



Developing a unified framework of the business model concept

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Abstract

Recent rapid advances in Information and Communication Technologies (ICTs) have highlighted the rising importance of the Business Model (BM) concept in the field of Information Systems (IS). Despite agreement on its importance to an organization's success, the concept is still fuzzy and vague, and there is little consensus regarding its compositional facets. Identifying the fundamental concepts, modeling principles, practical functions, and reach of the BM relevant to IS and other business concepts is by no means complete. This paper, following a comprehensive review of the literature, principally employs the content analysis method and utilizes a deductive reasoning approach to provide a hierarchical taxonomy of the BM concepts from which to develop a more comprehensive framework. This framework comprises four fundamental aspects. First, it identifies four primary BM dimensions along with their constituent elements forming a complete ontological structure of the concept. Second, it cohesively organizes the BM modeling principles, that is, guidelines and features. Third, it explains the reach of the concept showing its interactions and intersections with strategy, business processes, and IS so as to place the BM within the world of digital business. Finally, the framework explores three major functions of BMs within digital organizations to shed light on the practical significance of the concept. Hence, this paper links the BM facets in a novel manner offering an intact definition. In doing so, this paper provides a unified conceptual framework for the BM concept that we argue is comprehensive and appropriate to the complex nature of businesses today. This leads to fruitful implications for theory and practice and also enables us to suggest a research agenda using our conceptual framework.

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Introduction

The Business Model (BM) is fundamental to any organization (Magretta, 2002). This is because BMs provide powerful ways to understand, analyze, communicate, and manage strategic-oriented choices (Pateli & Giaglis, 2004; Osterwalder *et al.*, 2005; Shafer *et al.*, 2005) among business and technology stakeholders (Gordijn & Akkermans, 2001). The concept is also of importance as it informs the design of information systems (IS) supporting the BM of an organization (Eriksson & Penker, 2000). Consequently, no one organization can afford 'fuzzy thinking' about this concept (Magretta, 2002).

Having realized the high significance of the BM, there has been an increasing interest (from the time when business modeling had risen to prominence by the end of 1990s with the growth of hi-tech businesses up

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to now) in delineating the concept and providing further understanding. For example, some attempt to define the concept (Timmers, 1998; Osterwalder *et al.*, 2005; Shafer *et al.*, 2005; Al-Debei *et al.*, 2008a), others understand its relationships with IS (Hedman & Kalling, 2003), and other business concepts, such as corporate strategy (Mansfield & Fourie, 2004), and business process modeling (Gordijn *et al.*, 2000), and yet others to identify its constituent elements (Mahadevan, 2000; Gordijn & Akkermans, 2001; Chesbrough & Rosenbloom, 2002; Pateli & Giaglis, 2003).

Researchers have also looked at the BM concept in the context of different domains. The majority of research into BMs in the IS field has been concerned with eBusiness and eCommerce, and there have been some attempts to develop convenient classification schemas. For example, definitions, components, and classifications into eBusiness models have been suggested (Alt & Zimmermann, 2001; Afuah & Tucci, 2003). Some researchers have applied the BM concept in the domains of business management and strategy (Linder & Cantrell, 2000; Magretta, 2002), the telecom sector including mobile technology along with its services (Bouwman *et al.*, 2008; Al-Debei & Fitzgerald, 2010), software industry (Rajala & Westerlund, 2007), and eGovernment (Janssen *et al.*, 2008).

However, although the concept is instinctively appealing and promises to 'fill a niche' (Hawkins, 2004), the IS-related literature reveals a clear lack of consensus regarding its underpinnings. To date, the BM concept is still considered an ill-defined 'buzzword' (Seddon *et al.*, 2004; Seppänen & Mäkinen, 2007). Porter (2001) suggests that the BM concept is 'murky' at best. Some other researchers argue that the concept is underdeveloped (Magretta, 2002; Chesbrough & Rosenbloom, 2002). In addition, the BM concept has sometimes been misperceived as a substitute of corporate strategy, business process, or business case. This murkiness could be because of the following three main reasons:

- (1) The youthfulness of the BM concept and its associated research; the BM concept has only recently appeared frequently in scholarly reviewed journals (see Osterwalder *et al.*, 2005).
- (2) The fact that it comes from diverse disciplines such as eBusiness and eCommerce, IS, strategy, business management, economics, and technology (Pateli & Giaglis, 2004; Shafer *et al.*, 2005).
- (3) The newness of sectors within which the BM concept is being investigated. A particular case in point concerns new technological ventures such as telecommunication providers along with their products and services.

Nevertheless, the authors appreciate the vital role that the BM can play in today's complex and turbulent environment. Hence, this paper is motivated by the need for a comprehensive, generic, sound, and tight conceptual framework to the BM concept in the IS domain. This

is pertinent now as there is little consensus on the essential BM attributes and aspects (Morris *et al.*, 2005). The BM domain knowledge is *fragmented*, indeed, the concept is rarely clarified explicitly (Chesbrough & Rosenbloom, 2002). Such clarification is therefore required to unify the different points of view into one comprehensive framework providing a common understanding, language, and labeling in order to leverage our communication in this context and our utilization of the concept.

The remainder of this paper is structured as follows. In the next section, the research aims and the employed research method are described. Next, we highlight and analyze the different viewpoints of authors within the IS field researching into BMs and a table is constructed showing the different views. We then present the synthesized conceptual framework showing and discussing the BM compositional facets which we hope will lead to a consensus. In this section, we discuss the four main concepts and values of the concept along with their building blocks and their interactions which positions the BM within the organization. We also demonstrate the reach and the major modeling principles of BMs. To establish its practical relevance, we identify three main functions of the BM concept in digital business. Before presenting the conclusions, the paper provides implications for theory and practice and suggests future avenues of research which are necessary to continue to refine this important area of research.

Research aims and methods

The main aim of this paper is to provide a cohesive understanding of the BM concept; that is supplying a solid and complete foundation for researchers and practitioners. This includes those looking forward to utilizing the concept in their practices and applications. To this aim, the paper analyzes and synthesizes the different viewpoints relating to the BM concept in a conceptual framework. Aiming to work as a unified model, this paper seeks to provide simple, but tight and comprehensive answers relating to the following fundamental issues:

- (1) The dimensions and elements of the BM concept, that is, what constitutes BMs, or what aspects need examining when designing, evaluating, and managing BMs.
- (2) The modeling principles of BMs, that is, what guidelines organizations need to draw upon when modeling their BMs, what is characteristic in BMs, and what features are included.
- (3) The reach of the BM concept, that is, the positioning of the BM concept within organizations, and what sort of relations exist between the BM concept and other related notions such as strategy, business process, and IS.
- (4) The functions of the BM concept (its rationale and practical roles), that is, why BMs are significant, why

companies should care about it, and what are the tasks that would be more effective when they are based on BMs.

As these facets of the BM are essential but their related knowledge is fragmented and somehow imprecise and incomplete, there is a need to integrate the existing views within the literature and analyze them to provide a unified framework that clarifies the concept. To do so, we primarily follow content analysis (Agar, 1980) as it enables researchers to include large amounts of textual data and then systematically mines, makes inferences, and identifies common shared properties concerning the phenomenon under investigation (Holsti, 1969; Krippendorff, 2004). Thus, content analysis is deemed appropriate in this research given that the data source is the existing body of literature that examines the BM concept in the digital business arena and thus the research data is in the 'text' format.

Essentially, 'there is no simple right way to do content analysis' (Weber, 1990), and Stone *et al.* (1966) define it as 'any research technique for making inferences by systematically and objectively identifying specified characteristics within text'. In line with Stone's definition, Holsti (1969) defines content analysis as 'any technique for making inferences by objectively and systematically identifying specified characteristics of messages' that are in the form of text. For making systematic and objective inferences, Agar (1980) highlights the importance of data classification when employing content analysis. He also indicates that such a classification technique uses a form of content analysis where the data are read and categorized into concepts that are suggested by the data rather than imposed from outside (see also Orlikowski, 1993).

