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**STRATEGY UNDER DISCONTINUITY: REVISITING THE ROLE
OF BUSINESS MODEL, VALUE NETWORK AND RESOURCE
MANAGEMENT**

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ABSTRACT

In today's world, firms are going through abrupt changes very frequently. These changes either occur under their control, within the scope of the enterprise or they get exposed to the changes that take place in their external environment as emergence of new technologies, new products, new competitors etc. In fact, the nature of these events is not very suited to be called as a change, but as a discontinuity. The purpose of this study is to revisit the roles rising concepts in Strategic Management like the Business Model, the Value Network and the Resource Management with an aim to include them in the process of strategy execution and determination under discontinuity. The study is based on a four-fold literature review performed on "Discontinuity", "Business Model Design", "Value Network Model" and "Resource Management", looking at the evolution of the concepts in time. After the literature review, a single, in-depth longitudinal case study was performed, which was originated from a permanent "Observatory on Information & Communication Technology and Management". The case is based on analysing the effects of discontinuities over the business strategy developed by TIM, an incumbent mobile network operator. First, its business model was analysed based on the proposed business model blocks of Osterwalder. Later, the discontinuities, their effect on the strategies and re-planned strategies were studied. Finally, each strategic tool was analysed individually, with their strategic impacts on discontinuity and with the explanation of how they can be used for strategy monitoring and the discontinuity assessment. The findings suggested that BM, VN and RM can support the execution of the planned strategy; monitor its performance and also spot discontinuities; operationalize the resulting uncertainties; and drive a re-planning process.

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Chapter 1

1. INTRODUCTION

Today, firms operating in many industries have to cope on a daily basis with a paradoxical condition: change is a constant.

Strategic Management, as a research field and as a practice, emerged to address the question of why firms enjoy different performance, and consequently, how these performances, when superior than competitors' (that is, deeply linked to a sustainable competitive advantage), can be maintained or even improved notwithstanding the internal and/or external turbulence. A good strategy, resulting from a proper planning process, is therefore the instrument to strive for keeping high performances and preserving success.

However, as the rates of change and innovations increase rapidly (Christensen, 1997), such strategy should be characterized by an adaptive or resilient nature (Hamel and Valikangas, 2004), to continuously create endogenous innovation or catch up exogenous changes, so as to maintain an adequate strategic fit (Grant, 1991) between the firm's strategy and the surrounding internal and external environments.

In addition, sometimes change is not only incremental, it is configured as a discontinuity which radically departs from the original state and introduces unexpected, unplanned – and often dramatic – variations.

The adequacy of existing business strategy model to cope with discontinuity should be then subject to further research (Ebrahimi, 2000), in order to resume and potentially redesign traditional strategic planning and strategy analysis (e.g. Lorange, 1980; Ansoff, 1985).

In particular, this study argues that emergent business strategy models are rising as concepts and constructs with a possible impact on the advancement of Strategic Management theory and

practices. These strategic tools are the business model (BM), the value network (VN) and resource management (RM).

Currently, these models are largely considered as stand-alone items, not properly framed and merged into the process of business strategy definition and application.

The objective of this study is hence to propose a revisited role for BM, VN and RM and suggest their more formal inclusion in the universe of strategic tools and practices, with specific reference to strategy execution and strategy control/monitoring under discontinuity.

The study builds its arguments and contribution on a theoretical framework (constituted by a literature review on discontinuity, business model design, value network configuration and resource management), supplemented by a longitudinal single case study on a company which went through several discontinuities affecting its business strategy.

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2. LITERATURE REVIEW

The study bases its contribution on the literature on discontinuity, business model design, value network configuration, and resource management.

This fourfold literature review constitutes the research theoretical framework.

2.1. Literature Review on Discontinuity

Discontinuity can be basically interpreted as “significant changes often occurring in abrupt or discontinuous bursts” (Brooks, 1986). In order to be more specific, it is “a temporary or permanent, sometimes unexpected, break in a dominant condition in society” (Van Notten et al., 2005). They are considered to be different from the current; the evident today, they shape the future society (Drucker, 1968). Discontinuity is a result of the behavioural dynamics, the alterations reaches a complete break with the previous (Deeg, 2007), now, a stage is replaced by a stage with a different equilibrium (van Dijk and van Geert, 2007).

