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A Mapping Tool For Fostering Innovation

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Business Model Process Configurations: A Mapping Tool For Fostering Innovation

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Purpose – The paper aims: 1) To develop systematically a structural list of various business model process configuration and to group (deductively) these selected configurations in a structured typological categorization list. 2) To facilitate companies in the process of BM innovation, by developing (inductively) an ontological classification framework, in view of the BM process configurations typology developed.

Design/methodology/approach – Given the inconsistencies found in the business model studies (e.g. definitions, configurations, classifications) we adopted the analytical induction method of data analysis.

Findings - A comprehensive literature review and analysis resulted in a list of business model process configurations systematically organized under five classification groups, namely, revenue model; value proposition; value configuration; target customers, and strategic partnerships. Based on the list of configurations developed, and the five classification categories chosen, a business model ontology was developed followed by three testable propositions, aimed at facilitating companies in selecting the most applicable business model process configurations, based on their own strategic preference, as part of their business model innovation activity planned.

Practical implications – This paper aimed at strengthening researchers and, particularly, practitioner's perspectives into the field of business model process configurations. By insuring an [abstracted] alignment between the five classification categories chosen by us to map various configurations, and the ontology developed, practitioners will be better equipped to design, evaluate, implement, and innovate their business models.

1. Introduction

The term Business Model (BM) has become popular since the "dot com era" in the mid-nineties. As business ecosystems evolved due to globalization pressures and new communication technologies, many companies started to rethink their BM and business structure by shifting to an E-business format (Moore, 1998). E-business in general made it possible to enable transactions between companies in new and more frictionless manners, in this way creating value (Amit and Zott, 2001), through either new value streams, revenue streams or logistical streams (Mahadevan, 2000).

According to Gordijn *et al.* (2005), the evolution of BM research can be categorized into five core phases. In the first phase, a number of authors suggested BM definitions and classifications (Timmers, 1998; Rappa, 2001; Magretta, 2002). In the second phase authors started to complete the definitions by proposing what elements, i.e. building blocks, belong within a BM (Chesbrough and

Rosenbloom, 2002; Linder and Cantrell, 2000; Petrovic *et al.* 2001; Sandberg, 2002). The third phase followed a detailed description of these components (Hamel, 2000; Weill and Vitale, 2001; Afuah and Tucci, 2003), while in the fourth phase researchers started to model the components, conceptually culminating in BM ontologies such as the Business Model Canvas (Gordijn, 2002; Osterwalder *et al.* 2004). Finally, in the fifth phase (up to mid-2000's), these models were applied in management and information system applications.

The current decade has pushed BM studies even further with focus on BM innovation (Chesbrough, 2007; Massa and Tucci, 2014), open BMs (Chesbrough, 2010), network-based BM innovation (Lindgren *et al.* 2010), BM mapping (Montemari and Nielsen, 2013), BM performance indicators (Nielsen and Montemari, 2012), BM patterns (Johnson, 2010; Gassmann *et al.* 2014), and BM innovation typologies (Taran and Boer, 2013).

The ongoing and growing interest in studying the BM phenomena both by academics and practitioners (Zott *et al.* 2011), is attributable to the current hyper-competitive (D'Aveni, 1994) landscape, which has increased even further companies awareness towards BM innovation thinking given the shorten lifecycles of products, services, competences, and working tasks (e.g. IBM 2008; 2010). These rival conditions, enforced companies to rethink and innovate their operational BM processes more frequently and more radically. Large and successful companies realized that their current operational BM could easily become obsolete in view of the emergence of new and disruptive technologies or business models (e.g. the Kodak case).

Yet, in the challenge of looking for a "shopping list" of alternative business models – models (or BM process configurations) to innovate upon, many companies' falls empty handed, given that the current research is unable to provide exhaustive answers. Although there have already been several attempts at mapping BM process configurations, in many of these cases the list identified was either miss-structured (Lambert, 2006; Bukhart *et al.* 2011; Fielt, 2014) or, alternatively, limited in its analysis to a single configuration type e.g. e-business model [process] configurations (Timmers, 1998; Rappa, 2000).

Accordingly, we designed the paper as followed: In Section 2 a literature review addressing BM process configurations and classifications is presented, concluding with a critique view over the current "state-of-the-art" outcomes regarding this research domain. Section 3 presents the research objectives and design, and give details to the methodological implications drawn from these two objectives. Section 4 discusses the findings of the paper, in view of the methodological framework chosen, and Section 5 concludes the paper by presenting the main contributions and implications of this paper both to academics and, particularly, to practice.

2. Literature Review

Leaning on the conceptions of Baden-Fuller and Morgan (2010), who suggest that a BM (as a model) connects up the 'workings inside the firm' to elements outside of the firm 'the customer side' as a means to create value (from the application of innovation and new technologies), it may be argued that business models are concerned with linking up combinations of assets to value creation (e.g. Boulton *et al.* 2000). As such, managers are potentially left with an indefinite number of combinations to analyze and choose from. Unless of course, their analysis somehow is structured and guided according to, for example, the specific challenges faced by the firm.

2.1 Configurations

Over the past decade, several attempts were made in order to develop BM definitions and frameworks (for exhaustive review, see e.g. Osterwalder, 2004; Shafer *et al.* 2005; Al-Debei and Avison, 2010; Zott *et al.* 2011; Fielt, 2013).

Parallel to this research stream, there has been a growing interest in trying to identify successful BM process configurations across different industries. In particular, identifying these configurations suggests that BM processes work like "recipes" that could be generalized in order to develop successful businesses (Pateli and Giaglis, 2004). In other words, BM process configurations are ideal-type examples that describe and distinguish the behavior of companies operating in the real world, thus providing managers, practitioners and academics with formulas that have already been tried and tested in practice (Fielt, 2013).