Retrospectively, the authors find it more useful to understand the BM concept by categorizing its current interpretations in the literature into a classification schema or a taxonomy that contains conceptually meaningful groups of objects that share common characteristics, that is, classes. Basically, taxonomy is a systemizing mechanism utilized to map any domain, system, or concept, as well as a conceptualizing tool relating its different constructs and elements. However, the terms 'taxonomy', 'classification', 'typology', and 'categorization' have been used interchangeably within the IS and computing disciplines as they all aim to provide a structured grouping of similar data (although strictly there are slight differences amongst these terms).

Generally speaking, classification methods are of value in satisfying the needs of understanding data and discovery concepts (Zhifang, 1988). Categorizing data based on their shared characteristics is highly useful since it represents the means by which the collected data transforms into more useful information, often called 'pre-knowledge'. Subsequently, this pre-knowledge can be analyzed to mine new, valuable knowledge. Furthermore, taxonomical or categorization methods provide

simplicity since they aim to reduce the complexity of dealing with many instances (Parsons & Wand, 2008). Parsons & Wand (2008) also agree that classifying an object supports deductions and inferences about its unobserved properties. In line with this, Clancey (1984) and Fisher & Yoo (1993) argue that classification techniques are useful means for guiding inference and for problem-solving purposes. Interestingly, all of these characteristics match the definitions of content analysis provided by Stone *et al.* (1966), Holsti (1969), and Agar (1980).

Content analysis approach

The employed content analysis approach uses the existing BM literature as its main source of data. In order to understand such a fuzzy concept, the authors find it more convenient to delineate the existing BM definitions within IS-related literature in a comprehensive and generic manner. Therefore, definitions are extracted from literature in IS, eCommerce, eBusiness, the technology and telecoms industry, and business management. The search process relies mostly on the use of electronic libraries (e.g. ScienceDirect, EBSCO, JSTOR, and ACM Digital Library), by means of keywords. The most effective keywords used included the word 'model' (in particular, BM and business modeling). The list of references within the extracted literature represents another valuable source of the targeted information. However, selecting the definitions chosen depended on 'heuristic evaluation measures', and 22 definitions are deliberately selected using the following criteria:

- (1) Creation of a comprehensive pool (database) of definitions in terms of anticipated knowledge covering all the perspectives and standpoints from which the BM has been perceived and assessed.
- (2) Quality Assurance, in terms of content, number of citations, and publication source.
- (3) Coverage of an inclusive time frame; from 1998 to 2008. As we established earlier, the BM concept had risen to prominence by the end of 1990s and the first recognizable articles on the concept were published in 1998 (e.g. Timmers, 1998).

Having the content identified – the 22 selected definitions – we start analyzing them thematically. The coding is done by assigning 'indicators', 'indexes', or 'keywords' to each extracted definition based on the main 'themes' of each. This is presented in Table 1, in the 'Thematic indicators' column. Consequently, based on these indicators, the process of aggregating definitions into individual classes was triggered. The classification technique used in this paper could be depicted as a 'non-predefined' or 'unsupervised' technique (as with grounded theory and unsupervised conceptual clustering), since no one can know the ensuing classes prior to the process. In other words, discovering a category structure in initially unclassified data represents an unsupervised task (Fisher & Yoo, 1993). With hindsight

Table 1 Selected scholarly descriptions of the Business Model concept

Authors	BM descriptions	Thematic indicators
Timmers (1998, p. 4)	An architecture for products, services and information flows, including a description of various business actors and their roles; a description of the potential benefits for the various business actors; and a description of sources of revenues.	Architecture, Value Proposition, Business actors and roles, Revenue sources.
Venkatraman & Henderson (1998, pp. 33–34)	A strategy that reflects the architecture of a virtual organization along three main vectors: customer interaction, asset configuration, and knowledge leverage.	Architecture, Organization strategy, Customers, Asset configuration, Knowledge leverage.
Linder & Cantrell (2000, pp. 1–2)	The organization's core logic for creating value. The business model for a profit-oriented enterprise explains how it makes money.	Business logic, Value Capture, Revenue sources.
Gordijn <i>et al.</i> (2000, p. 41)	A BM answers the question: 'who is offering what to whom and expects what in return?' A BM explains the creation and addition of value in a multi-party stakeholder network, as well as the exchange of value between stakeholders.	Value proposition /exchange, Stakeholder network.
Petrovic <i>et al.</i> (2001, p. 2)	A business model describes the logic of a 'business system' for creating value that lies beneath the actual processes.	Business logic, Value proposition, Intermediate theoretical layer.
Amit & Zott (2001, p. 4)	A business model depicts the design of transaction content, structure, and governance so as to create value through the exploitation of new business opportunities.	Value proposition, Structure, Governance.
Torbay <i>et al.</i> (2001, p. 3)	The organization's architecture and its network of partners for creating, marketing, and delivering value and relationship capital to one or several segments of customers in order to generate profitable and sustainable revenue streams.	Value proposition, Architecture, Network of partners, Relationship capital, Customer segments, Revenue.
Stähler (2002, Online, p. 6)	A model of an existing business or a planned future business. A model is always a simplification of the complex reality. It helps to understand the fundamentals of a business or to plan how a future business should look.	Abstract, Simplification of current and future business reality.
Chesbrough & Rosenbloom (2002, p. 532)	The business model provides a coherent framework that takes technological characteristics and potentials as inputs, and converts them through customers and markets into economic inputs. The business model is thus conceived as a focusing device that mediates between technology development and economic value creation.	Coherent framework, Mediating construct, Technology, Economic Value.
Magretta (2002, p. 4)	The business model tells a logical story explaining who your customers are, what they value, and how you will make money in providing them that value.	Value proposition, Customers, Revenue sources.
Bouwman (2002, p. 3)	A description of roles and relationships of a company, its customers, partners and suppliers, as well as the flows of goods, information and money between these parties and the main benefits for those involved, in particular, but not exclusively the customer.	Roles and relationships: company, customer, partners, Value proposition, Revenue.
Hedman & Kalling (2003, pp. 49, 52–53)	Business model is a term often used to describe the key components of a given business. That is customers, competitors, offering, activities and organization, resources, supply of factors and production inputs as well as longitudinal process components to cover the dynamics of the business model over time.	Key business components, Resources, Customers, Value proposition, Network, Architecture, Structure, Dynamic.

Campanovo & Pigneur (2003, p. 4)	A detailed conceptualization of an enterprise's strategy at an abstract level, which serves as a base for the implementation of business processes.	Conceptual, Intermediate theoretical layer.
Leem <i>et al.</i> (2004, p. 78)	A set of strategies for corporate establishment and management including a revenue model, high-level business processes, and alliances.	Strategy, Revenue, Alliances.
Shafer <i>et al.</i> (2005, p. 202)	A representation of a firm's underlying logic and strategic choices for creating and capturing value within a value network.	Business logic, Strategy, Value proposition, Value network.
Osterwalder <i>et al.</i> (2005, pp. 17-18)	A conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value relationship capital, to generate profitable and sustainable revenue streams.	Conceptual tool, Business logic, Value proposition, Customer segments, Architecture, Network of partners, Revenue.
Haaker <i>et al.</i> (2006, p. 646)	A blueprint collaborative effort of multiple companies to offer a joint proposition to their consumers.	Blueprint, Network of firms, Customers, Value proposition.
Andersson <i>et al.</i> (2006, pp. 1-2)	Business models are created in order to make clear who the business actors are in a business case and how to make their relations explicit. Relations in a business model are formulated in terms of values exchanged between the actors.	Business actors and relations, Value exchange.
Kallio <i>et al.</i> (2006, pp. 282-283)	The means by which a firm is able to create value by coordinating the flow of information, goods and services among the various industry participants it comes in contact with including customers, partners within the value chain, competitors and the government.	Value proposition: information/goods/services, Industry participants: customers/partners/competitors/government.
Rajala & Westerlund (2007, p. 118)	The ways of creating value for customers and the way in which a business turns market opportunities into profit through sets of actors, activities, and collaborations.	Value proposition, Set of actors, Revenue.
Janssen <i>et al.</i> (2008, p. 204)	A business model reflects the core business of an organization and is useful to describe (and even prescribe) the organization from the perspective of its main mission, and the products and services that it provides to its customers.	Business logic, Value proposition, Customers; Current or future business.
Rappa (2008, Online)	A method of doing business by which a company can sustain itself, that is, generate revenue. The business model spells out how a company makes money by specifying where it is positioned in the value chain.	Revenue sources, Position in the value chain.