What is the difference between a change and a discontinuity? The requirements to define a discontinuity are found in the literature as “a high rate of change”, “magnitude of change and consequences” and the “irreversibility” (Ayres, 2000). According to the study of Deeg, discontinuities constitute a different type of change; they are realized suddenly, not following the step-by-step pattern. Therefore, the cause-effect relationship is missing, which makes them to be called as “asymmetric changes”. It is also associated with the terms like “unsteadiness”, “instability”, “nonlinearity” or “jump”, due to the high dynamism it has inside (2007).

After looking through the general term definitions found in the literature, in order to have a clear image in mind, the examples provided to the discontinuities are reviewed. According to Drucker, they can be the technological and commercial developments that are the outcomes of the scientific

discoveries, they can be the establishment of an economy with a global market, eliminating the national markets, and they can be having “knowledge” as the utmost power (1968). Another study, done by Ayres, provides a broad list of examples of the discontinuities, from the biochemical evolution to violent and non-violent political changes, from economic discontinuities to epidemics, including even extinction of the dinosaurs in the list (2000). These have all provided a complete break in the dominant condition of the society.

As we continue with the literature review within the scope of Strategic Management, it is seen that the nature of the discontinuity may vary. It can be related to the environments, can be triggered by an uncertainty in technological environment (Schumpeter, 1942; Tushman and Romanelli, 1985), regulatory environment (Vernon and Wells, 1986), institutional and competitive environment (Prahalad, 1998) and socio-cultural environment (Romanelli and Tushman, 1986).

The requirements to define an alteration in the industry and to result in a technological discontinuity are:

- The change should occur in the required competence or other resources for the finalizing the product,
- It should take the form of a physical change and price/performance ratio change (Ehrnberg, 1999).

The study of Tushman and Anderson also supports these literature findings stating that technological discontinuities completely alter the industry’s price vs. performance ratio, advancing the technological frontier radically resulting in different product or process design. They have even defined a technology cycle stating that a technological discontinuity starts an “era of ferment” while competition takes place among the firms to create the “dominant design” that would end the era, continuing with the “era of incremental change” while the firms work on the dominant design to improve it more, till the next technological discontinuity arises and breaks it (1990).

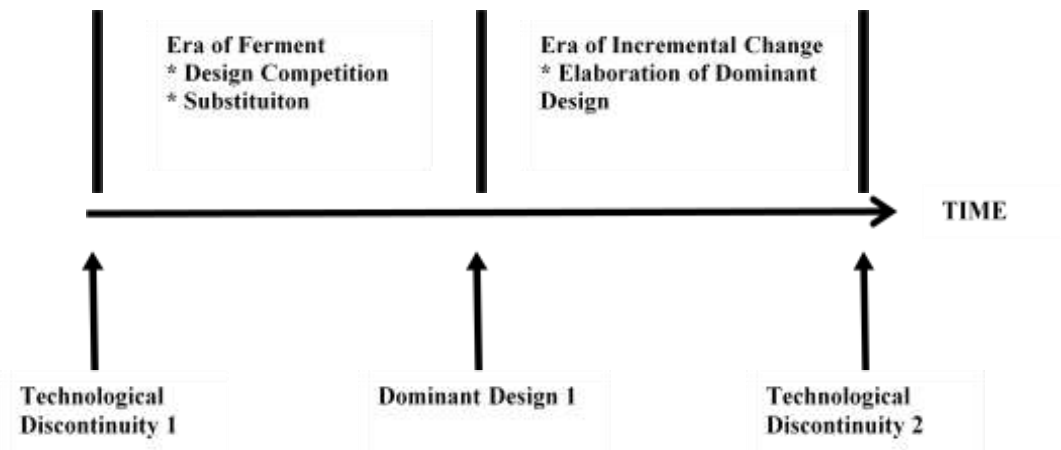


Figure 1. The Technology Cycle (Tushman and Anderson, 1990)

Besides being technology oriented, discontinuity can be also “market environment driven”, linked to changes in the customer side in terms of, for instance, preferences, needs, willingness to pay, and “competitive environment driven”, related to price wars, alternative offers, etc. (De Sarbo et al., 2004).