Similar to BM frameworks, different labels were used to identify and discuss various BM process configurations. For example, Linder and Cantrell (2000), coined the expression "operating BM" by highlighting 33 different formats; Johnson (2010), pinpointed 19 possible BM process configurations, using the term "analogies"; Osterwalder and Pigneur (2010), exploited the term "patterns" by drawing attention to five BM templates; Gassmann *et al.* (2014), too, used the label "patterns" by identifying 55 possible options; Fielt (2013), and Massa and Tucci (2014), referred to these configurations as "archetypes".

BM process configurations are often labeled with the names of specific real-life companies, which are supposed to frame particular strong points and specific features, like the "McDonalds BM" or the "ebay BM". Alternatively, others considered being more generic conceptualizations of real world BM's, like the "franchising BM" or the "e-auction BM". According to Baden-Fuller and Morgan (2010), these two various ways of labeling BM process configurations involves two conceptions of models, i.e. role models and scale models; the former provides brief descriptions of BMs of *real* companies, which compete on the market (e.g. eBay BM), while the latter offers general ideal operating *business* cases that work in a fashion (e.g. e-auction BM).

Regardless of the different terminology used to frame and discuss BM process configurations, the underlining purpose remained the same, namely, to identify and describe various dissimilar operating business processes features. Yet, despite the relevancy of this research stream to promote BM innovation activities, by developing a large portfolio of business process configurations to innovate upon, this current research is still considered limited, as there is lack of clarity regarding the number of

BM process configurations available, as well as the content of each configuration pattern (e.g. Fielt, 2013). According to Zott *et al.* (2011), and Burkhart *et al.* (2011), such lack of a common language and content is quite problematic because it creates dispersion and prevents cumulative research and convergence of perspectives in BM research area.

2.2 Classifications

Systematically organizing a comprehensive list of BM process configurations is probably the primarily challenge that needs to be addressed. Architecturally organizing and grouping these configurations into a concrete classification framework scheme is yet another conceptual impediment that requires attention.

According to Baden-Fuller and Morgan (2010), categorization is powerful as it makes it possible to position BM process configurations close to each other based on underlying criteria, thus increasing the understanding of BM research area and enabling the development of ideal types. Yet the distinction between specific classifications such as BM typologies or taxonomies can be quite puzzling (e.g. McKelvey, 1982). Even though researchers and practitioners have been highlighting the need for a generally accepted BM categorization frameworks (Hawkins, 2002; Clarke, 2004; Pateli and Giaglis, 2004; Keen and Qureshi, 2006; Lambert 2006), the state of the art in this research stream is still unable to provide exhaustive answers (Burkhart *et al.* 2011).

Going back into basic definitions, typologies are defined as e.g. [a] "*complex theoretical statements that should be subjected to quantitative modeling and rigorous empirical testing"* (Doty and Glick, 1994, p. 231). Likewise, taxonomies have also been referred to as being classification schemes (e.g. Hempel, 1965; Mandel, 1996), however, in contrast to typologies, which are created deductively by classifying the objects into predefined groups that are created based on intuition and/or existing theory, taxonomies are derived inductively from empirical data (Steininger *et al.* 2013, referring to Bailey, 1994).

Although typologies research contribution is considered being substantial, particularly due to their ability to simplify a complex domain by identifying relationships between a small numbers of variables, they are not able to provide a general accepted terminology of a given phenomenon. This aim, according to Lambert (2006), is achieved by using statistical analysis in order to build taxonomies from a large number of variables to be considered simultaneously.

With relations to our field of study, akin to the inconsistencies found in BM definitions and in mapping BM building blocks (e.g. Taran, 2011), here too various criteria's were used to classify BM process configurations (Table 1).

Author	BM process configurations groups classification dimensions
Timmers (1998)	used 2 criteria for classifying Internet BMs: (1) functional integration (single function or multiple functions/integrated) and (2) degree of innovation (lower or higher).
Linder and Cantrell (2000)	focused on two main dimensions: (1) BM's core profit making activity and (2) its relative position on the price/value continuum.
Tapscott *et al.* (2000)	identified two criteria: (1) degree of economic control and (2) degree of value integration.
Rappa (2000)	used two perspectives to categorize BM: (1) the nature of their value proposition and (2) their mode of generating revenues.
Weill and Vitale (2001)	adopted five variables to categorize atomic [e] BMs: (1) how revenues are generated, (2) strategic objective, (3) value proposition, (4) critical success factors necessary for the successful implementation process, (5) core competences needed.
Betz (2002)	pinpointed four criteria: (1) resources, (2) sales, (3) profit and (4) capital.
Dubosson-Torbay *et al.* (2002)	identified six dimensions to classify BMs: (1) user's role, (2) interaction pattern, (3) nature of the offering, (4) pricing system, (5) level of customization and (6) economic control.
Chen (2003)	addressed four dimensions for e-BMs: (1) supply chain model (direct sales, e-tail, portal or marketplace), (2) revenue model (free or pay), (3) market type (B2C or B2B) and (4) corporate structure (pure internet or click-and-mortar).
Afuah and Tucci (2003)	used four dimensions to classify BMs: (1) profit site (role in value network), (2) revenue model, (3) commerce strategy and (4) pricing model.
Gassmann *et al.* (2014)	represented 55 BM patterns with no clear classification criteria, but with effect on their four BM components of 1) target costumer [who?], 2) value proposition [what?], 3) value chain [how?], 4) revenues model [value?].

Table 1: BM's process configurations classification schemes (inspired by Lambert, 2006)

In addition to the above-mentioned papers, other authors made attempts to classify various BM process configurations, but without clarifying any criteria's for differentiation (e.g. Bambury, 1998; Applegate, 2001; Eisenmann, 2002; Laudon and Traver, 2003).