and while we aim to let the BM classes and concepts emerge from the data, our application of content analysis is similar to the way it is used in grounded theory (see Glaser & Strauss, 1967). Nevertheless, instead of collecting data empirically from the research site, the data used in this research is gathered from relevant literature.

Parsons & Wand (2008, p. 839) argue that 'classification holds that classes do not exist independently, but are constructed as useful abstractions of the similarities of the classified phenomena'. Therefore, we used an *evaluation function* to discover clusters or classes and definitions were clustered into the same class only if they satisfy the following three conditions:

- (1) They are thematically similar to each other, that is, they communicate same or very similar semantics and ideas about the concept.
- (2) They have contextual relationships that complement each other, thus they become more useful if clustered.
- (3) The clustered definitions as a whole articulate a unique compositional aspect of the BM concept.

The outcome of this analytical course of action is a taxonomy which encompasses 13 unique (i.e. mutually exclusive) individual classes related to different aspects of the concept (i.e. dimensions and elements, modeling principles, reach, and functions). Subsequently, to group classes sharing common characteristics with each other, we employed a *bottom-up* approach in which the 13 classes have been classified into four compositional aspects of the BM concept, using the same principles and techniques mentioned previously (see the aforementioned evaluation framework; points 1–3). This represents a hierarchical classification schema (see Gordon, 1987) and we use a conceptual tree that describes how the classes are related for understanding and communication reasons. However, we assign conceptual metaphors to each class within the taxonomy that we believe to be both clear and understandable to ensure the quality of the taxonomy provided (see Michalski & Stepp, 1983).

Within the content analysis, this paper follows a *deduction reasoning* method utilizing the collected data and information as guidelines to synthesize the BM knowledge into a generic and comprehensive, but concise BM definition. According to Johnson-Laird (1999), 'reasoning is a process of thought that yields a conclusion from percepts, thoughts, or assertions' (p. 110), and that reasoning is deductive when considering that the truth of the premises positively establishes the truth of the conclusion. Hence, the employed reasoning approach here is deductive as we believe that the truth of premises in the literature leads to the truth of the developed definition of the BM concept. The deduction technique is useful for our purpose as we follow a process of reasoning (arguing) to infer a general definition of the concept based on individual cases and examples including bits of evidence and other rules of inference. In particular, within the employed deductive reasoning approach, we follow a systematic incremental methodology in which

BM definition is rapidly updated as it reacts to each new stimulus and we work out a definition for the BM using the following three rules of inference: (1) the definition should be comprehensive and general; (2) it is not sufficient to define the BM only in terms of its components; and (3) the definition should synthesize the different points of view presented in earlier research.

Grounding of the unified framework: the BM underpinnings

The digital era has meant that the availability of appropriate levels of information and knowledge have become critical to the success of the business. Organizations need to adapt in order to survive and succeed as their business domains, processes, and technologies change in a world of increasing environmental complexity. Enhancing their competitive positions by improving their ability to respond quickly to rapid environmental changes with high quality business decisions can be supported by adopting suitable BMs for this new world of digital business.

However, the BM concept is still seen to be unclear, and researchers in this area have depicted the BM from different perspectives. Most often, researchers only consider one or a few pieces of the whole. Each definition exemplifies only one or at most a few branches of the entire narrative without considering the research in other related fields (Pateli & Giaglis, 2004). In other words, researchers in this field are seeing different aspects of the BM by gazing through different lenses (Shafer *et al.*, 2005).

This section provides a first level of clarity by chronologically presenting and examining a classification of 22 selected scholarly definitions of the BM concept (Table 1), covering the years 1998–2008. The content of the 'Thematic indicators' column represents initial indicators used for building up the conceptual framework presented in the next section.

Unsurprisingly, the applied analysis over the existing BM definitions within the literature illustrates the lack of consensus regarding the BM theoretical foundations (Chesbrough & Rosenbloom, 2002; Magretta, 2002; Morris *et al.*, 2005; Kallio *et al.*, 2006). It is more obvious now that the IS-related literature contains a wide variety of different views regarding the BM concept. The authors agree with Linder & Cantrell (2000) that researchers mean different things when they write about BMs. To give just a few examples, for Hedman & Kalling (2003) the BM concept is used to describe the key components of a given business, while for Rappa (2008) it is the method of doing business in which a company generates revenue. Venkatraman & Henderson (1998) on the other hand depict the concept as a strategy reflecting the architecture of virtual organizations, and Janssen *et al.* (2008) understand the BM as a way of describing an organization from its mission perspective as well as the products-services it offers to customers. Another example is that of Andersson

et al. (2006) who describe the BM as a mechanism that makes the business actors' relations more explicit.

Another notable issue is that some researchers have described the BM only through its components or even on one or some of its components. For example, Timmers (1998) considers products-services architecture as well as actors and their roles and benefits in addition to sources of revenue as the BM primary constructs. Magretta (2002) puts emphasis on customers, value elements, and revenues as the main components of BMs, while the BM elements for Bouwman (2002) are actors (customers, partners, and suppliers) and their roles, relationships, and flows-communications.

The applied analysis also reveals that the other BM fundamental details concerning modeling principles, reach, and functions are somehow available within the literature, but indirectly, incompletely, fragmentally, and sometimes lacking a consensus. To give just a few examples, Stähler (2002) characterizes the BM as *abstract* in a sense that it provides a simplification of current or future business reality. Similarly, Campanovo & Pigneur (2003) typify it as *conceptual tool*, and Haaker *et al.* (2006) symbolize it as a *blueprint*. Moreover, Hedman & Kalling (2003) demonstrate the BM as *dynamic*, appreciating the turbulent nature of businesses today.

Nonetheless, the views diverge on the reach of the BM concept. For example, Leem *et al.* (2004) define the BM as a strategy, while Petrovic *et al.* (2001) perceive it as an intermediate layer between strategy and business processes. The latter view however highlights the 'alignment role' of the BM concept. The view of Chesbrough & Rosenbloom (2002) exemplifies another role of the concept as a 'coherent mediating framework' between technological artifacts and the achievement of economic values.

With hindsight, it is more evident now that knowledge about the BM is disjointed and unclear. All of these issues maintain, and probably add to, the blurred view held of the BM and keep the BM-related knowledge fragmented. This suggests that the domain is fuzzy and vague and still in its conceptualization phase, despite its perceived significance. We consolidate and classify these views, and we present a hierarchical taxonomy in the next section which organizes these different perspectives.

