biological ecosystems are characterized by a large number of loosely interconnected participants who depend on each other for their mutual effectiveness and survival. And like business network participants, biological species in ecosystems share their fate with each other. If the ecosystem is healthy, individual species thrive. If the ecosystem is unhealthy, individual species suffer deeply. And as with business ecosystems, reversals in overall ecosystem health can happen very quickly.”

Information technology facilitates interconnections both between and within firms. At the same time, open world markets and liberalization make firms more sensitive to the effects of a wider landscape than in the past. This increase in interdependency has accelerated the search for intellectual tools to understand this challenge.

The interdependency of firms appears to be most evident in the digital and communication industry, which helps explain why most of the literature using the concept of ecosystem has focused on this area. Empirical research has focused on whether outside innovation should be organized through collaborative or competitive networks (Boudreau & Lakhani, 2009); how to predict if adding a new contributor will be productive in the innovative process (Boudreau, 2009); and which instruments should be used to govern large platforms (Boudreau & Hagiu, 2008).

The ecosystem concept raises issues that have been suggested by adjacent literature drawing on similar concepts. As pointed out by Adner and Kapoor (2010), these issues include development incentives, positioning and coordination choices, customer expectations, and value chain configuration.

Activity Systems

The view of companies as activity systems is quite intuitive; indeed companies “work” because they generate products and services that are designed, developed, and realized by performing various activities. Not surprisingly, the view of companies as sets of activities has been adopted in the management literature. Michael Porter described the concept of activities and its use in understanding competitive advantage (1985). Almost a decade later he noted that strategy rests on the uniqueness of activities, and on the deliberate choice of different sets of activities to deliver a unique mix of value (Porter, 1996). According to Porter, positioning choices determine the specific set of activities a company performs and how they relate to one another. Since discrete activities often influence one another, the system level approach implicit in the activities view emphasizes interdependence and gives rise to the notion of fit among activities.

Three types of non-mutually-exclusive fit have been described. The first order type of fit is consistency between each activity (function) and strategy. Consistency ensures that the competitive advantage arising from activities accumulates and does not erode or cancel out. Second order fit occurs when activities are mutually reinforcing. According to Milgrom and Roberts (1990), activities are complements when the marginal value of one activity increases as the other activity is increased. Finally, third order fit goes beyond activity reinforcement to produce global optimization, a system-level type of fit, which optimizes the entire set of activities to eliminate redundancies and minimize waste.

An approach to activity systems that emphasizes interdependency has been taken by Milgrom and Roberts (1990; 1995), who have looked at the notion of fit from the lens of economic theory and modeling, focusing on systems of complementary activities and functions. Guided by the observation that many firms in the American economy were shifting from mass production to lean manufacturing, Milgrom and Roberts (1990) proposed a mathematical optimization model of the firm's activities that generated many of the observed patterns in the transition from one system to the other. Their model accounts for (and renders mathematically tractable) the idea of complementarity among activities.

The complementarity model has provided a systematic way of analyzing the organizational implications of interdependence and has spurred both theoretical and empirical research (for a review see Porter & Siggelkow, 2008). However, research has noted that the nature of interaction among activities is not only one of complementarity, but also of substitutability. According to Porter and Siggelkow, activities are substitutes when the presence of one activity decreases the marginal benefit of the other. The nature of the interaction, however, may not be an inherent property of the activity but a function of other choices made by the firm. In other words, they suggest that interaction among activities is contextual, and that understanding the context of interactions may be crucial in order to understand the sustainability of competitive advantage. Similarly, for Blackler (1993), if one takes seriously the idea that organizations are activity systems that are embedded within and restricted by an external network of activity systems, then it follows that organizations cannot be separated from their contexts and the very concept of organizational boundary turns out to be problematic.

Scholars concerned with the processes of knowledge production also contributed to the diffusion of the concept of firm as a set of activities. For example, Engestrom and Middleton (1998) suggested that working knowledge is collectively created, represented, and implemented within specialized communities of practice. Therefore, for these authors the workplace is a social setting of negotiated meanings in which knowledge is embedded within the activity system that generates these meanings. Spender (1996), in turn, claimed that a knowledge-based theory of the firm offered insights that overcame the shortcomings of the production-function and resource-based theories of the firm. According to him, this theory "is a platform for a new view of the firm as a dynamic, evolving, quasi-autonomous system of knowledge production and application" (Spender, 1996: 59).