By looking into the various classifications, it seems that the categories (types) developed were mostly conceptually driven. They were qualitative in nature (given that only few characteristics were considered), which inevitably resulted with the development of an arbitrary or artificial (Lambert, 2006) classification scheme. As such, we can conclude that most (if not all) of the classifications were designed as [qualitative] typological classification frameworks.

Furthermore, given the limited integration of criteria's and dimensions that are currently being used by the various authors to classify and cluster various configurations together (e.g. Lambert, 2006; Fielt, 2014), it is not surprising that we find little to no resemblance between the various authors regarding the classification patterns chosen. Consequently, here to, we found that the state-of-the-art in this research stream is (yet again) unable to provide exhaustive answers (Burkhart *et al.* 2011).

3. Research Objective and Design

Classifying objects in homogenous categories is a very relevant activity within a given research domain, as it allows researchers to organize abstract and complex concepts (Neuman, 2003), thus triggering further insights

to advance research in a certain domain. As Bailey states "*Theory cannot explain much if it is based on an inadequate system of classification*" (1994, p. 15). As previously mentioned, in the BM research area, categorizations are considered a powerful tool, as it makes it possible to position BM process configurations closer to each other based on underlying criteria, thus increasing the understanding of BM research area and enabling the development of ideal types (Baden-Fuller and Morgan, 2010).

Yet, the literature review section has clearly indicated that both the categorization and classification schemes of these configurations considered partly researched and unstructured. Subsequently, given the inconsistencies within this research domain, available lists of configurations may not be sufficient to facilitate practitioners in the process of BM innovation.

Moreover, by looking into other analytic tools and applications (e.g. BM Canvas; Customer Journey Mapping; Motivation Matrix Mapping; Value Proposition Canvas; Strategy Maps; Scenario Analysis; SWOT Analysis; Value Creation Maps), we found that many of these are considered useful for visualizing and analyzing mostly the current (i.e. "as-is") BM of a given company, and its value (proposition) creation potential. Yet, their ability to clarify the possibilities, or rather the potential BM innovation routes available to a company in a given context, is limited.

Consequently, we designed the paper's research objective as being two-fold:

1. To develop the content and the meaning of each configuration, and to (deductively) group various configurations in a structured typological categorization list.
2. To facilitate companies in the process of BM innovation, by developing (inductively) an ontological classification framework, in view of the BM process configurations typology developed.

3.1 Research Method

Clearly, the study of business models and their innovation is not confined to a single discipline (e.g. Taran, 2011). Therefore, this conceptual paper will adopt an analytical induction method of data analysis (e.g. Znaniecki, 1934; Johnson, 1998). Inspired by Kolb *et al.* (1979), Johnson (1998, p.28) suggested that "*the term 'induction' refers to the processes by which observers reflect upon their experiences of social phenomena and then attempt to formulate explanation that may be used to form an abstract rule, or guiding principle".* In many cases the generation process of these [new] concepts, ideas or subcategories may need to be modified later if exceptions are discovered, but ultimately, they have the ability to reflect fairly exhaustively the knowledge of what has been researched (e.g. Znaniecki, 1934).

Following Bloor (1978), and particularly Johnson (1998, p. 31), the analytic induction approach involves four main phases or procedures, namely:

1. ***Gain*** *access to the phenomenon of interest.*
2. ***Define*** *the phenomenon and identify variations.*
3. ***Create*** *a provisional list of case features common to each identified category* – in this phase the 'inductive' part is being initiated, where researchers shift their concern from description of the "as-is", and into the development of a [new] grounded theory.
4. ***Present*** *theoretical explanations of variance in the phenomenon.*

Taking our field of investigation into consideration, we affiliated the analytic induction method into the papers' design as followed: Phases 1 and partly phase 2 have already been discussed above. The analysis and discussion section will continue to deliberate both on the identification of variations in mapping BM process classifications (phase 2), and, following phase 3 of the analytic induction method and the two research objective, we will develop a revised list of BM process configurations under distinct categories, followed by the development of an ontological framework. Finally, we will conclude the paper by presenting theoretical explanations (i.e. propositions) to be further investigated (phase 4).

The literature concerning BM process configurations was thoroughly reviewed and the most promising articles and reports were selected for further analysis. The criteria applied for this selection were originality, contribution to theory, contribution to practice, and academic rigor. Unpublished dissertations, consultancy-based papers, conference presentations and magazine articles were carefully examined and crossed-checked for validation prior to use.

4. Analysis and Discussion

4.1 Configurations and Classifications

As mentioned above, many scholars agreed upon the relevance and necessity of studying BM process configurations, but share less uniform perceptions regarding the actual list and ordering procedure (e.g. Pateli and Giaglis, 2004). Following phase 2 of the analytic induction method, we mapped all the configurations mentioned by the various researchers in published articles. In total, over 120 articles were carefully examined in the initial phase, were we listed all identified configurations mentioned by the various authors. The research team then separated into two groups, where each group analyzed independently the configurations list, and crossed checked all types with one another to avoid duplications. Then, the two teams compared the two revised lists with one another, where some discrepancies where found. After a joint group discussion, we gradually developed an initial list comprised of 61 BM process configurations.

Once the initial list was developed, and in order to deepen the context and content of each configuration, we visualized each in a BM Canvas (Osterwalder and Pigneur, 2010). We chose the BM Canvas as a mapping tool due to its popular use amongst entrepreneurs, practitioners and academics alike. As such, it provides a

shared language to describe, visualize and assess (in our case) BM process configurations.

In the process of visualization, and following Baden-Fuller and Morgan (2010) findings, who suggested two possible ways of labeling BM process configurations i.e. role models and scale models (mentioned earlier), we took into consideration both the features identified by representative literature, and the characteristics of the real companies belonging to each configuration.