The synthesized conceptual framework

The use of content analysis over the extracted definitions and descriptions of the BM concept facilitates the construction of a taxonomy that classifies the different points of view into 13 mutually exclusive classes or 'clusters' briefly described in Table 2. The deduced 13 classes complement each other and can be considered constituent elements (i.e. subclasses) of a higher level of ontological abstraction. The conducted analysis in this paper suggests *V⁴BM Dimensions* (i.e. the four value dimensions of BMs), *Modeling Principles*, *BM Reach*, and *BM Functions* as four *upper classes* fitting to encapsulate the original 13 classes that have emerged from the collected

data (see Table 2). This hierarchical taxonomy of the BM defines the concept comprehensively. It not only highlights the major facets and aspects related to the concept, but also it reveals their important inter-relationships (see Figure 1).

As exemplified in Table 2, the first four classes – value proposition, value architecture, value network, and value finance – represent the primary constructs and dimensions of the BM concept. The terminology used signifies that these fundamental dimensions are value-based. This is to indicate that only *core arrangements* are delineated within these four dimensions. Each aims to provide the market with *desired values* through the provision of services and products so as to capture *economic values* in return.

The principles those guide the modeling of BMs are also included within the taxonomy. The applied analysis reveals that the BM is a conceptual coherent framework that provides a holistic but abstract understanding of the underlying business logic of an organization. The BM is also dynamic and could be utilized at different levels and for varied purposes within organizations.

As for the reach of the BM concept, the conducted analysis indicates that the BM is an intermediate layer between business strategy and business processes including their supportive IS. Hence, the BM is not a substitute for the corporate strategy but does sustain it as the concept's configurations are strategically oriented. The BM also encompasses information helpful in translating strategic objectives into implementation tasks and functions.

Concerning the practical roles of the concept, the applied analysis suggests that the BM can be usefully employed as a conceptual tool of alignment, a mediating construct between technology and the attainment of goals and other values, and finally as knowledge capital useful in supporting decision-making functions. A more detailed discussion and analysis of the identified BM facets are provided in the following four subsections.

The ontological structure of the BM concept: V⁴ BM dimensions

The ontological structure of the BM is important as it explains the primary components of the concept. Hence, this section describes the main elements to be examined when designing, analyzing, and evaluating BMs.

The BM has been described as a way in which organizations create value (Amit & Zott, 2001; Kallio *et al.*, 2006) with two different approaches for the value proposition:

- (1) The ways in which an organization along with its suppliers and partners (business actors) create value for its customers (Magretta, 2002; Osterwalder *et al.*, 2005; Rajala & Westerlund, 2007).
- (2) The ways in which an organization along with its stakeholders create value for each party involved (Stähler, 2002; Andersson *et al.*, 2006).

Table 2 A hierarchical taxonomy of the Business Model concept

BM facets	BM classes	Brief description	Representative literature
V ⁴ BM dimensions	(1) Value proposition	A way that demonstrates the business logic of creating value for customers and/or to each party involved through offering products and services that satisfy the needs of their target segments.	Amit & Zott (2001), Petrovic <i>et al.</i> (2001), Magretta (2002), Osterwalder <i>et al.</i> (2005).
	(2) Value architecture	An architecture for the organization including its technological architecture and organizational infrastructure that allows the provisioning of products and services in addition to information flows.	Timmers (1998), Venkatraman & Henderson (1998).
	(3) Value network	A way in which an organization enables transactions through coordination and collaboration among parties and multiple companies.	Amit & Zott (2001), Gordijn & Akkermans (2001), Bouwman (2002).
	(4) Value finance	A way in which organizations manage issues related to costing, pricing, and revenue breakdown to sustain and improve its creation of revenue.	Timmers (1998), Linder & Cantrell (2000), Rappa (2008).
Modeling principles	(5) Conceptual	A conceptual tool, an abstraction and a blueprint of the existing business and/or the future planned business.	Stähler (2002), Osterwalder <i>et al.</i> (2005), Haaker <i>et al.</i> (2006).
	(6) Multi-level	A way of designing, analyzing and evaluating different units or levels within organizations such as products and services, business unit, an organization, or even a network of organizations.	Magretta (2002), Kallio <i>et al.</i> (2006), Al-Debei <i>et al.</i> (2008a, b), Bouwman <i>et al.</i> (2008).
	(7) Dynamic	A dynamic concept as the BM configurations and design change over time reflecting internal and external variations.	Hedman & Kalling (2003), Machnes (2005), Al-Debei <i>et al.</i> (2008a).
	(8) Granular	A grainy controllable way of designing and evaluating business as the concept is subdivided into manageable elements.	Gordijn & Akkermans (2001), Osterwalder <i>et al.</i> (2005), Shafer <i>et al.</i> (2005).
	(9) Coherent	A comprehensive way of depicting a particular business entirely taking into consideration the interlinks between its different aspects.	Chesbrough & Rosenbloom (2002), Al-Debei & Fitzgerald (2010).
BM reach	(10) Intermediate layer	An interface or a theoretical intermediate layer between the business strategy and the ICT-enabled business processes. Nevertheless, it intersects with both: strategy and ICT-enabled business processes. The BM intersection with strategy represents a set of organization's strategic-oriented choices for business establishment and management, while its intersection with processes signifies a set of business implementation practices and functions.	Leem <i>et al.</i> (2004), Morris <i>et al.</i> (2005), Shafer <i>et al.</i> (2005), Kallio <i>et al.</i> (2006), Rajala & Westerlund (2007), Al-Debei <i>et al.</i> (2008a).
BM Functions	(11) Alignment instrument	A theoretical tool of alignment providing a crucial instrument (i.e. bridge) for improving harmonization and consistency among strategy and business process including their supportive information systems.	Campanovo & Pigneur (2003), Osterwalder <i>et al.</i> (2005), Al-Debei <i>et al.</i> (2008a).
	(12) Interceding framework	A mediating construct or framework that connects technological potentials and innovations with the realization of economic value and the achievement of strategic outcomes.	Chesbrough & Rosenbloom (2002), Kamoun (2008), Al-Debei & Fitzgerald (2010).
	(13) Knowledge capital	An intangible and tactical information/knowledge asset useful in supporting strategic decision-making functions, and thus valuable in providing the organization with an enduring competitive advantage.	Venkatraman & Henderson (1998), Al-Debei <i>et al.</i> (2008a, b).

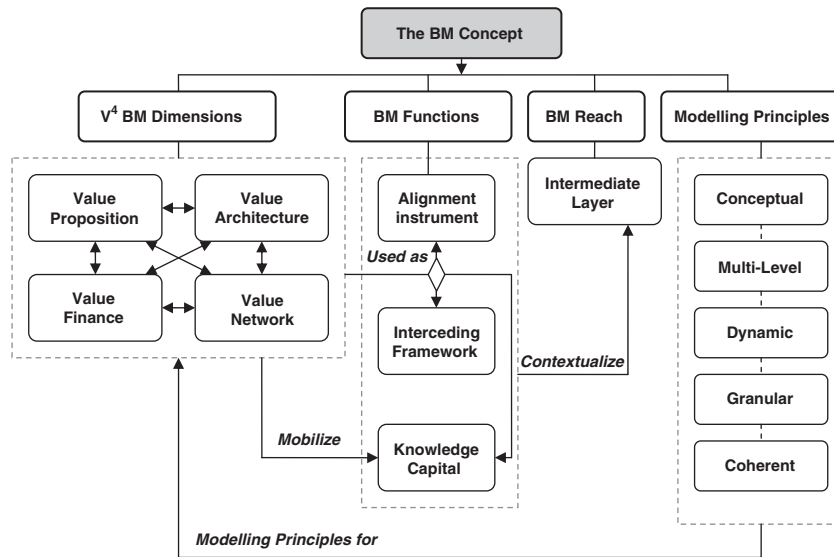


Figure 1 A unified BM conceptual framework.