In addition to technological, market-driven and competitive environment driven discontinuities, the product lifecycles’ shortening and the difficulties experienced in forecasting can also be a factor that contributes to environmental volatility (Wu, 2010). The key features to assess the environmental volatility are:

- The intensity of external influencing factors; from a simple continuum with only a few to complex continuum with many,
- The characteristic of change; whether it took place rapidly or slowly, and
- The features and amount of the information present for the decision makers (Lester and Parnell, 2007).

However, discontinuities are not only originated by exogenous business environments. They can also be triggered inside the firm, within the internal environment. These endogenous discontinuities

can be linked to gaps in the “work setting” meaning the location of the workers, “tasks” meaning how the task is performed or “relations” meaning the nature of the relationships within other workers or between organisations (Watson-Manheim et al., 2002). The discontinuity within an enterprise can also show itself as a prominent change in processes, practices or routines, by implementing different ways to produce, or on products, by creating different outputs due to an innovation (Anderson and Tushman, 1990). It may take place unintentionally, due to the risk component in planning processes of an enterprise which makes it impossible to achieve perfect forecasting and room is always left for the unexpected to take place (Schreyögg and Steinmann, 1987). Today’s virtual world also contributes to discontinuities to arise in the work environment, like teaming with people in other geographies, via Internet etc. with different backgrounds and different technologies, who have different ways to work etc (Chudoba et. al., 2005).

As a result, after reviewing different types of discontinuities linked to diverse conditions, consistently with the purpose of this study it can be argued that the nature of discontinuity is essentially twofold, and can be grouped as:

- ***environment-driven***, if discontinuity is triggered by outbound phenomena and events which are not directly controllable by the single firm – e.g. cross-industry technological convergence; competitors moves triggering the rise of substitutive products or alternative offer paradigms; reshaped business area boundaries; enter of newcomers capable of leapfrogging existing entry barriers;
- ***enterprise-driven***, if it originates implicitly from inbound processes or dynamics, either implicitly – e.g. emergent resources, competencies or capabilities not resulting from a clear strategic commitment; unexpected innovations.

2.2. Literature Review on Business Model Design

The business model concept has generally referred to the “architecture of a business” or the way firms structure their activities in order to create and capture value (Timmers, 1998; Rappa, 2001; Weil and Vitale, 2001). Actually the concept lies in defining how the enterprise delivers value to customers, triggering them to pay and generating profit out of these payments (Teece, 2010).

When we look at the literature, it is seen that the BM design has evolved from an approach of single identification of typologies or taxonomies of models (Tapascott et al., 2000; Amit and Zott, 2001; Rappa 2001; Weil and Vitale, 2001) to the search for a clear ontology with the definition of the basic concepts of a theory (Osterwalder, 2004) to support firms’ strategy analysis. Its focus has shifted from the single firm to the network of firms, from the standalone firm positioning to its interrelations, adopting a dynamic concept (Ballon, 2007). In line with the literature stream, the BM shall be analysed as a combination of multiple and diverse design dimensions and interrelations; however, this existing knowledge lacks homogeneity (Johnson et al., 2008).

Several frameworks or templates have been proposed to construct maps of BMs, to clarify the processes underlying, and then to allow considering alternate combinations of these processes (also called building blocks or parameters).

According to some studies, BM components include assets, markets, customers, competitors, products, services costs, prices, revenues, profits, economic scales, marketing strategies, competitive strategies (Yu, 2001), while others mention a rather reserved set of elements like the customers and competitor, the offering, activities and organization, resources and market relations (Hedman and Kalling, 2003).

Chesbrough (2010) suggests that BMs executes the functions like emphasizing the value proposition and detailing the market segment, the framework of the value chain, the revenue, cost and profit structure, the position of the firm within the network and the competitive strategy.