Technology has made possible the new combinations of activities. McLure and Faraj (2005) analyze electronic networks of practice—or online communities—to discover why some individuals opt to cooperate instead of compete. They define the electronic network as a self-organizing, open activity system focused on a shared practice that exists primarily through computer-mediated communication. In a similar vein, Piccoli and Ives (2005) study IT-dependent strategic initiatives and discover that they are the configuration of an activity system that fosters the creation and appropriation of economic value.

The networked configuration of activities has led to the reassessment of the concepts of coordination and cooperation, as complementarity and overlapping of activities within a network or market are more likely (Stieglitz & Heine, 2007). Firms have to find out the right configuration of internal activities, which means that they must be aware of the appropriateness of the activities performed. When the competitive landscape changes dramatically, firms have to face the challenge of reassessing their set of activities and deciding which ones to keep performing and which ones to discontinue (Siggelkow & Levinthal, 2003). New concepts have been developed by academia to describe the possible mixtures that

managers should assess; “hybrid,” “network,” and “virtual” emerge as arrangements that could better match the new reality, particularly in the context of unexpected and demanding environmental contingencies (Bigley & Roberts, 2001).

More recently, scholars have also been considering business models in collective action. Doganova and Eyquem-Renault (2009), for example, have studied the business model as a narrative and calculative device that allows entrepreneurs to explore and create a market. According to Perkmann and Spicer (2010), business models work in three ways: as narratives that convince, as typifications that legitimize, and as recipes that guide social action.

In sum, through the notion of activity systems scholars have gained a more insightful perspective to deal with phenomena such as the social nature of knowledge production (Engeström & Middleton, 1998), the opportunities for new business arrangements taking advantage of technology (Piccoli & Ives, 2005), and how to balance or assemble cooperation and competition (McLure & Faraj, 2005). Understanding the set of activities performed by the firm is conducive to the reinforcement of the company’s competitive advantage (Porter & Siggelkow, 2008).

Value Chains and Value Networks

The concept of value chain has been put forth by Porter (1985, 1996), to describe the sequence of activities performed by a company in the process of adding value to its product and delivering value to the customer. The value chain is a two-level generic taxonomy of value creation activities (Stabell & Fjeldstad, 1998), which differentiates between primary activities (inbound logistics, operations, outbound logistics, marketing and sales, service) and secondary activities (administrative functions, technology, human resource management, procurement). While the primary activities have a direct impact on value creation, secondary or “support” activities affect the value creation only through their impact on the performance of primary activities (Porter, 1985). By considering the flow of goods and services from raw materials to consumption as a unit of analysis, the value chain provides a perspective on the macro-view of the firm’s exchanges. Thus, at least in its original formulation, the value chain focuses mainly on intra-organizational relationships and organizational activities. According to the value chain framework, value is created by differentiation through activities that reduce buyer costs or raise buyer performance. The drivers of product differentiation, and hence sources of value creation, are policy choices, linkages within the value chain or with suppliers and channels, timing (of activities), location, sharing of activities among business units, learning, integration, scale, and institutional factors. Porter defines value as “the amount buyers are willing to pay for what a firm provides them. Value is measured by total revenues...a firm is profitable if the value it commands exceeds the costs involved in creating the product” (Porter, 1985: 38).

The value chain focuses on value creation at the firm level (Amit & Zott, 2001). A firm’s value chain, however, is also embedded in a system of value chains (Porter, 1985); therefore inter-organizational relationships are indirectly acknowledged, as the focal firm value chain links to the value chains of upstream suppliers and downstream buyers. The overall system is thus a chain of sequentially interlinked primary activity chains that gradually transforms raw materials into the final product (Stabell & Fjeldstad, 1998). Value creation is envisioned as a longitudinal process, a sequence of value-adding activities.