This view highlights the *value proposition* dimension (Magretta, 2002; Hedman & Kalling, 2003) of the BM concept. This dimension implies that a BM should include a description of the *products/services* a digital organization offers, or will offer, along with their related information. Furthermore, the BM needs also to describe the *value elements* incorporated within the offering, as well as the nature of *targeted market segment(s)* along with their preferences. Innovations relating to this particular dimension are of high concern to modern Information and Communication Technology (ICT) business organizations to attract and sustain a large proportion of customers.

Another view which places emphasis on the *value architecture* branch of the BM (Timmers, 1998; Torbay et al., 2001) portrays the concept as a holistic structural design of an organization, including its technological architecture, organizational infrastructure, and their configurations. This comprises tangible and intangible organizational assets, resources, and core competencies. The foundation of the value architecture construct is in the resource-based view (RBV). The RBV (Wernerfelt, 1984; Barney, 2001) assumes that each company is a bundle or resources. More specifically, RBV puts emphasis on the strategic importance of resources coupled with their integration with the generation of desirable value by customers and thus sustainable competitive advantage to the company possessing the resources.

In this context, Hedman & Kalling (2003) indicate that for any business organization to serve the market effectively it needs resources and inputs that could take human, physical, and organizational forms. They also argue that such resources need to be organized and configured in an appropriate manner that facilitates a competitive value proposition in the market. In fact, resource configuration demonstrates an organization's

capability to integrate the varied organizational and technological assets and resources in a way that allows efficient and effective roll-out of its products and services. The economic value of a digital business is determined by its ability to absorb ICT resources and align them along with the existing resources, and then diffuse them in activities which should be managed to create value propositions at lower cost and/or higher quality than rivals (see Hedman & Kalling, 2003). Therefore, we consider resource configuration as a key enabler of combinative capabilities which are important in creating rare, valuable, hardly imitable, and non-substitutable resources (Koruna, 2004). When capabilities or core competencies (see Hamel & Prahalad, 1990) arise because of the method in which resources are configured, they can be viewed as *repeatable patterns of action* in the use of assets and deployment of acquired resources to create and/or offer products and services to target segments (Osterwalder & Pigneur, 2002). Based on this discussion, we argue that BMs also need to represent an organization's *resources*, their *configurations*, and the resultant *core competencies* (Al-Debei & Fitzgerald, 2010).

The *value network* class represents the third position from which the BM concept has been examined. This construct depicts the *cross-company* or inter-organization perspective towards the concept and has gained much attention in the BM literature. Several researchers have described the concept as a way in which transactions are enabled through the coordination and collaboration among parties, multiple companies and stakeholders (Shafer et al., 2005; Andersson et al., 2006). According to this point of view, a BM is a description of the position of an organization in the value system (Rappa, 2008) and its *relationships* with different stakeholders. It also indicates the mode of collaboration in regards to the network, that is whether the value network is *open* in a

sense that any one can suggest and provide ideas, or is *closed* in a sense that ideas only come from selected actors (Pisano and Verganti, 2008). Moreover, this viewpoint perceives the BM as a way to demonstrate the *roles* of different actors more clearly, and to show explicitly how the value is *exchanged - flowed and communicated via channels* - among stakeholders (Gordijn *et al.*, 2000), as well as to explain which actor(s) is *governing* or being dominant (Amit & Zott, 2001; Haaker *et al.*, 2006) in the business network.

Interestingly, the term *actors* in the value network dimension has been used in a quite comprehensive mode. In its basic use, the term has been employed to depict different business organizational actors those involved in the main functions relating to the offering, such as value creation, marketing, and delivery (Timmers, 1998; Rajala & Westerlund, 2007). This includes suppliers, partners, marketers, distributors, and intermediaries. In a wider perspective, the term has been also used to include competitors (Hedman & Kalling, 2003) as well as public organizations such as governmental bodies and agencies (Kallio *et al.*, 2006). Given that all previously mentioned actors are some kind of organization, one can include all of them under one umbrella, that is 'organizational actors'. However, not only are organizations actors within the value network, but customers as well (Bouwman, 2002). Therefore, the value network could be best perceived and presented as a *multi-party stakeholder network* (Gordijn & Akkermans, 2001). However, this adds actors (organizational actors and customers), roles, relationships, channels, flows and communications, and governance as design concepts to be addressed within the BM.

Considering the primary dimensions of the concept, the last recognizable view is that a BM is a way in which organizations generate revenue (Linder & Cantrell, 2000; Rappa, 2008). The BM seems to be strongly connected with economic and financial designs within organizations. Whenever the concept is used, many people

assume that the user is going to address financial arrangements with respect to revenue generation. Nevertheless, we believe that the BM is more comprehensive and that value finance represents only one dimension of the whole narrative. However, being financially relevant indicates that the *value finance* dimension depicts information related to *costing, pricing methods, and revenue structure* (Osterwalder *et al.*, 2005; Shafer *et al.*, 2005) and concerns the other three dimensions and most particularly the value proposition arrangements. Hence, efficiency is most likely the main factor in this dimension.

Having identified the primary dimensions of a BM concept along with their constituent elements (see Figure 2 for a summary), it is important to highlight the fact that they are substantially interrelated and interdependent. Designing a BM requires a balance of different and often conflicting design requirements presented within the four dimensions and their building blocks. To give just an overview, based on an external environment scanning course of action, an organization could determine its targeted value customers as well as their wants and needs in relation to its offerings. An organization's products-services should match customers' preferences for superior performance (Kasper *et al.*, 1999). However, the characteristics of the provisioned products-services are highly correlated with the value architecture arrangements. On the other hand, the value architecture is dependent on the organization's internal resources as well as the resources it acquires from its value network. Value finance on the other hand is concerned with all needed financial arrangements regarding the other three dimensional arrangements.

Modeling principles of BMs: guidelines and features

After examining the ontological structure of the BM concept, we now address the principles that direct the modeling course of action of BMs. The ontological structure of the BM spells out the concept as a *coherent framework* given that it depicts the business logic

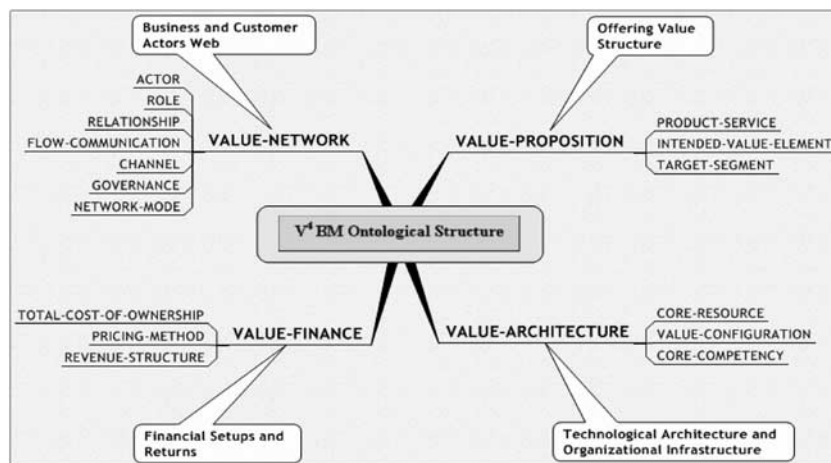


Figure 2 The V⁴ ontological structure of Business Models (Al-Debei & Fitzgerald, 2010).

comprehensively. The BM provides a holistic view (Chesbrough & Rosenbloom, 2002) of a particular business which is not only useful in understanding its internal structure and functions, but also in realizing how an organization is connected to its external environment and how it interacts with it.

Nevertheless, this depiction of business logic is *abstract* since the BM is a conceptual tool or a blueprint that covers only the key business components (Janssen *et al.*, 2008) and thus considered a simplification that reflects the business reality (Stähler, 2002). One of the inferences generated through the applied analysis demonstrates the BM as a *granular* concept in the sense that its components could be broken down into dimensions which could as well be subdivided into elements. Granularity in this context is highly significant given that the concept is comprehensive and covers a wide range of business aspects. It is also useful as it allows more focused designs of BMs.