Ballon (2007) suggests that what a BM is built on can be founded on the general concepts of value, defined as creating value for the firm itself while creating value for the customer and control, defined as the firm controlling its relationships within the network. For Johnson et al. (2008), it includes customer value, profit formula, key resources and processes, where they all should be evaluated together, in order to create and deliver value.

BM is also defined as a conceptual model, building assumptions on customer behaviours, analysing the cost structures and forecasting the competitive moves (Teece, 2010). In addition, it is considered a valuable tool to map the “as-is” situation, however, its role becomes rather symbolic during times of change and decision making, failing in acting as a clear analytical tool (Hacklin and Wallnöfer, 2012): therefore it should be in constant transition to catch the changes and new means of value (Battistella et al., 2012).

Amit and Zott suggest two sets of parameters for the definition of BMs: “design elements” that explains how firms do business and “design themes” that explains the value creation sources and the connection of the design elements. Design elements constitute of the activity system “content”, “structure” and “governance”, whereas the design themes include “novelty”, “lock in”, “complementarities” and “efficiency”. Activity system content means the performed activities, structure stands for the linkages between activities and governance answers the question of “who” executes these activities. These activity systems can be designed by means of new contents, structures and governance, standing for the “novelty”, they can base their existence on their capability to include third parties as active players in the model, standing for the “lock-in”, they can be configured basing on the power of the synergies, the power arising from putting together the

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activities, rather than a separate execution, standing for the “complementarities” and can be designed to increase the efficiency, as obvious, standing for the “efficiency” (2009).

The contribution of Casadesus-Masanell and Ricart (2010) distinguishes the concepts of “BM”, “strategy” and “tactic” very clearly. According to them, BM refers to the way the firm operates and creates value; strategy, in turn, refers to the choice of the BM, deciding which one to adopt while competing, whereas tactics become the remaining choices that can be applicable by the firm due to the employed BM.

In this study, the framework selected as a reference to assess and revisit the role of BM is that proposed in Osterwalder (2004): such framework is widely adopted and employed both by practitioners (Osterwalder and Pigneur, 2010) and academics (e.g., see Chesbrough, 2010).

Osterwalder (2004) identifies four dimensions and nine parameters to decompose a business model. According to this framework, a business model should point to four main areas, as the offering, infrastructure, customer and finance. Offering should be included to define the business that the firm is operating in, what kind of a value proposition is transmitted to the market, infrastructure; to define the interoperations of the company and the network it is located in, customer; to define the target customers, the ways to deliver the offering and how to obtain a trustful relationship with them, and finance; to define the revenue generation mechanisms, the cost/ profit structure and the sustainability. The nine parameters defined for the four key dimensions are key activities, key resources, partner network, offering; value proposition, customer; segments, channels, relationships, and finance; cost structure, revenue streams, respectively. The four main dimensions, parameters and their descriptions are incorporated in the following table:

Dimensions	Parameters	Description
Infrastructure	Key activities	Core activities in value creation for customers
	Key resources	Core resources and capabilities to perform the actions necessary to create value for customers
	Partner Network	Cooperative work between two or more companies to create a collective value for customers
Offering	Value Proposition	Bundle of company's products and services that are of value to customers
Customer	Segments	Customers that company would like to reach
	Distribution Channel	Means of interacting with the customer
	Relationships	Link established between the company and its customer
Finance	Cost structure	Representation of all means employed in the model in terms of money
	Revenue streams	The way a company makes money through a variety of revenue flows

Table 1. Osterwalder's (2004) Business Model Ontology

This business model ontology also carries some similarities with the Balanced Scorecard approach developed by Kaplan and Norton (1992) and is said to consist a “starting point” to the Osterwalder’s ontology especially by means of focusing not only financial aspects but covering all (Osterwalder, 2004).