This in-depth analysis process helped us, inevitably, to clarify and sharpen the list even further by avoiding redundancies i.e. presenting similar configurations profiles, but with dissimilar labeling. Gradually, The systematic and structural process has led us to develop a final list comprised of 61 BM process configurations (Table 2).

Then, in the challenge of selecting appropriate categories for clustering the various configurations, we looked into representative literature for inspiration (e.g. Table 1) and selected the following categories:

- *Value proposition*: a company's offering of products and services. It identifies the value that the company brings to customers and the features of the offering (high performance, reliability, durability, design, availability of a wide range of products and services, customization, etc.) that are able to satisfy the customers' needs. It is the value for which the customers are available to pay; (e.g. Hamel, 2000; Chesbrough and Rosenbloom, 2002; Stähler, 2002; Osterwalder and Pigneur, 2010).
- *Customer interface*: customer segments a company aims to serve. This category identifies the subjects for whom the company is creating value as well as the needs that the company's offering is able to satisfy. Moreover, it includes the customers relationships (trust, loyalty, lock in, co-creation, personal assistance, self-service) established with the customer segments (e.g. Hamel, 2000; Chesbrough and Rosenbloom, 2002).
- *Value configuration*: it includes the mix of key resources (tangible, financial, human, intellectual), key activities (production, service delivery, distribution, logistics, etc.) and channels (direct or indirect, own or partners') which are needed to create the value proposition and bring it to the customer segments; (e.g. Chesbrough and Rosenbloom, 2002; Stähler, 2002).
- *Strategic partnerships*: it identifies the network of partners who engage in different kinds of cooperation with a company, in order to support the value configuration process, i.e. to provide key resources, to perform key activities, to interact with the target customers; (e.g. Hamel, 2000; Chesbrough and Rosenbloom, 2002; Osterwalder and Pigneur, 2010).
- *Profit model*: it includes the revenue model (how and how much the customers pay), the cost structure (the costs needed to make the BM work) and the resulting margin model. (e.g. Chesbrough and Rosenbloom, 2002; Osterwalder, 2004).

Table 2 present the 61 BM process configurations selected under these five categories, where we kept the original names of most configurations (with a link to a relevant academic source), and changed the name to several others in view of our analysis results. Inspired by Linder and Cantrell (2000), we then gave a short description to each configuration, and whether it is considered being purely an e-business process configuration, or conventional one, or both, followed by a case example of a company who is well branded for applying such configuration process as part of its operational BM. Finally, on the right side of the table, under the column *Synonymous configurations*, we gave other sources that describe the same type, but under an altered label.

Business model process configurations	
Configurations + descriptions and origination *(e)=e-business origin*	Synonymous Configurations
Configurations linked to Value proposition	
No frills (Gassmann et al., 2014) - *Offer low-price, low service/product version of a traditionally high-end offering. (Ryan Air)*	Low touch (Johnson, 2010), Add-on (Gassmann et al., 2014); Low-price reliable commodity (Linder and Cantrell, 2000); Standardization (Johnson, 2010)
Mass-customized commodity (Linder & Cantrell, 2000) - *Customized model options along with competitive prices (Dell)*	Mass customization (Gassmann et al., 2014)
Incomparable products/services (Linder & Cantrell, 2000) - *Exploit proprietary technology to offer unique products/services that command high margins. (Genzyme, Polaroid in the 60s)*	Linked to Aikido (Gassmann et al., 2014)
Quality selling (Linder & Cantrell, 2000) - *High quality or rare products are sold for premium prices. (Saks Fifth Avenue)*	
Fast follower (Authors interpretation) - *Under-price competitors and use marketing to convince customers that your offering is equivalent. (MCI WorldCom with AT&T)*	Under the umbrella pricing (Linder and Cantrell, 2000), linked to Reverse engineering (Gassmann et al., 2014)
Cool brands (Linder & Cantrell, 2000) - *Use expert brand marketing to develop high product status. (NIKE)*	Linked to Ingredient branding (Gassmann et al., 2014)
Infomediary (e) (Rappa, 2000) - *Collect or/and produce information for other in regards to market information, products, producers and consumers.(Edmund)*	

