Abstract

Business models and value networks have become buzzwords in strategic management and technology management fields. In particular, both constructs have been extensively applied to the analysis of rapidly changing and highly innovative telecommunications industry, yet there is no consensus on precisely what they represent or how to operationalize them. This entry reviews the literature on business models and value networks and presents examples of applications within the telecommunications industry. A working definition that integrates both concepts is suggested.

INTRODUCTION

The concepts of business models and value networks have attracted wide attention of late in the strategic management and technology management literatures. In particular, business models have been extensively discussed in theoretical and applied works dealing with the telecommunications industry. This trend is strongly related to the fact that the telecommunications industry is highly innovative and technology-intensive. In such an environment, players must constantly examine which are the main drivers of value creation and capture in their business. Similarly, the notion of a value network guiding the logic of value creation, delivery, and appropriation is particularly relevant for players operating in this industry, which is characterized by dynamic competitive scenarios where strategy making must be agile and responsive in order to cope with intense technological, regulatory, competitive, and social change.

However, although much has been written about business model and value networks and many attempts to define and operationalize the constructs have been made, a consensus on what they represent and how they can be operationalized has not been reached yet. This may be related to the fact that the concept of business models has emerged more or less independently in three different streams of literature (strategic management, technology management, and entrepreneurship), or it may reflect the rather integrative and ad hoc use of these concepts by earlier authors, according to the objectives of each individual study. Whatever the reasons, it is striking that such useful and popular concepts still lack a unified, universally accepted definition.

Thus, in this entry we review the literature on business models and value networks, particularly as they are applied to the telecommunications industry.

This entry is structured in five sections. First, the main topic is introduced and its importance and relevance are discussed. The next section brings a brief review on the topic of Business Models from a historical evolution perspective, including a review of the main definitions and component dimensions proposed in the literature. The subsequent section includes a review on the topic of value networks. In the penultimate section, a number of examples of the use of the business model and value network concepts in the telecommunications industry are presented, followed by the proposition of an interpretative framework integrating both constructs that can be applied to the strategic analysis of and corporate-level decision making in the telecommunications industry in final section.

BUSINESS MODELS

Historical Evolution

The business model concept has much evolved since it first appeared in the business lexicon. Initially, it was used to describe, usually on empirical grounds and in a mostly informal way, the overall logic behind a firm or a business. The understanding that different firms in the same industry could employ different business logics had been brewing among scholars of strategy since the 1980s, but this notion became relevant especially with the emergence of the Internet in the late 1990s. At the time, it became obvious that the emerging e-business phenomenon allowed firms to articulate their business in new ways, using the Web to directly reach customers or...
establish partnerships, thus bypassing traditional intermediaries, to conduct business operations more efficiently or even to create new products and services that would not make sense before the advent of the World Wide Web.[8] The business model concept thus appealed to entrepreneurs and business analysts interested in explaining how a business was articulated and how it operated in that new context.

At roughly the same time, the literature on technology management began to use the term business model to explain how a specific technology innovation would be marketed. This was due to the growing perception that the technology itself was not, in most cases, the main driver of successful innovation. It was necessary to explain how the technology created value for the customers, and also how the business would be able to capture part of that value to become sustainable. Similarly, the business model concept captured the internal and external activities (including the relationships with business partners) necessary to transform an invention into a successful innovation.[9]

These earlier uses of the business model concept mostly lacked coherence and formal structure. Thus, it was deemed more elusive than informative. Precisely for this reason, the business model construct has been criticized by influential authors as being murky or fuzzy.[10] Even so, it became highly popular with both academics and practitioners alike, mainly because of its usefulness from a practical point of view, its versatility, and intuitiveness. After all, business models actually serve a most useful purpose: to simplify the numerous variables that influence the way different businesses are structured and to present them in a coherent and unified form, allowing decision makers and managers to focus attention on the whole system that constitutes a business.