Business Model Ontology	Balanced Scorecard (Kaplan and Norton, 1992)
Product	Innovation and Learning Perspective
Customer Interface	Customer Perspective
Infrastructure Management	Internal Business Perspective
Financial Aspects	Financial Perspective

Table 2. Business Model Ontology and the Balanced Scorecard

The business model design literature is gaining growing interest within the Strategic Management research field (Ghezzi et al., 2010). Although it is intuitive (Bloodgood, 2007), the relationship between strategy, discontinuity and BM is under-investigated. and BM design risks to be a “second-tier” literature stream in Strategic Management (Ghezzi et al., 2010), due to its fragmentation and missing links to more consolidated theories. Recent attempts of proposing the business model concept as an integrative framework for strategy formulation and execution (Richardson, 2008) and to distinguish while at the same time relate the interdependent constructs of business model, strategy, tactics (Casadesus-Masanell and Ricart, 2009), to relate it with the innovation management and theory (Amit and Zott, 2009; Chersbrough, 2009; Teece, 2009), and to consider as a tool for both the current and the dynamic situations (Hacklin and Wallnöfer, 2012) are driving scholars to fill the existing literature gap, though the issue remains undoubtedly open.

The literature takeaways on which this study builds its contribution to the field may be synthesized as follows:

- BM design requires a better integration with traditional strategy analysis models;
- BMs may enable strategy execution and operationalization, and the choice of a given “business model parameters mix” (i.e. specific tactical decisions on the values to be assumed by the nine composing building blocks), directly affects the firm performance;

- BM performance (which in turn shapes the overall firm performance) can therefore be influenced by factors, either exogenous or endogenous, which impact or modify the model's constituting building blocks or parameters.

2.3. Literature Review on Value Network Theory

When we review the literature developed on value creation and value networks, it is seen that the value chain model developed by Michael Porter (Porter, 1985) had a significant influence on the whole research stream. The analysis of the internal activities and the external relations of the firms in order to bring an explanation to the different performances that firms enjoy, has been “chained to the value chain” (Normann and Ramirez, 1994).

The value creation was interpreted as a linear sequence of value adding activities in the Mobile Content market, which made the firms, come up with different market solutions and strategies to gain a vertical control over the chain, as in the case of “walled garden”, developed for mobile portals by Mobile Network Operators (Peppard and Rylander, 2006).

However, the traditional value chain model had been questioned frequently, due to its high focus on competition and inadequacy in considering the vertical and horizontal relations among firms (e.g., see Hakansson and Snehota, 1989; Normann and Ramirez, 1994; Stabell and Fjeldstad, 2002; Allee, 2000; Schieffer, 2005; Huemer, 2006; Peppard and Rylander, 2006; Pil and Holweg, 2006). It is argued that the model belongs to an “industrial age production line model” that is no longer applicable and has been surpassed by today's value network configuration (Allee, 2000). Nowadays, the offerings and the activities cannot be easily characterized with a physical existence and the firms cannot be considered as standalone entities any longer, but the whole network of relationships they are engaged in should be taken into consideration (Huemer, 2006). In addition, these relationships, these interdependencies can be found in several layers and they can have a

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multidirectional nature, as the sequence of activities; horizontal, vertical, diagonal, parallel, simultaneous etc. (Pil and Holweg, 2006).

In the study of Allee, the value networks are defined to include three means of value, as called in the study “currency”, due to the fact that they constitute major roles in exchange. These three currencies are the economic value, knowledge value and the intangible benefits. The economic value exchange is mainly the operations of the enterprise, however not only limited to the selling of the offerings and receiving the payments, but also includes the dynamic relations within the network. The knowledge exchange includes obtaining the knowledge that would support the offering and the complementary service. An example to this currency, is receiving feedback from customers regarding the usage of the product by means of an online forum etc. or feedback that can be useful for new product development project. Finally, the intangible benefits stand for the value that cannot be measured by means of financial or analytical indicators, which are customer loyalty, brand image etc (2000).