The constructed taxonomy also reveals that the BM is a *versatile* concept. Enjoying this particular feature implies two main issues related to versatility. Firstly, it indicates that BMs could be utilized to understand the business logic at different levels: (a) individual organizations (e.g. Venkatraman & Henderson, 1998; Linder & Cantrell, 2000; Campanovo & Pigneur, 2003), or even (b) part of an organization such as business units, products/services, and product/service bundles (e.g. Timmers, 1998; Chesbrough & Rosenbloom, 2002), and (c) business networks that consists of more than one organization (e.g. Gordijn *et al.*, 2000; Torbay *et al.*, 2001; Haaker *et al.*, 2006). In its second sense, versatility specifies that the BM could be used for different purposes within organizations: (a) alignment instrument; (b) mediating construct; and (c) knowledge capital.

The modern ICT-based world of business imposes a vital need for BMs with high levels of adaptability to accommodate the ongoing changes more efficiently. Within today's business environment, the BM should

also be enjoying *dynamicity* in order to cope successfully with the continuous changes. Characterizing the BM as dynamic (Hedman & Kalling, 2003; MacInnes, 2005) is essential mainly because many industries nowadays, such as telecommunications, are undergoing continuing revolutions driven by innovative technologies, globalization including deregulations, and market changes. Indeed, the business environment has been greatly transformed. Unlike the traditional world of business which is characterized by stability and low levels of competition, the world of digital business is complex, dynamic and has high levels of uncertainty and competition (see Figure 3). Hence, in the more complex and sometimes unique digital business, the BM needs to be explicit and more flexible.

The reach of BMs: the positioning of the concept within organizations and its interlinks with strategy and ICT-enabled business processes

The reach of the BM concept is another aspect that has been tackled within the literature. Yet BM researchers are beginning to determine its boundaries, and relationships with IS and other business aspects, such as business processes and business strategy. There is already some consensus regarding the differences between the BM and the ICT-enabled process model (Gordijn *et al.*, 2000; Pateli & Giaglis, 2003; Morris *et al.*, 2005). Although the overall goal of conceptual modeling is to support decision-making activities (Gordijn *et al.*, 2000), business process modeling supports operational decisions, and the process of creating the BM provides support for strategic decision-making.

On the other hand, the debate on the difference between the BM and business *strategy* has not yet been resolved (Porter, 2001; Stähler, 2002; Pateli & Giaglis, 2004). Some researchers view them as identical and use the terms interchangeably. Leem *et al.* (2004) and Kallio *et al.* (2006), for example, depict BM components as a set

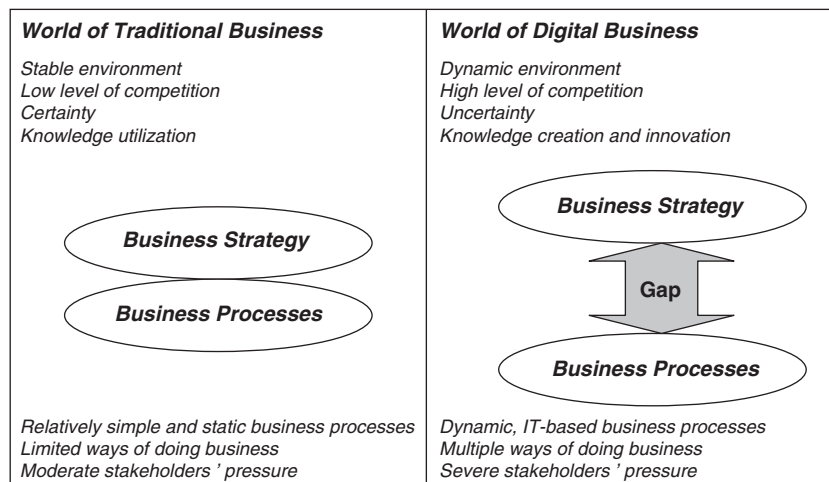


Figure 3 Comparison between the world of traditional and modern digital business.

of business strategies. Some researchers, mainly from the business discipline, argue explicitly that the BM is not a strategy, and yet they include the strategy and/or part(s) of its elements (e.g. mission, strategy, competitive strategy) within the BM components or vice versa (e.g. Chesbrough & Rosenbloom, 2002; Shafer *et al.*, 2005).

Other researchers suggest an alternative way of looking at the BM concept which we see as more helpful. They argue that even though both concepts are related, they represent different levels of information, useful for different purposes. They see the BM as an interface or an intermediate theoretical layer between the business strategy and the business processes including their IS (Morris *et al.*, 2005; Osterwalder *et al.*, 2005; Al-Debei *et al.*, 2008a). Magretta (2002) argues that the business strategy explains how business organizations hope to do better than their rivals, while the BM describes how the pieces of a business all fit together. However, the main reason behind this confusion in our context is the shift that the business world experienced from the traditional ways of doing business to the new ways of digital business, which feature a high level of complexity and rapid change. As illustrated in Figure 3, this transformation has created a gap between strategy and processes which calls for new ways of thinking about BMs.

Nonetheless, the BM is by no means independent; it intersects with the business strategy as well as the business processes including their supportive IS, as illustrated in Figure 4. Thus, it creates a unique strategic, operational, and technological mix. These intersections represent two crucial transitional points to be followed by business organizations.

- (1) *Business strategy to BM*: This is depicted by the first intersection point which represents the first transitional stage. According to Porter (1980), business strategy is a way by which a business organization positions itself within its industry through adopting one of the following generic strategies: cost leadership, differentiation, and focus. However, at

this stage, the business organization translates its broad strategy into more specific business architectural, co-operational, value propositional, and financial arrangements needed to achieve the strategic goals and objectives of the business. Moreover, the BM in the first intersection point is dependent on and derived from the business strategy.

- (2) *BM to business process model along with their IS*: This is the second transitional stage represented by the second intersection point. At this stage, the BM acts as the base system from which the detailed and operational business process model along with its IS should be derived. A business process is defined in terms of process elements (activities) whose united behavior allows the provision of a particular service (de Cesare *et al.*, 2003). IS, on the other hand, continuously emerge from the adaptive usage made by the users of Information Technology (IT) systems, in combination with processes so as to make businesses function (Paul, 2007). However, although business processes and IS are derived from the BM, the latter does not define precisely how processes and IS are executed and run in a specific environment. But, it implies options on which to design different business processes and IS. For instance, having an Internet Enterprise Resource Planning system (IERP) as one of the technological resources would affect the configuration of value system-related processes and IS. However, they still can be designed and configured in a flexible manner.