During the 2000s, scholars of technology management, entrepreneurship, and strategy began to systematically study that promising concept.[2,3,9] Consequently, a number of different definitions were proposed in that decade. Some of these definitions resorted to the simplicity that the concept evoked.[7,10] The general consensus at the time was that a business model should explicate why and how value is created, exchanged, and consumed in a network of interrelated actors.[1,8] Some authors even mentioned specific aspects of value proposition, positioning in the value network, and type of arrangement with the customers in order to generate value, but as a rule, not much was done in terms of analytical modeling or explaining causal relationships.[2,9]

More elaborate definitions followed. In a very influential work, Chesbrough and Rosenbloom[11] developed a functional definition of business model that recognized six functions that a working business model should attend to: articulate the value perspective; identify market segments; define the internal value chain and estimate costs and profits; describe the (external) value network; and formulate the competitive strategy, that is, how the business model should evolve.

At the same time, much research was dedicated to identifying the building blocks of a business model, that is, what are its constituting elements and how they relate to each other and to the main objective of the business model, that is, explaining the logic behind a business. In fact, much of the early research was concentrated on proposing conceptual frameworks for business model design, analysis, and innovation in the form of meta-models. A widely cited literature review by Shafer et al.[12] came up with four major components: strategy formulation (including target market, value proposition and offering, revenue/pricing and identification of critical competences), value creation (resources, assets, processes, and activities), value capture, and value network (in particular, defining the relationships with suppliers, key partners, and customers). Moreover, Shafer et al.[12] propose the following integrative definition of business model: “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network.”

The work by Shafer et al.[12] apparently captured the consolidation of the business model concept in the early 2000s. During the second half of the decade, most of the studies that described dimensions, components, or aspects that constitute a business model usually included dimensions or perspectives that were very similar to what the authors came up with: a value proposition perspective, which roughly described the offering in terms of products, services, and target market and proposed a narrative that explained on how this offering was valued by the customers; a value creation perspective, dealing with the internal and external mechanisms that allowed the firm to execute the value proposition; a value appropriation perspective, which informed how the firm would capture part of the created value; and a value delivery dimension, dealing with the external value network necessary to bring the offering to the customers, which included the key relationships and delivery channels accessed by the firm.

At the same time, a number of authors proposed classification schemes or typologies of business models. This approach is important because it generates insights on generic business models that are useful to a wide array of firms using a single unit of analysis. One of the first studies on business model typologies is that of Timmers[13] who proposed a framework for the classification of Internet-enabled business models. Another remarkable example is offered by Malone et al.[14] They start with a very simple operational definition of business models that describes what firms do and how they create value based on the combination of types of asset rights being sold (creators, distributors, landlords, and brokers) and types of assets transacted (financial,
physical, intangible, and human). Then, the authors propose a typology of 16 possible business models built upon the combination of the four asset rights and types of assets. This typology is used to classify business models of existing firms, whose financial performances are assessed in order to identify whose business models generate the best results. However complete and generic the approach by Malone et al. is, its main contribution was the demonstration that the business model concept can be used in a working typology and that it can be related to firm-level performance.

**Business Models Today**

Built upon the consolidated narrative of published literature reported in the previous section, the business model concept is now widely understood as an analytical model of how a business approaches value creation, delivery, and appropriation, including the choice of activities, resources, capabilities, and external relationships. In other words, business models serve today a most useful purpose that is very akin to its original aims: to simplify the numerous variables that influence how businesses are structured and to present them in a coherent and unified form. This allows all involved to share a common view of the business, including its strategic and operational parts as well as internal and external components.

A premise behind the logic of a business model is that value creation depends greatly on how the value proposition is formulated and enacted at the operational level. Value proposition, in turn, should originate from top-level strategic choices regarding a firm’s internal capabilities and resources and the challenges and opportunities detected in the external environment. Thus, it may be argued that the business model concept operates at an intermediate, architectural level midway between strategic planning and operations. In other words, a business model is how strategy is operationalized. Given the overall strategic environment, a company chooses between different high-level strategic alternatives aimed at achieving and sustaining competitive advantage. Once the strategic directives are established, these can be implemented through a number of different business model alternatives, which focus on the creation and capture of customer value. In this context, the business model concept can be considered as a valuable tool for bridging the gap between strategy formulation/planning and implementation in the form of business processes and activities. This is the most accepted interpretation till now of the relationship between business models and strategy.