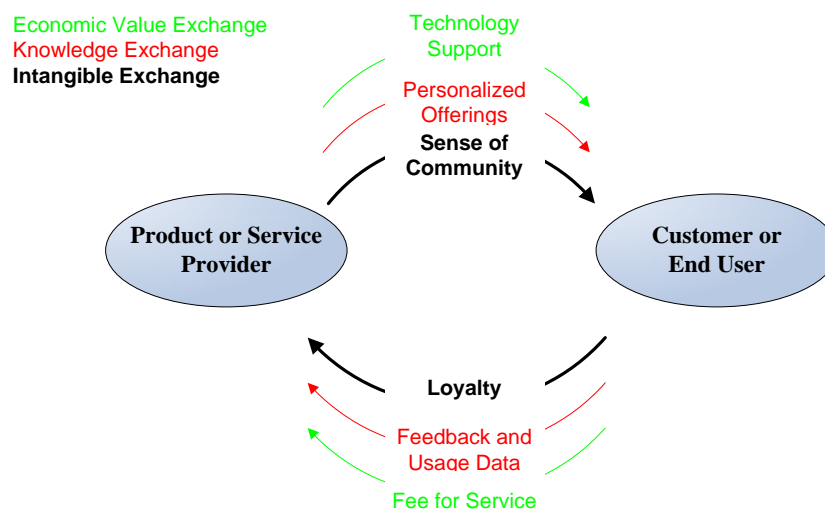


Figure 2. The Value Exchanges (Allee, 2000)

The VN investigation can also use some notions borrowed from the partly overlapped Strategic Networks literature (Gulati et al., 2000). These notions allows us to identify the variables or drivers supporting a thorough description of a network, both from a static perspective, that is identifying the structural characteristics as: focal firm; structural holes; critical network influences; structural equivalences; revenues streams, and from a dynamic one, which considers the network as an evolving system subject to both endogenous and exogenous forces that determine some changes in time (Eggert et al., 2005).

The extensive literature review allows inferring that BM design and VN configuration are seldom related as theoretical concepts, though they appear to be deeply interlinked scaling down to the level of those constructs employed to operationalize such concepts. At a construct level, BM design encompasses VN-related dimensions within its parameters, both in an explicit fashion (e.g. Value Network, Value Network Integration), but more often, in an implicit way (e.g. Connected Activities, Key Activities, Partnership, Vertical Integration, Relationship). Therefore, to reconfigure BMs, the environmental-driven discontinuities in VN should be also understood (Allee, 2000), and BMs should embrace the external changes VN determines as dynamic exchanges within firms, customers, new clusters and new value currencies as “knowledge” and “intangible benefits” (Allee, 2000).

In brief, the cross literature review allows inferring the followings:

- VN structure is claimed to affect BM Model design and performance;
- VN altogether can be seen as a system of interconnected and interplaying BMs of different firms operating in the industry.
- VN configuration is an extension of the value chain which better identifies changes or modifications in the firm’s external environment and in the overall value system (as firms are more and more influenced by mutual interdependencies with other actors in the network);

- A dynamic process of VN mapping of an industry can well support the strategic activity of environmental scanning.

2.4. Literature Review on Resource Management

This part of the literature review will focus on two different concepts that have arisen in the late 80s and throughout the 90s, the Resource-based view (RBV) and the Dynamic Capabilities Approach (DCA). These schools developed as an alternative stance than Porter's (1980) breakthrough work on competitive strategy focusing on industry-related competition, take a new perspective when analysing a firm and its ability to achieving superior performances than its competitors. The key claim from RBV is that the sources of competitive advantage ultimately come from the firm's endowment of internal core resources, competencies, assets and capabilities.

The RBV attempts to convince the managers to first look inside their firms, rather than outside, and defines firms as a unique collection of tangible and intangible resources and competencies (Barney, 1991; Collis and Montgomery, 1995). In this sense, they try to suggest a different perspective than Porter's work that emphasizes the "positioning" as the major source of the competitive advantage, paying full attention on the market attractiveness and the external environment.

If we try to bring an explanation to the main terms of the RBV and DCA schools, we find that "resources" are defined as tangible or intangible assets that can be associated with the firms semi-permanently, which can be the drivers of some advantages, for e.g. their existence can make the competitor to experience higher costs or lower returns (Wernerfelt, 1984).