Price-reduction bundling (Authors interpretation) - *Packaging related product together. The price of the package deal is lower than the sum of the prices of the single products or services. (Fast food value meals)*	Bundling (Johnson, 2010)
Selling product performance - *Rather than sell products outright, sell the service the product performs. (IBM, Zipcar)*	Product to service (Johnson, 2010), Rent instead of buy (Gassmann et al., 2014), Performance-based contracting (Gassmann et al., 2014), Guaranteed availability (Gassmann et al., 2014)
Full service provider (Weill & Vitale, 2001) - *Provide a full range of services in one domain (e.g. financial, health). (Alberta health Services)*	Solution provider (Gassmann et al., 2014), Trusted solution (Linder and Cantrell, 2000), linked to Cross service (Gassmann et al., 2014)
Value bundling (Authors interpretation) - *Offer a package of acceptable quality goods and services to form a single unique offering. The price of the unique offering is higher than the sum of the prices of the single products or services. (Omnicom)*	Comprehensive offering (Linder and Cantrell, 2000)
Brokerage (Johnson, 2010) - *Bring together buyers and sellers and facilitate transactions.*	Information brockerage, trust and other services (Timmers, 1998), Intermediary (Weill and Vitale, 2001), Affiliate model (Rappa, 2000); Brokerage model (Rappa, 2000), Open market making (Linder and Cantrell, 2000), Exclusive market making (Linder and Cantrell, 2000)
Value chain service provider (Timmers, 1998) - *Specialize on a specific function for the value chain, such as electronic payments or logistics, with the intention to make that into their distinct competitive advantage. (Shipping- and freight companies)*	Layer player (Gassmann et al., 2014); Reliable commodity operations (Linder and Cantrell, 2000), Service-wrapped commodity (Linder and Cantrell, 2000)
Value chain coordinator (e) (Authors interpretation) - *Provide transaction coordination services and optimization of the communicational and organizational workflows for all parties involved in the same value chain. (Celarix, PrintConnect.com)*	Value net integrator (Weill & Vitale, 2001), Value chain integrators (Timmers, 1998), Transaction service and exchange intermediation (Linder and Cantrell, 2000)
Value added reseller (Linder & Cantrell, 2000) - *Focus on value added in sales and service while offering a complete selection of readily available products in a focus category for attractive prices. (Toys R Us, Berkshire Computer)*	Cat-daddy selling (Linder and Cantrell, 2000)
Collaboration platforms (e) (Timmers, 1998) - *Provide a platform (a tool kit and an information environment) for collaboration between enterprises. (Podio)*	Shared IT infrastructure (Weill and Vitale, 2001)
Virtual community (e) (Weill & Vitale, 2001) - *Facilitate and create loyalty to an online community of people with a common interest enabling interaction and service provision. Members (customers or partners) add information into a basic environment and thereby create value for one another. (Trust Pilot, YouTube)*	Community model (Rappa, 2000), Crowdsourcing (Johnson, 2010), Open source (Gassmann et al., 2014)
Trust product/service leadership (Linder & Cantrell, 2000) - *Ensure long-lasting customer relationships through a platform with a continuous upgrade path. (Teradyne)*	
Trusted operation (Linder & Cantrell, 2000) - *Provide predictable operations that carry big consequences for failure. (Rolls Royce)*	
Trusted advisor (Linder & Cantrell, 2000) - *Stay on top of the information loop and provides customers with answers to complex questions. (McKinsey)*	
Experience destination (Linder & Cantrell, 2000) - *Attract customers through a carefully designed environment. (NIKE Town)*	Experience selling (Gassmann et al., 2014)
Configurations linked to Value configuration	
Channel maximization (Linder & Cantrell, 2000) - *Content is delivered through as many channels as possible. (Coca Cola)*	
E-shop/shop (Timmers, 1998) - *Customers will pay premium prices for convenience such as: broad selection, ubiquitous access and fast delivery. (ASOS.com)*	Merchant model (Rappa, 2000); One stop, convenient shopping (Linder and Cantrell, 2000); Supermarket (Gassmann et al., 2014), Shop in shop (Gassmann et al., 2014), linked to E-commerce (Gassmann et al., 2014)
Branded reliable commodity (Linder & Cantrell, 2000) - *Attract customers with good brand marketing to earn a small premium in price for an efficiently produced commodity (Goodyear, Heinz tomato souce)*	
E-mall/mall (Timmers, 1998) - *A collection of shops or e-shops, usually enhanced by a common umbrella. (eBay)*	Merchant model (Rappa, 2000), one stop low price shopping (Linder and Cantrell, 2000), Shop in shop (Gassmann et al., 2014), linked to E-commerce (Gassmann et al., 2014)
External sales force (Authors interpretation) - *A product is moved through an aggressive external sales force motivated by pyramid commission structures. (Mary Kay, Vorwerk)*	Experience selling (Linder and Cantrell, 2000)
Integrator (Gassmann et al., 2014) - *Be in command of the bulk of the steps in a value-adding process by controlling all resources and capabilities in terms of value creation (Zara)*	Bundling business models (Osterwalder and Pigneur, 2010)
Disintermediation (Johnson, 2010) - *Deliver directly to the customer a product or a service that has traditionally gone through an intermediary. (DELL)*	Manufacture (direct model) (Rappa, 2000), Direct to consumer (Weill and Vitale, 2001), Direct selling (Gassmann et al., 2014)
E-procurement/procurement (Timmers, 1998) - *Tendering and procurement of goods and services by leveraging suppliers against each other (Public invitation to tender)*	
Trade show (Authors interpretation) - *Leave marketing or other value chain functions (payment, logistics, ordering) to a 3rd party with a well-known brand namee.g. licensing, outsourcing. (Alibaba.com, Exhibition fair)*	Third-party marketplace (Timmers, 1998)
Configurations linked to Profit model	
E-auction/auction (Timmers, 1998) - *Web-based or traditional auction with traditional bidding mechanisms. (eBay)*	Merchant model (Rappa, 2000), Auction (Gassmann et al., 2014)
Bait and hook (Osterwalder & Pigneur, 2010)	Razors and blades (Johnson, 2010); Razor and blades