Regarding the components of a business model, existing literature has not deviated much from what was established in the mid-2000s. For instance, Demil and Lecocq describe a business model with three core components: resources and competences, organizational structure (including activities and relationships with external stakeholders), and value proposition (products and/or services, customers, and transactions). The components proposed by Demil and Lecocq are related, respectively, to the notions of value creation, delivery, and proposition, while value capture derives from the choice of elements that define each specific business model.

The latest conceptual interpretation of business model by Habtay encompasses five dimensions: strategy, value proposition, customer base, value network configuration, and revenue model, while that of Cortimiglia et al. is built around five different dimensions: value proposition, value delivery, value appropriation, value networking, and value creation. Indeed, most other contemporary works on business modeling follow a similar structure, some emphasizing more on one aspect over the others according to the specific aims of each study. So, it seems that not much has changed since the seminal Ph. D. thesis by Osterwalder, who further developed these four dimensions into nine generic business model parameters. This work later gave birth to the Business Model Canvas, a tool for business model design and analysis proposed by Osterwalder and Pigneur, which is extremely popular with practitioners nowadays.

In the Business Model Canvas, a business model is decomposed into nine interrelated parameters: value proposition, customer segments, information and distribution channels, customer relationships, key activities, key resources, key partners, cost structure, and revenue model. The value proposition block describes the products or services offered to the market, while the customer segment, customer relationships, and channels describe how value is actually delivered to clients. On the other hand, key activities, key resources, and key partners describe how the business creates the value proposition, while the cost and revenue structures explain how this value is captured by the business at hand. The Business Model Canvas has become extremely popular, particularly among practitioners and consultants, and is also widely used by academics. However, the Canvas approach can be criticized for not explicating the causality logic behind the choices of elements. In fact, most conceptual frameworks do not offer rules or guidelines to clarify how a change in one element within a dimension will impact the others. Moreover, it is also not clear how business model design relates to the overall strategy-making process. Does a firm first analyze its internal resources and capabilities (value creation) and potential activities that partners may be responsible for (value networking) in order to define a concrete offering and a target market (value proposition) coupled with a revenue generation
mechanism (value appropriation)? Or does a firm first define a value proposition and then search the environment for value creation alternatives?

These questions have been guiding a whole new stream of research on business models. Many scholars are now dedicated to understanding how business model design is conducted in both existing and new firms.\cite{1,3}

Consequently, the topic of business model evolution and innovation has risen in importance lately. It has long been recognized that business models are not static. In fact, most early approaches included remarks on how business models must adapt and change in response to dynamic environment conditions or, following a technology management venue, how business models must be loosely defined and easy to modify as new technologies were introduced and received by the target market. The topic of business evolution and change gained prominence through the numerous studies that described and analyzed the profound changes that affected the music and news industries of late.\cite{1,3,4,5}

In a sense, the business model concept has always been seen as a more responsive construct than the overall firm strategy, a view that finds resonance in today’s interpretations of the relationship between business models and strategy.\cite{1,5,15} Similarly, the existing notion that experiments with business models may be a source of competitive advantage is inherently linked to the new interest in business model innovation. This topic remains an important venue for more research, as research in business model innovation is still mostly exploratory, and theoretical foundations have not yet been unequivocally established.\cite{22,23,24,25,26}

VALUE NETWORKS

Hitherto, the main issues in business model research included approaches to internal cooperation and coordination and the level of vertical and horizontal integration.\cite{1,15} However, as methodologies and ontologies for systematically mapping business models matured, the focus of business modeling shifted from the single firm to the entire value network.\cite{4} The analysis of literature pertaining to value chains and value networks is of fundamental importance to this entry because it sheds light on the value creation processes and roles that are distributed throughout the network of relationships that make up a business model. In addition, to understand what is a value network facilitates the identification of the roles that are played in an industry or market.