The functions of BMs: practical uses within organizations

The useful roles of the BM and the benefits organizations can achieve by appropriately employing the concept are highly significant. Interestingly, the applied analysis in this research reveals that the BM is a multi-purpose concept. The utility of BMs is diverse and the concept

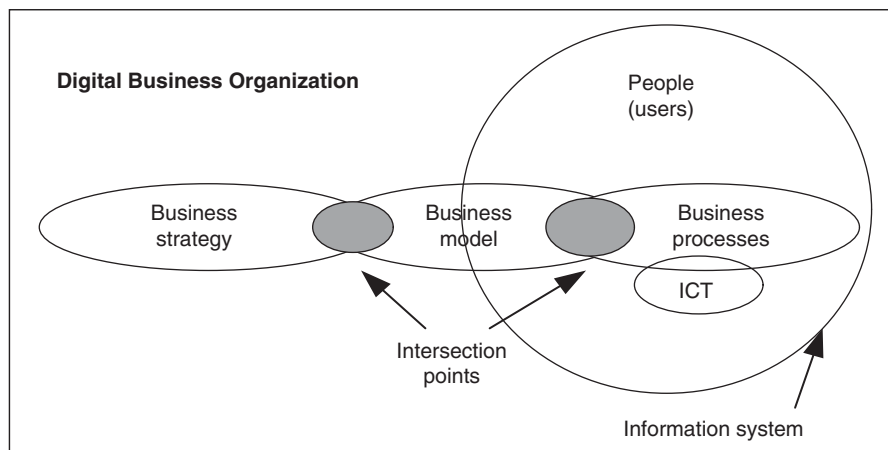


Figure 4 Business Model intersection points.

could be used for three main functions within digital organizations as follows:

- (1) *Conceptual tool of alignment:* Having established the reach of the BM concept as an intermediate theoretical layer, we now move a further step towards the contextualization of the BM concept as a conceptual alignment layer. In this modern digital world as opposed to the traditional one, translating business strategy into business processes has become much more of a challenge. Business processes are now mainly ICT-enabled. In addition, today's business environment is more dynamic, characterized by ongoing fast changes and severe stakeholders' pressure all adding to the complexity of managing modern ICT-based businesses. Therefore, the BM has risen to prominence as a conceptual tool of 'alignment' to fill the gap between corporate strategy and business processes including their IS, and to provide a crucial harmonization among these organizational layers (illustrated in Figure 5). Nevertheless, for businesses to survive and succeed, the business strategy, BM, and business processes along with their IS, should be treated as a harmonized package. This package should be reviewed continually to ensure its consistency with the external environment as well as the stakeholders' interests.
- (2) *Interceding framework:* The BM signifies a mediating construct between technological artifacts and

the fulfillment of strategic goals and objectives including the creation of the essential economic value, as illustrated in Figure 6. Chesbrough & Rosenbloom (2002) argue that 'a successful business model creates a heuristic logic that connects technical potential with the realization of economic value [and that] the business model unlocks latent value from a technology' (p. 529). Similarly, Kamoun (2008) argues that the 'BM becomes the blueprint of the way a business creates and captures value from new services, products, or innovations.' (p. 638). In line with this approach, Yuan & Zhang (2003) argue that it is not the technological application itself, but rather the BM behind the technological artifacts that makes the success and allows hi-tech companies to achieve their strategic goals and objectives.

Based on this standpoint, the BM portrays a sound translating method essential to obtain and capture values from the proposed digital innovations. Indeed, the technology is positive only if it addresses the requirements of its users in an efficient and effective approach. The BM has been perceived as the primary reason behind technologies' success or failure. In the telecommunications sector, for example, the success of NTT DOCOMO's i-mode mobile services is primarily credited to its well-designed BM in action (Ratliff, 2002; Ballon, 2007). On the other hand, the low adoption of WAP (Wireless Application Protocol) services is mainly seen as being

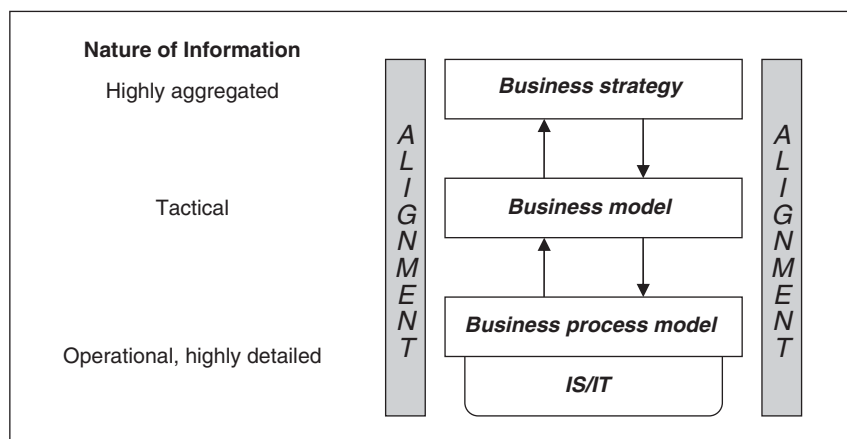


Figure 5 Digital business layers.



Figure 6 The function of the Business Model as an interceding framework.

because of the absence of a feasible BM and its inappropriate configurations (Sigurdson 2001; Kumar *et al.*, 2003).

Appreciating this particular function for the BM, the authors believe that the concept could be perceived fruitfully as a *backbone* providing a consistent and systematic approach for designing, evaluating, and managing different technologies and their connected products and services.

- (3) *Strategic-oriented knowledge capital*: The BM is highly critical given that it portrays the *underlying logic* of a business system, demonstrating the ways in which businesses are performed and strategic objectives are achieved. Moreover, the importance of the BM to any organization also comes from the fact that it is considered as strategic-functional algorithms demonstrating high-level business rules and practices. Thus, it answers questions related to value creation and configuration in addition to value exchange, that is, value created and proposed as well as value captured. Notwithstanding, BMs of organizations are rarely articulated or defined explicitly. Most often they represent a tacit knowledge in the minds of one or few key managers within organizations and are seldom communicated to others.

Describing the BM explicitly has become a vital necessity and one of the most important organizational assets. An explicit BM enhances digital business managers' control over their businesses, and enables them to compete better because of the appropriate and necessary level of information that the BM provides. This level of information also extends digital business managers' knowledge of how the business organization will adapt their strategy, business domains, business processes, and IS to cope with the complex, uncertain, and rapidly changing digitalized environment. Thus, there are potential improvements in the organizations' abilities in achieving their strategic outcomes given that the information that the BM offers is neither highly aggregated, which is in the case of business strategy, nor highly detailed, which is the case of the operational business process model.

In retrospect, the authors here suggest that an *explicit* depiction of the BM could be positively employed to mobilize an organizational knowledge capital useful in enhancing strategic decision-making functions and at the same time leveraging the practice of the BM in action. The business mode – if explicit – forms a critical organizational asset or resource promising to provide a digital organization with the longest enduring competitive advantage.

Having explored and discussed the functions for the BM concept, it is worth mentioning here that these three main roles or functions of the concept are not

mutually exclusive; they could be utilized simultaneously for different purposes and objectives within organizations. However, we assume that the realization of the importance of BMs and their functions explains the significance behind the rise of BM research with the advent of IT-centered businesses, such as those in telecommunications.

Implications and research agenda

The critical analysis of the existing views toward the BM concept in this paper has highlighted important gaps. The concern that the concept is still fuzzy and ill-defined, the consideration of BMs as substitutes for strategies, the partial views and definitions of the concept as its related knowledge is fragmented, and the fact that its practical functions are not yet clearly defined have highlighted the need for a conceptual framework that integrates the existing views and analyzes them to add novel mined knowledge to this important area of research. In the light of these arguments, the theoretical and practical implications of the constructed conceptual framework can be summarized as follows:

- *Fruitfulness*: This unified framework synthesized the BM compositional dimensions (ontological structure, characteristics, reach, and functions) in a novel manner. It provides a complete foundation for researchers and practitioners who are looking forward to utilizing the BM concept in their practices and applications. Furthermore, it represents a *versatile* instrument that can be of assistance to the BM scientific research community as well as practitioners since (a) it organizes and manages the BM foundational knowledge and hence, it is helpful in assuaging the 'fuzziness' problem which has been associated with the BM concept; (b) since the propagation of many synonyms and labels adds to the haziness of the BM concept at this stage, this framework achieves parsimony and establishes a common language and terminology to reduce this problem; and (c) from a practical perspective, this unified view enhances organizations' ability to design, create, communicate, compare, analyze, evaluate, and modify their existing and future BMs.
- *Completeness of the BM ontological structure*: Our instantiation of the BM concept represents a step towards building up a concrete ontology (see Gruber, 1993). This paper defines the BM as an abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, co-operational, and financial arrangements designed and developed by an organization presently and in the future, as well all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives. This definition indicates that value proposition, value

architecture, value finance, and value network articulate the primary constructs or dimensions of BMs. The developed framework also synthesizes the constituent elements of these dimensions forming a complete ontological structure of the concept. However this could be developed further. An engineering BM ontology in terms of elements, properties (relationships), constraints and rules, semantics and possibly notations might, for instance, reinforce understanding, while also facilitate the development of computer-based modeling tools that would be potentially helpful to practice.