- Offer customers an inexpensive or free initial product and hereafter have then pay more for additional related products. (Gillette, HP inkjet)	(Gassmann et al., 2014); Lock in (without razor) (Gassmann et al., 2014), Razor and blade (Linder and Cantrell, 2000)
Reverse bait and hook (Johnson, 2010) *- Offer a low-margin product at low or no cost to encourage sales of the initial higher-margin product. (Amazon Kindle)*	
The long tail (Osterwalder & Pigneur, 2010) *- Sell a wide scope of «non-hit» products in low quantity. (LEGO)*	Long tail (Gassmann et al., 2014)
Upfront payment (Authors interpretation) *- Have the customer to pay up front and generate high profits by maintaining low inventory. (Amazon.com)*	Negative operating cycle (Johnson, 2010), Cash machine (Gassmann et al., 2014)
Reverse auction (Johnson, 2010) *- Set a ceiling price for a product and have potential customers to bid the price down. (Elance.com)*	
Leasing (Johnson, 2010) *-Make products affordable by renting rather than outright sell them. (Xerox)*	
Fractionalization (Johnson, 2010) *- Allow customers to own part of a product, but enjoy many of the benefits of full ownership for a fraction of the price. (time-sharing condos, NetJets)*	Fractional ownership (Gassmann et al., 2014)
Instant gratification (Linder & Cantrell, 2000) *-Make money on high-priced instalment credit by providing split payment option to customers who can't afford the whole payment immediately. (Capital One)*	
Commission (Afuah & Tucci, 2001) *- Fees levied on transactions based on the size of the transaction. (Virtual Mall)*	
Pay-as-you-go (Johnson, 2010) *- Charge the customer for metered services based on actual usage. (PG&E)*	Utility model (Rappa, 2000), Fee for service (Afuah and Tucci, 2001), Pay per use (Gassmann et al., 2014)
Cell phone (Johnson, 2010) *- Offer different plans in relation to a product featuring a range of prices depending on varying levels of usage. (Sprint, Mobile Telco)*	
Freemium (Osterwalder & Pigneur, 2010) *- Customers get basic offerings for free and then pay additional offerings if they desire. The large customer base is subsidized by a small and higher paying. (Skype)*	Freemium (Gassmann et al., 2014)
Freemium upside-down (Osterwalder & Pigneur, 2010) *- Opposite to the Freemium model, the large customer base subsidizes the small base. (Insurance companies)*	
Subscription club (Johnson, 2010) *- Charge the customer a subscription fee (daily monthly, or annual) to gain access to a product or service. (Costco, Netflix)*	Subscription (Gassmann et al., 2014), Flat rate (Gassmann et al., 2014)
Configurations linked to Strategic partnership	
Outside-in (Osterwalder & Pigneur, 2010) *- Gather value e.g. information form external sources such as innovation partners and research communities. (Procter & Gamble)*	Externally aware (Chesbrough, 2006)
Integrated (Chesbrough, 2006) *- Routinely utilize external sources to fuel the business model and unused ideas are allowed to flow outside to others' business models. The company becomes a system integrator of internal and external technologies. (Procter & Gamble)*	
***De facto* standard** (Linder & Cantrell, 2000) *- License proprietary component across industries to establish it as the dominant design. (SHARP flatpanels)*	
Inside-out (Osterwalder & Pigneur, 2010) *- Sell own developed R&D, i.e. intellectual properties or technologies which are not used or underused inside the company. (GlaxoSmtihKline)*	Licence (Gassmann et al., 2014), Make more of it (Gassmann et al., 2014)
Adaptive (Chesbrough, 2006) *- Create an "ecosystem" by establishing its technologies as the basis for a platform of innovation for the value chain and benefit from the investments of other in the platform. (Apple Iphone)*	Open Business Model (Gassmann et al., 2014)
Content creator (e) (Authors interpretation) *- Provide content (e.g. information, digital products and services) via intermediaries. (Bloomberg L.P)*	Content provider (Weill & Vitale, 2001), Digitalization (Gassmann et al., 2014)
Affinity club (Johnson, 2010) *- The company's partners, with membership association and other affinity groups, offer a product or other benefits (discounts, points) exclusively to the company's members. (MBNA affinity cards, Payback)*	Customer loyalty (Gassmann et al., 2014)
Configurations linked to Customer interface	
Breakthrough markets (Linder & Cantrell, 2000) *- Invest in opening new markets to gain at least a temporary monopoly. (AIG Insurance)*	
Customer focused (Authors interpretation) *- Focus on the customer relationships activity and outsource the infrastructure management and the product innovation activities. (Mobile Telco, Private banking)*	Unbundling business models (Osterwalder and Pigneur, 2010), linked to From push to pull (Gassmann et al., 2014), linked to Orchestrator (Gassmann et al., 2014)
Referral (Afuah and Tucci, 2001) *- Making contacts which may lead to a sale or other favourable outcome, i.e. referring customers to a business. (Lead generator)*	Leverage customer data (Gassmann et al., 2014), Affiliation (Gassmann et al., 2014)
Free for advertising (Linder and Cantrell, 2000) *- Offer free products and services through a platform and make revenues from selling advertising space. (Facebook, GOOGLE)*	Advertising model (Rappa, 2000), Free advertising (Osterwalder and Pigneur, 2010), Market aggregation (Linder and Cantrell, 2000), Hidden revenue (Gassmann et al., 2014)
Round up buyers (Authors interpretation) *- Buyers are rounded up to gain purchase discounts and thereby offer attractive prices. (Costco)*	Buying club (Linder and Cantrell, 2000)
Robin Hood (Gassman, Frankenberger, & Csik, 2013) *- The same product or service is provided to 'the rich' at a much higher price than to 'the poor'. Serving 'the poor' is not profitable per se, but creates economies of scale, which other providers*	

cannot achieve. (TOMS Shoes, Warby Parker)	
Target the poor (Gassman, Frankenberger, & Csik, 2013) *- The product or service offering does not target the premium customer, but rather, the customer positioned at the base of the pyramid. Benefit from the higher sales numbers that usually come with the scale of the customer base. (Grameen Bank, WalMart)*	
Ultimate luxury *- Target customers within the upper side of society's pyramid. (Lamborghini, Jumeirah Group)*	
Multi-sided platforms (Osterwalder & Pigneur, 2010) *- Multi-sided platforms create value by facilitating interactions between two or more distinct but interdependent groups of customers. (Nintendo, GOOGLE)*	Two-sided market (Gassmann et al., 2014), Multi-party market aggregation (Linder and Cantrell, 2000), Hidden revenue (Gassmann et al., 2014)

Table 2: Classification list of BM process configuration

Proposition 1*: a comprehensive and structured list of BM process configurations, grounded in best practice experiences, can facilitate companies to promote BM innovation activities.*

4.1.1 Various levels of BM abstraction

As briefly mentioned above, Massa and Tucci (2013) suggested that these BM *archetypes* (according to their terminology) are situated at a higher level of abstraction prior to other BM application frameworks such as meta-models (e.g. Casadesus-Masanell and Ricart, 2010; Gordijn and Akkerman, 2001), or conceptual graphical/specified frameworks and ontologies (e.g. Osterwalder and Pigneur, 2010; Johnson, Christensen and Kagermann, 2008). This high(er) level of abstraction, according to them, can provide practitioners with a more comprehensive (system) view over their entire operational business. As such, the current operational BM archetype could be identified.