The concept of value chain and related concept of competitive advantage have exerted influence in management studies, as well as in management practice, becoming the accepted

language for both representing and analyzing the logic of firm-level value creation (Stabell & Fjeldstad, 1998). However, the longitudinal character of the value creation process defined by the value chain has been considered increasingly inadequate to the analysis of value creation processes in firms, as the economy saw the birth of new networked organizational forms and the growth of service firms, both of which differ from the traditional manufacturing firms for which the value chain was originally conceived.

Ontologically, the value chain envisions the firm as an autonomous entity, striving for competitive advantage over rivalry. This conceptual position provides a view of firms as atomistic actors competing for profits against other firms in impersonal markets. The conceptual parsimony embedded in this view comes with an ontological position that is inadequate to capture value creation in the networked world (Mansfield & Fourie, 2004) in which firms are more and more embedded in networks of social, professional, and exchange relationships with other individuals and organizational networks. Additionally, the typology and underlying value creation logic envisioned by the value chain is more suitable for manufacturing firms than for service firms (Armistead & Clark, 1993; Lowendahl, 1992; Stabell & Fjeldstad, 1998), and thus might also not be able to fully capture value creation mechanisms which characterize information goods and virtual markets (Amit & Zott, 2001).

Concepts such as vertical architecture (Jacobides & Billinger, 2006), open innovation (Chesbrough & Appleyard, 2007), innovation value chain (Hansen & Birkinshaw, 2007), strategic networks (Gulati, 1998), co-opetition (Brandenburger & Nalebuff, 1997), and value networks (Allee, 2002; Normann & Ramirez, 1993; Parolini, 1999) came in response to the limitations embedded in the value chain framework. These concepts build on the value chain, at the same time providing complementary views which allow consideration of new forms of network plays as well as the co-evolutionary dynamics and co-dependencies that exist between the firm and its environment.

The concept of the value network and related work on strategic networks and alliances address the increasing complexity and intricacy of inter-firm relationships. The work on strategic networks tends to focus on the use of organizational alliances as deliberate strategic moves (e.g., Gulati, 1998) and conceptualizes such networks as new types of governance positioned between markets and hierarchy (Thorelli, 1986). More recently, works have started to emerge which specifically envision these alliances from the lens of value networks. Allee (2002) sees a value network as “a complex set of social and technical resources that work together via relationships to create economic value in the form of knowledge, intelligence, a product (business), services or social good.” Allee’s value network focuses on the conversion of intangible forms of value into economic value or negotiable forms of value, and extends the notion of value as purely economic.

In a parallel stream of research, Parolini (1999) has extended the value constellation concept of Normann and Ramirez (1993) and conceptualized the value network as “a set of activities linked together to deliver a value proposition at the end consumer.” Parolini’s core entities are the activities within the network. This view is similar to the value chain, but extends the notion of activities from considering mainly intra-firm activities, to considering the configuration of activities that involves the firm and its ecosystem of exchange partners. The value network is conceptualized as a purposive system, which aims at the satisfaction of the value proposition for the end consumer. Value network analysis is primarily a visual representation of patterns of exchanges between participants, mapping both traditional business transactions and critical intangible exchanges. Intangible exchanges are those mostly informal knowledge exchanges

and benefits or supports that build relationships and keep things running smoothly. These informal exchanges are actually the key to creating trust and opening pathways for innovation and new ideas. Allee (2002) noted that traditional business practices ignore these important intangible exchanges, but they are made visible with a value network analysis.

More recently an emerging body of work has built on the concept of value network in seeking to explain the emergence and evolution of structures and dynamics at the industry level (Brusoni, Jacobides, & Prencipe, 2009). This new research effort revolves around the notion of industry architecture (Jacobides, Knudsen, & Augier, 2006), which extends the conventional economic concept of an industry and complements it by embracing the entire structure of the supporting value chain and the full range of institutions involved. It thus emphasizes the stable, but evolving, configuration of relationships along the value chain, and the associated set of roles and rules that emerge (Brusoni et al., 2009).

While the original value chain concept might be too limited in scope for the analysis of the value creation process associated with new business models, related work and further developments of the concept, in particular the line of work on the value network, might constitute an important stream of research that complements the business model literature.