The value network concept has its origins in the original value chain introduced by Porter,\cite{24} which described the value-adding activities internal to the firm. The value chain perspective sees the firm as a series of chained relevant activities, and posits that value is created through efficient resource allocation at these activities. Later, the value chain context was extended to the outside of the firm by introducing the notion of value system, meaning the larger stream of value-adding activities that include suppliers, delivery channels, and buyers at both extremes of a firm’s value chain. It should be noted that the value chain does not give much importance to how value-adding activities are distributed along members, or how can resources be shared by or acquired from an external source. Although created for analyzing individual firms, the value chain construct was widely employed to investigate entire industries, especially in traditional manufacturing sectors.

At the end of the 1990s, with the combined emergence of the resource-based view of the firm and the strategic network bodies of literature, the value chain configuration was challenged. In particular, two new value configurations—or logics for value creation—appeared in the strategic management literature: the value network and the value shop.\cite{25} While in the value chain logic the creation of value relies on efficient processes and routines focusing on the almost linear transformation of inputs into products, the other two configurations propose different approaches to value creation. In the value shop, value creation derives from the solution of unstructured (and sometimes unique) customer problems. In this sense, value creation depends strongly on a firm’s resources and capabilities. In the value network logic of value creation, instead, value is created by connecting interdependent actors, usually with the help of mediating technologies. In this configuration, value creation is not the province of the single firm, but of the whole network. Financial services and telecommunications companies are good examples of firms that create value according to the value network logic.

Adopting a value network perspective requires business designers and decision makers to change the focus of their planning. Instead of considering the firm as the single most important unit of analysis, the examination of the relationships between a business enterprise and its partners, competitors, and clients has to come to the foreground. In this new paradigm, value is created, delivered, and appropriated through the network, and the role of the different members in each of these activities must be clearly specified when designing or analyzing a business model. The significance of the value network concept can be explained through the core competence lens: as most firms narrow their set of core competences as a consequence of increasing market and environmental complexity, the only natural way to amplify a firm’s value-creating capabilities is to associate with other firms.\cite{8}

A distinctive aspect that must be considered when dealing with value networks is the role of information.

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\textsuperscript{[1,3,5,15,22,23,24,25,26,1,3,4,5,6,7,8]}
and communication technologies (ICT). Evidently, lower transaction costs due to automated systems and technologies eliminate much of the benefits associated with closed, integrated firms that are typical of the value chain paradigm.\[8,9\] Similarly, ICT also lower coordination and communication costs, facilitating the establishment and maintenance of alliances not only at the strategic level, but also at the operational level.\[27\] The most notorious technology behind the paradigmatic change in value creation logic is the Internet. The profound changes that characterized the traditional news industry until now exemplify the transformation from a value chain to a value network logic.\[28\] In this case, the biggest change came when the content creation activity, traditionally assigned to few internal critical assets, was challenged by the multiplicity of sources and delivery options made available by the Internet. However, the Internet is not the only technology that challenged the value chain logic. As it is shown in the next section, mobile phones also played a significant role.

**BUSINESS MODELS AND VALUE NETWORKS IN THE TELECOMMUNICATIONS INDUSTRY**

The business model and value network concepts have long been applied to the telecommunications industry. In fact, many of the academic works that first proposed a change of paradigm in the value creation logic from a chain-like structure where business models were connected sequentially to a network-like structure built upon multiple relationships that support value creation and appropriation were supported by empirical data from the telecommunications industry,\[5\] particularly the Internet and mobile sectors. Thus, special attention is given in this entry to previous researches featuring the business model and value network concepts circumscribed to the telecommunications industry, in particular within the mobile communications segment.

The first examples of research about business models and value networks applied to the telecommunications industry date from the early 2000s.\[29–32\] At the time, the mobile–Internet convergence that is in full act right now was still in its infancy, so there was still a striking difference between the Internet experienced at the desktops and mobile phones. Consequently, there was a relative level of separation between these two sectors. Studies that employed the concepts of business model and value network at the time usually described business models in terms of a logical architecture for the flow of products, services, and information in the mobile environment, which is organized accordingly in a network of interdependent actors.\[30\] Early attempts to apply the value network concept to the telecommunications industry were fairly descriptive, pointing out who were the main actors (technology platform vendors, infrastructure and equipment vendors, application platform vendors, application developers, content providers, content aggregators, mobile portal providers, mobile network operators[MNOs], and mobile service providers) and briefly sketching their business models as well as how these models related to each other.\[29,30\] Usually, the most studied mobile value networks were those articulated around the MNO, the business enterprise that effectively owns the final customer (the subscriber). Although the earlier studies on MNO-centered mobile value networks usually did not include a structured description of the relationships among actors, the list of players, and the highlighted importance of the MNO still remain valid today.