Archetypes, are defined [e.g.] as *a typical example of something, or the original model of something from which others are copied* (Cambridge Learner's Dictionary). As such, archetypes considered being unique prototypes, in which all other types (within the scope of a given phenomenon) could be explained by, or copied from. By following this definition, the abstraction process for each operational BM should lead into [only] one BM associated archetype. Yet, by following the list of BM process configurations (Table 2), we realized that it is possible to link to any given operational BM, (up to) five distinct BM process configurations, or "archetypes" according to Massa and Tucci (2013) terminology.

For example, "Dell" company can be described as having combinations of the following configurations: 1) "Mass-customized commodity" (i.e. offer "have it your way" options) as their value proposition. 2) "Disintermediation" value configuration model (i.e. deliver a product that has traditionally gone through an intermediary). 3) A mix of "Long tail" (i.e. selling a wide scope of non-hit products in low quantity and giving opportunity to customize the offering), and "Upfront payment (i.e. generating revenues quicker than it has to pay its suppliers for purchased goods) as the profit model. 4) Predominantly, but not exclusively "Outside-in" strategic partnership (i.e. gathering competences and information from external parties which offer electronic components). 5) Predominantly, but not exclusively "Breakthrough markets" customer interface (i.e. opening new market by accessing to an unavailable or non-existent offering in order to achieve a temporary monopoly).

Thus, we argue that the list of configurations are not representing BM archetypes as such, but rather configuration (models) of business processes, i.e. building blocks, or sub-archetypes, to a given business model. Accordingly, from an abstraction perspective, the level of BM process configurations should be situated at a lower (more detailed) level then BM ontologies, and, to the best of our knowledge, the BM archetype research domain still remains currently a research gap (i.e. terra incognita) that requires further investigation (Figure 1).

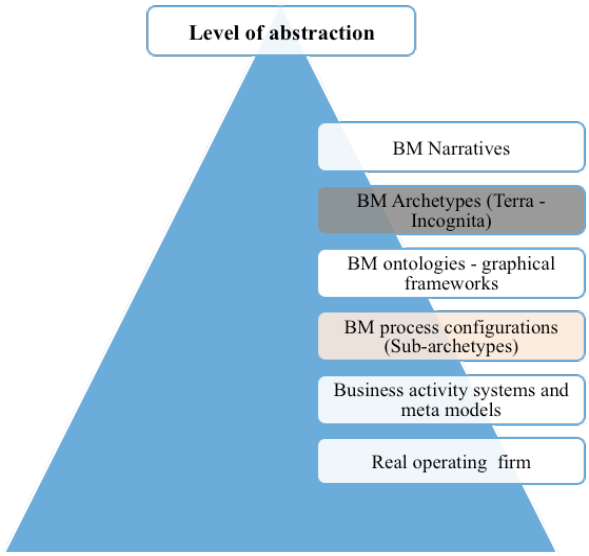


Figure 1: BM at different levels of abstraction from "reality" (inspired by Massa and Tucci, 2013)

Nonetheless, the discussion of Massa and Tucci (2013) regarding various levels of BM abstractions is indeed relevant and valid. The combination of each five configurations should lead into a workable ontological BM framework upstream, and into an operational BM downstream.

4.2 Development of a business model ontology

According to Guarino *et al.* (2009, p. 2), [computational] ontologies are "*a means to formally model the structure of a system, i.e. the relevant entities and relations that emerge from its observations, and which are useful to our purposes*". They used the example of various organizational charts in describing the interrelationships and the allocation of tasks and responsibilities of individuals and departments within a given company. Baader *et al.* (2009) suggested that the backbone of good ontologies should consist (and be designed by) a generalization/specialization hierarchy of concepts, such as a taxonomy, or, in our case, a typology (Table 2).

More particularly, and with relations to our research domain, BM ontologies should aim to identify what constitutes a BM (i.e. its dimensions) as well as the relationships amongst them (Osterwalder, 2004). These dimensions were labeled with different names by various authors, such as functions (Chesbrough and Rosenbloom, 2002), components (Pateli and Giaglis, 2004), key questions (Morris *et al.* 2005) or building blocks (Osterwalder and Pigneur, 2010). This plethora of proposals were descripted, shared and formalized in dissimilar BM ontological schemes (e.g. Osterwalder and Pigneur, 2010; Johnson *et al.* 2008), which, inevitably, has led into heterogeneity of terminologies regarding the appropriate number of dimensions that should constitute a BM, as well as the content of these dimensions (e.g. Zott *et al.* 2011; Fielt, 2013). Clearly, currently there is no consensus on these aspects as well.

However, agreement is slowly emerging on what a BM ontology is not, i.e. components in isolation (Zott *et al.* 2011; Fielt, 2013) for instance a value proposition (Dubosson-Torbay *et al.* 2002), a marketing model (Timmers, 1998), a pricing model (Rappa, 2000) or a network structure (Tapscott *et al.* 2002). Indeed, attention is gradually shifting from the BM components themselves to the relationships among them (Gordijn *et al.* 2005) as the consistency between the elements in a BM ontology and the way in which they affect each other are becoming more and more relevant. After all, a BM is more than the sum of its parts, it is a unique combination of dissimilar business processes, which are internally consistent and highly integrated (e.g. Morris *et al.* 2006). Therefore, concepts like the balance between different dimensions (Bouwman *et al.* 2008), the complex interdependencies among these elements (Johnson, 2010), or the strong synergies between building blocks (Fielt, 2013), are all core functions to consider when designing a BM ontology.