- *Practical functions of the BM concept.* This novel framework explores three main practical functions for the concept. The applied analysis reveals that the concept is *versatile* in a non-mutual exclusive mode since it can be used concurrently for alignment functions, technology leverage, and decision-making practices. The idea of utilizing the BM as a *conceptual tool of alignment* is highly significant as most of the existing alignment research (see Avison *et al.*, 2004) addresses this issue at the strategic level only. BMs on the other hand promise to align business organizations by harmonizing all organizational layers and thus be seen as an essential intermediate conceptual layer, BM improves cohesively organizations' internal alignment.

Although we have provided theoretical insights concerning the role of the BM in providing the needed fit between the business strategy and IS within digital organizations, there is still a need for future research in this particular area. In fact, this function for the concept is still a theory to be tested practically. Researching this particular issue using for example a case study methodology, would add to our knowledge. Further, addressing the characteristics of the digital business and testing how each feature affects the mapping of business strategy to the BM and the BM to ICT-enabled business processes has strong theoretical and practical implications. Moreover, identifying the intersection elements that represent two transitional stages in the mapping process would be particularly useful.

Looking at the BM as a *mediating construct* between technological artifacts and the attainment of strategic outcomes is also useful. Particularly in IS, there seems to be an agreement that a technology does not succeed by itself; rather the perception is that a consistent and effective organizational setting and structure are needed in addition to technological architecture if the technology is to be successful and useful to its intended users. The BM however fulfils these requirements because of its comprehensive configurations discussed previously.

This paper has also introduced the idea of utilizing the BM as novel strategic-oriented knowledge capital to enhance an organization's innovation capability

and decision-making practices. In our context, the BM concept represents a distinct form of knowledge. We argue that an organization's understanding of its BM could be viewed as novel strategic-oriented knowledge capital that is crucial for business organizations in an emerging, turbulent, and digital business environment. The BM, as knowledge capital, could serve as executives' guidance with respect to strategic decision-making practices. Thus, exploring the relationship between an organization's knowledge, decision-making, and strategic position from a BM viewpoint appears not only to be theoretically interesting, but also to have strong practical implications. Potential value may also be offered through researching the differential influences among approaches of representing the BM knowledge (oral, textual, graphical) on strategic decision-making practice and in turn the organization's strategic position. Moreover, an understanding of the organization informed by the knowledge-based BM might lead to increased innovation. Theorizing and empirically verifying this also has potential.

- *Granularity for flexibility and reusability:* Characterizing the BM as *granular* in addition to other characteristics is novel. In particular, understanding the BM concept as granular implies flexibility in its related functions such as design, management, evaluation, and change and also facilitates the reusability of the components for new BMs. This highlights the concept as an efficient and effective framework essential to digital organizations. This area of research is still unexplored; therefore theoretical as well as practical investigation and delineation of this particular area would be very useful.
- *BM dynamics:* We have seen that a BM for digital business organizations is being designed and shaped not only according to the internal variables of organizations such as strategy, but also with respect to external environmental factors. The BM needs to be compatible with external variables such as national culture, market opportunities, laws and regulations, customer-base size and nature, competition level, and technological advances. For example, NTT DoCoMo's i-mode is a successful BM in Japan that, a few years ago, faced varied results in the European market (Kallio *et al.*, 2006). There are therefore opportunities for researchers to provide insights into how digital organizations could develop compatible BMs with internal-external factors, ensuring flexibility in terms of re-engineering their existing BMs to cope with a turbulent business environment.
- *Agenda for future research:* Although this research has provided some clarification to the BM area, particularly for digital businesses, there are many areas for future-related research. We have discussed some of

these avenues in this section and we add other three trajectories as follows:

- (1) *The degree of importance of each BM primary dimension:* This paper has already identified the primary dimensions of the BM concept (value proposition, value architecture, value network, and value finance). However, different industries/businesses may place dissimilar emphasis on those four dimensions. For example, while manufacturing companies may draw more attention to their value networks as they belong to a tight supply chain system, telecommunication providers are likely to lay more emphasis on their value architectures as being the primary enablers of value propositions.
- (2) *BMs consistency of value network actors:* Part of a digital organization's BM concerns collaborating with its value network actors. The success of an organization's BM depends to some extent on the relationships it maintains with various players within the value system. However, the expected benefits are not achieved easily as actors might pursue different business logics, and chase different strategic goals with the collaboration. Exploring how actors belong to the same value network could achieve 'win-win' situations, and improve their economic values through pursuing consistent BMs has significant theoretical and practical implications.
- (3) *The relationship between BM and business performance:* Enhancing business performance is the target of any business organization. Exploring what constitutes the optimal and most viable BM that would boost the business performance is important. However, those constituent elements of the BM success differ across industries. Consequently, deliberating and comparing those differences among industries would also have much potential. Moreover, empirical investigations on how adopting the optimal BM would advance the business performance also have practical implications.

Conclusions

Despite awareness of the significance of the BM to an organization's success in business, in particular digital business, there has been little consensus about its basis. The BM concept is relatively young but has been used in various contexts. While researchers might view the concept subjectively, practitioners perceive it according to their organizations' environment and culture. Consensus about BM compositional aspects is crucial since it represents a framework or a theoretical underpinning on which researchers may apply to different industries within different contexts. It is also fundamental to practitioners since the BM could be utilized as a reference measure for their business performance analysis.

To address these issues, this paper clarifies the BM concept. The authors have reviewed the IS-related literature, classified the BM definitions, and extracted a hierarchical taxonomy which was used as a guideline on which to develop a more comprehensive and general BM conceptual framework. In this paper, the authors have provided a complete ontological structure of the BM concept showing that value proposition, value network, value architecture, and value finance are the main dimensions. This paper also reveals the modeling principles of BMs as conceptual, multi-level, dynamic, granular, and coherent.

Furthermore, the authors have shown that the BM is an essential conceptual tool of alignment in digital business. It can be depicted as an intermediate layer between business strategy and ICT-enabled business processes in order to fulfill the missing link created by the complexity of the digitalized environment. The BM is derived directly from the business strategy on which the business processes and the required information system is derived. This paper also shows that making the BM more explicit helps digital organizations assess the value of intangibles in their businesses since the information provided by the BM mobilizes knowledge capital that supports organizational strategic decision making. Further, this mobilized knowledge signifies an organizational asset that enables a digital business to achieve sustainable competitive advantage in its market.

The BM is also an important backbone for technological artifacts as it leverages their success and facilitates the attainment of strategic aims including economic value. However, for business organizations to survive and to succeed, a well-designed BM that ensures harmonization among business strategy, business processes, and IS is crucial. Moreover, a BM for a digital business should be reviewed continually to ensure its fit with the complex, uncertain, and rapidly changing external environment. Pressing forward the body of BM scientific knowledge helps practitioners such as managers, BM designers and evaluators, and industry consultants realize the most appropriate BM to achieve their strategic goals and objectives.

The authors have proposed a novel unified BM framework which takes into account the different views expressed in the IS literature and incorporates new mined knowledge based on the applied analysis utilizing content analysis methods. It is hoped that this generic, comprehensive, and unified BM framework works as a reference model and enables consensus that has not yet been achieved.

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