Just as MNOs dominated the research on value networks applied to the telecommunications industry, much of the early concern in terms of business models was also dedicated to the MNOs. In their study of MNOs’ business models, for instance, Kallio et al.\[33\] proposed a business model framework originally with four operator-specific factors: Product Development Strategy, concerning value proposition and value creation mechanisms; Sales & Marketing Strategy and Servicing & Implementation Strategy, strongly related to the technological infrastructure for providing enabling services; and Value Creation Strategy, including revenue and profit generation as well as customer relationship issues. Moreover, the authors recognize four external factors that make up or directly impact an MNO business model: existing customer base, government policy and regulation, technological advancements and constraints, and relationship with other members of the value chain. The intriguing aspect in this business model conceptualization is the fact that it highlights components that are, at least theoretically, beyond the scope of the single firm. Moreover, it represents a working example of the business model construct adapted not to a single industry, but to a single type of player in an industry segment.

The study of MNO-centered mobile business models and value networks increased in popularity with the introduction of 3G mobile technologies, such as the Universal Mobile Telecommunications System adoption in Europe, in the early 2000s.\[15\] At the time, it was observed how the traditional 2G mobile telephony and basic dial-up Internet access value networks converged to form the 3G value network. The emergence of a new, complex value network involved the evolution from a linear, chained value-creating structure to another based on horizontal linkages and relationships. The 3G value network structure resulted from the convergence of mobile telephony, mobile data (including digital content and services) and Internet access, services, and digital content.\[34\] An important element introduced at the time was the enabler role, that is, firms that operate in the
middle area between equipment, applications, and services such as middleware, content, and application service providers (ASPs). Moreover, the activities of content and application development and provision become separated, which created opportunities for new business models: intermediaries and content/application aggregators. [38]

One of the most influential analysis of mobile value networks outside the limited scope of MNOs is that of Barnes, [36] which highlights not only key players, but also their roles and the technologies involved. In his analysis, Barnes argues that players in the mobile environment operate in two areas: services and infrastructure and content. To the services and infrastructure area, the following roles correspond: 1) mobile transport and transmission, where the main players are the telecommunications companies and network equipment vendors; 2) mobile services and delivery, involving players who provide and operate middleware infrastructure for supporting services like Internet connection, security, and payment; and 3) mobile interface and applications, which have the technology platform vendors, application developers, and mobile device vendors as main players. The content area includes the following roles: 1) content creation, with many possible players such as news agencies and entertainment companies (including players from outside the mobile arena, such as Internet-based firms); 2) content packaging, including activities of content edition, customization, and aggregation; and 3) market making, involving the promotion and sale of the content, where mobile portals (and, later, Internet portals) assume a central position.

Another useful description of the actors in the mobile business value network was proposed by Camponovo and Pigneur. [37] These authors see the mobile value network comprised by primary and secondary players in five areas: technology, services, communication, regulation, and user. Technology players include device manufacturers and network equipment vendors as primary players, and device retailers, component makers, and platform vendors as secondary players. The services area includes application and content providers as primary players and payment agents, security solution providers, trusted third parties, advertising companies, and professional service providers as secondary players. MNOs and Internet service providers are considered primary communication players, while virtual operators and infrastructure management service providers are classified as secondary communication players. Finally, regulation players include governments, regulation authorities, and standardization groups, while players in the user area are further divided into businesses and consumer users; business users include firms operating in sectors where mobility is especially relevant, such as logistics or tourism, while consumer users include all individual customers of mobile products and services.

Furthermore, Camponovo and Pigneur performed a complete analysis of these players’ business models according to value proposition, target customers, core activities, business partners, and revenue flows, and provided some examples for each player category.