Similar to Osterwalder and Pigneur (2010), we too argue for the multiple benefits of a BM ontology, particularly in facilitating practitioners with the design, evaluation, implementation, and innovation process of their BM. The choice of designing a revised version of a BM ontology was not for challenging the usefulness of other existing ontologies, but rather to insure the alignment with the five categories chosen by us to map BM process configurations (Table 2). Such alignment could facilitate and simplify the fit through the abstraction process (Figure 1) i.e. in moving from the actual operational BM, into the configurations level, and into the BM ontology level, and vice versa.

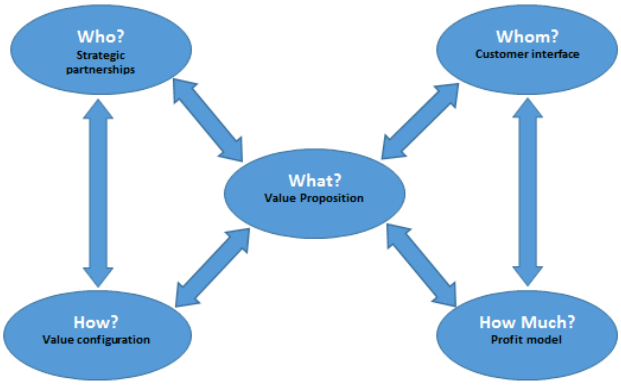
***Proposition 2**: BM ontology facilitate and promote BM innovation activities due to the structural descriptive interpretation design of various [dissimilar] building blocks components positioning and inter-relationships.*

Unfortunately, present BM ontologies, such as the BM Canvas of Osterwalder and Pigneur (2010) could not by applied in our case given the misfit in the number of building blocks involved (Osterwalder and Pigneur suggested nine building blocks, or "business process configurations" according to our terminology).

Starting from the structured typological categorization list (Table 2), analyzing definitions of strategy has been our starting point to the development of a BM ontology. Business strategy concerns with the question: How a company competes and positions itself among its competitors (e.g. Andrews, 2005; Porter, 2006). Operationalizing strategy into business model language, BM can be understood as the platform from which a given strategic choice is manifested. In a sense, BM should communicates:

- *What* is the company's "form of distinction"? i.e. value proposition.
- *To-Whom* this "form of distinction" is being delivered? i.e. customer interface.
- *How* the company builds up this "form of distinction"? i.e. value configuration.
- *Who* plays a central role to develop this "form of distinction"? i.e. strategic partnerships.
- *How-Much*, and in what way, the company is gaining a profit (revenues-costs) for this "form of distinction"? i.e. profit model.

Figure 2 present the ontology developed.



By insuring an abstraction alignment between the BM process configurations (Table 2), and the ontological framework (Figure 2), practitioners could easily identify the appropriate configurations in which their "as-is" BM is operating upon. Then, by linking these configurations into an ontological framework, and with the support of adjunct analytical methods and tools - mentioned earlier (e.g. Customer Journey Mapping; Value Proposition Canvas; Strategy Maps; Scenario Analysis; SWOT Analysis; Value Creation Maps), practitioners could select from a "shopping-list" of BM process configurations the ones which are the most appropriate for them to innovate upon.

Furthermore, the BM ontology developed provide the companies with opportunities to insure alignment between the configurations chosen. For example, choosing to adopt a "cool brand" as a value proposition configuration, will inevitably affect also directly the value configuration (brand marketing as a key activity and a resource), and the profit model (cost structure would be affected by high fixed costs related mostly to quality and marketing). In effect, the value proposition, in this example, is considered the epicenter of the BM innovation activity, but the effects of that choice will likely to spread to other building blocks as well, and to the BM operations overall.

***Proposition 3**: BM ontology facilitate and promote BM innovation activities by insuring an alignment between existing operational BM process configurations, and new configurations selected to innovate the BM upon.*

5. Contribution and Further Research

Companies today, in some industries more than others, invest more capital and resources just to stay competitive, develop more diverse solutions, and increasingly start to think more radically, when considering whether or not to innovate their business models. However, despite the understanding that existing BM process configurations requires changes on a more frequent basis, managers ability to clarify the possibilities, or rather the potential BM innovation routes available to a company in a given context, is limited.

This paper aimed at strengthening researchers and, particularly, practitioner's perspectives into the field of BM process configurations. Clearly, the systematic mapping list presented and analyzed here (Table 2) is not comprehensive as such to include all configurations available, but those who are documented here (in view of best practice experiences), can facilitate managers in reviewing an adequate amount of configurations to innovate upon. Alternatively, possibly preferably, practitioners who study the list may arise with radically/disruptive (new-to-the-world) BM process configuration idea, or, alternatively, apply existing configurations in another industrial settings (i.e. new-to-the-industry innovation). For example, Ryan-air applied the "No frills" BM configuration, which is not considered new-to-the-world as such, it has already been applied previously in other industrial settings, but Ryan-air was the first to introduce such BM process configuration (as part of their operating BM) within the Airline industry.

Additionally, we argued that by as insuring a fit between the BM process configuration list (Table 2), and the ontology developed (Figure 2), the actual BM innovation process is:

- better clarified and simplified due to the structural descriptive interpretation design of various [dissimilar] building blocks components positioning and inter-relationships (proposition 2), and
- Assuring an alignment between existing operational BM process configurations, and new configurations selected to innovate the BM upon.

Finally, given the qualitative nature of this paper, several approaches are possible to mobilize in order to extend and test the list of configurations, ontology and propositions developed in this paper, including more case studies, to shed additional qualitative light on the findings presented here, and a survey, especially for generalization purposes.

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