Another illustrative view of the mobile business value network is that of Pagias et al. [38] The authors provide a process view of the value network that highlights five key components: infrastructure, operator/carrier, content, application, and portal. Actors and roles include device manufacturers and vendors, network service providers, software developers, system integrators, and Wireless ASPs in the infrastructure component; network operators and resellers in the operator/carrier component; information providers, aggregators, and distributors in the content component; developers for advertisement, entertainment, news, financial services, information, payments and security solutions in the application component; and content aggregators, horizontal portals, and vertical portals in the portal component. The authors stress that network operators not only dominate the key positions in the chain thanks to their ability to establish direct contact with the customer, but also highlight the challenges they face given the mobile–Internet convergence trend.

One of the few mobile business model propositions not limited to MNOs is that of Methlie and Pedersen. [39] The authors propose a business model construct for mobile services composed of three dimensions: revenue model, governance form, and service strategy. The service strategy dimension has two parameters: service value proposition, which can aim at mobility-specificity (uniqueness) or proposition breadth (scope), and market focus, where the choice is between the traditional focused or undifferentiated options. The governance form dimension describes how flows of information, resources, and goods are controlled by the parties involved: market-based governance, relational governance (implying open access to essential resources), and hierarchy (where access to the essential resources is closed or regulated by the operator). Finally, the revenue model dimension allows the choice between content-based versus transport-based revenue models.

By focusing on the central concepts of control (governance) and value within a business model, Ballon proposed a design and analysis framework to model control and value proposition in business models related to innovative ICT products and services, which is especially adequate to the telecommunications industry. His four domains of business modeling correspond more or less to the four typical business model dimensions highlighted before: the value network (actors, roles, and relationships at the market level, that is, value delivery), the functional model (technical components, that is, value creation), the financial model (costs and revenues, akin to the value appropriation dimension), and the
value proposition (characteristics of the offering). Each of these four domains is further detailed into three design parameters, and usual generic trade-offs for each parameter are suggested. Six of those, related to value network and functional architecture domains, are called control parameters, while the remaining six are referred to as value parameters.

For the value network domain, the parameters are: 1) combination of assets, relating to the hierarchies between actors, where the trade-off is between essential resources concentrated on or spread among multiple actors; 2) vertical integration, which details the way roles are assumed by the actors and whose values are either integrated or disintegrated; and 3) customer ownership, a parameter that explains the manner in which producing actors relate to consuming actors and whose possible trade-offs include intermediated versus direct customer ownership.

The functional model domain parameters are: 1) modularity of the design of systems, referring to their capability to operate as separate discrete and independent modules, which can be either modular or integrated; 2) distribution of intelligence, referring to the extent of distribution of processing power and functionality control among the architectures of systems, either centralized or distributed; and 3) interoperability, relating to the capability of system to function and exchange information with other systems and assuming either interoperable or stand-alone, or open versus proprietary solutions.

For the financial domain, the parameters are: 1) cost sharing model, where the trade-off is between concentrated versus distributed investments; 2) revenue model, whose value choices are mostly dependent on the application domain, but usually include the trade-offs between direct (consumer) and indirect (advertise) revenue or between content-based and transport-based revenue; and 3) revenue sharing model, relating to the presence or not of revenue sharing agreements between players.

For the value proposition domain, the parameters are: 1) positioning, referring to market choices on branding, segmentation, competition, and product or service attributes, where the main trade-off proposed is between complementary and substitutive products; 2) customer involvement, assumed as high, or intensive, versus low; and 3) intended value, referring to the strategies to achieve optimal value, usually one among operational excellence (price), product leadership (quality), and customer intimacy (lock-in).

Contemporary research on mobile value networks goes beyond listing actors and mapping their roles and relationships. Basole[41] maps the complexity of the multiple actors and relationships in the mobile ecosystem, drawing a network of nearly 7000 companies and over 18,000 relationships. In the context of business models for the provision of mobile services, de Reuver et al.[42][2] show how organizational issues such as partner selection, network openness, orchestration of activities, management of relationship with partners, and outsourcing directly impact the division of roles among value network members. Similarly, they show how financial design issues such as pricing and division of investments, costs, and revenues affect acceptable risks, and how these two factors mediate profitability. Pagani and Fine[43] also propose a value network approach to study the mobile ecosystem, but concentrate on the changes brought by the diffusion of 3G technology. Using value network analysis, they map the driving forces involved in user adoption of innovative mobile services that make use of 3G technology and suggest guidelines for potential evolutionary scenarios for that industry. In a case study about the Japanese MNO market, Funk[44] also highlights the changes from value chain to value network perspective and argues that till date the mobile industry was largely represented by only two main value chains: that of the MNO and that of the device manufacturers. With the emergence of the mobile Internet, the mobile environment has become highly dynamic and integrated with other business environments. This has impacted almost all business models in that. Finally, the author discusses the impacts of changing from a value chain to a value network perspective on issues like standard setting, policy making, and firm management. Not long ago, the diffusion of smartphones—with the consequent consolidation of mobile platform ecosystems and mobile application stores—has renewed the interest in the study of mobile value networks.[45,46]

In summary, it can be apprehended that both business models and value networks are valuable constructs to analyze the telecommunications industry, with all the technological, competitive, and regulatory changes that have characterized it till date. The business model construct is flexible enough that it can accommodate different perspectives, depending on the aims of each particular study. Similarly, the value network allows analysts to depict with precision the myriad of roles, players, relationships, and flows that characterize the contemporary landscape of telecommunication business. Taken together, these two concepts make up the basic toolbox of business researchers who wish to explore the telecommunications industry.

**BUSINESS MODELS AND VALUE NETWORKS: AN INTERPRETATIVE FRAMEWORK**

Following the review on business models and value networks and the discussion on the application of these concepts to the telecommunications industry, a summary conceptual model for jointly addressing both concepts is proposed. It considers the following definition of a
business model: a unit of analysis, in the form of an architectural system-wide logic comprising both the focal firm and its external stakeholders which translates the overall focal firm strategy into operational definitions focused on creating and delivering customer value and appropriate part of this value as revenues. This conceptual understanding is grounded in the theories of industrial organization, value chain, resource-based view, transaction costs economy, and industrial networks and is operationalized through five dimensions:

a. value proposition dimension, meaning the products and/or services offered and the logic through which these products and services create value for a specific target customer, including client selection, segmentation, and acquisition strategies;

b. value creation dimension, which describes the internal and external elements that determine how the value proposition is created and how it allows a unique strategic approach to the market, including key resources, processes, technologies, capabilities, and relationships;

c. value delivery dimension, which refers to how the business is articulated (internally and externally) in order to make the value proposition reach the target markets. It includes information and distribution channels as well as customer relationship;

d. value appropriation dimension, relative to how the business captures part of the value created and generates profit, including the parameters of revenue streams, revenue sharing mechanisms, investment model, and cost model; and

e. value network positioning, which describes how the elements and activities performed in the four previous dimensions are distributed among the focal firm and external partners, as well as the governance mechanisms that characterize the value network.

It is worth noticing that our proposed integrative framework purposely omits a strategy-related dimension because, in line with the existing dominant view in strategic literature, it considers business models as tools to select and implement strategy.[15] In other words, business models are a lower-level construct in comparison to firm strategy. Thus, a single strategy can be translated into different business models. In this view, the process of business model design and innovation becomes part of the strategy-making process. In rapidly changing environments, like that of the telecommunications industry, this process becomes extremely important in order to quickly sense and respond to disruptive change. Thus, such an integrative framework can be used to investigate the multiple, complex interrelationships between its constituting elements and the drivers of change both from the external environment and from the internal strategic actions. An example of the application of this framework to analyze change and consequent business model response in the mobile telecommunication industry can be found in Ghezzi et al.[4]

CONCLUSION

In this entry, the popular concepts of business models and value networks were presented through a brief literature review discussing the state-of-the-art and promising research streams, like business model innovation. Moreover, the application of these concepts to the study of the telecommunications industry, with special emphasis on the mobile communications segment, was described. Finally, an interpretative framework that integrates both constructs was proposed; this framework can be applied to the strategic analysis of and corporate-level decision making in the telecommunications industry.

REFERENCES