Core resources and competencies are instead, were described as an overall result of the firms' technology streams and work activities, their specific area of expertise (Hamel and Prahalad, 1990). The RBV approach states that the possession of these significant assets contributes to the competitive advantages of firms and these resources grow in time through application. As a whole,

according to the RBV, strategy becomes the development of an architecture that is cross-functional and cross-SBU, aiming to create a bundle of core resources and competencies. It is also inferred in several studies that the organizations are bundles of strategic resources, proving the drivers of performance differentials among the firms (Barney, 1991; Camelo-Ordaz et. al, 2003).

Capabilities, instead, are defined by Amit and Schoemaker as a firm's intangible capacity in the deployment of the resources through the business processes to obtain a desired output or end (1993).

The Dynamic Capabilities Approach is defined as an extension of the RBV model (Teece et. al, 1997; Hamel and Valikangas, 2003) and tries to explain how a firm can enjoy sustained superior performance in a rapidly changing industry through continuous proactive and reactive (Teece, 2007). The main focus of DCA is finding the firm-specific capabilities that can be the drivers of the competitive advantages and explaining how combinations of competencies and resources can be developed, deployed and protected. The DCA employs both the existing competencies and develops new ones to achieve a dynamic renewal of competencies to adapt to the changing business environment (Amit and Schoemaker, 1993). The same study continues with the argument that the real competitive advantages of a firm can be found in the firm-level distinctive competencies/capabilities. These can be found in the "managerial and organizational processes" meaning the way that a firm operates, in the "positions" meaning specific assets, and the "paths" meaning the strategic alternatives available. The relationship within these is that the competitive advantage mainly derives from the processes, shaped by positions and paths.

However, now the question arises that how is it possible to identify the resources, capabilities etc. that a firm have as valuable or as a foundation to achieve a difficult to imitate and sustainable competitive advantage? According to the study of Collis and Montgomery (1995), there are five prerequisites that a competence/resource should fulfil in order to be considered as core:

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- 1) It should be “inimitable”: It should be hard to be duplicated to prevent the competition to arise. There can be many drivers to achieve this, it can have a “physical uniqueness”, “path dependency”, “economic deterrence” etc.
- 2) It should be “durable”: It should be able to sustain itself for a long period of time.
- 3) It should be “appropriate”: The value that is created should be easily captured by the firm.
- 4) It should be “non-substitutable”: It should not be easily replaced by another similar resource.
- 5) It should have a “competitive superiority”: It should exceed the other resources obtained by competitors.

If we look at the “Strategic Planning” literature stream, to guide us for the identification and assessment of the resources, it is seen that an explicit framework to explain the phenomena is lacking. The well-known framework; the “Value Chain Model” for the internal strategy analysis (Porter, 1985), brings insufficient explanation to tangible and intangible assets of the firms (Hamel and Prahalad, 1994). The strategic planning process studies the effects of dynamicity and volatility on strategy and performance; however, it does not pay much attention to identification of the capabilities and how to perform the DCA assessment (Wu, 2010).

As the previous literature reviews have reflected, in addition to RBV and DCA, another thing that has a deep effect on a firm’s performance is the changes in the environment (Ansoff, 1980). Since the dynamic capabilities are essential in identifying competitive advantage and survive the competition under environmental volatility (Teece et. al, 1997; Eisenhardt and Martin, 2000; Rindova and Kotha, 2001; Zollo and Winter, 2002; Newbert, 2007; Wu, 2007), the influence of volatility and discontinuity on the dynamic capabilities should be also studied carefully. Nevertheless, in the literature stream there are not many studies that analyses the relationships between the environmental changes, the external volatility and discontinuity and the impact of these on resources, capabilities and competences. The studies usually do not include the effect of changes on the R&C&Cs that exist before the discontinuity (the ex ante) and a clear assessment of the how

the changes, innovations etc. reshape or cancel the traditional resources or allow the emergence of the new resources after the discontinuity (the ex post). A recent study done by Wu (2010) suggested that compared to RBV, DCA results better in volatile environments.

The researches should also focus on first-mover and blue ocean strategies, interpreting them as drivers of volatility and discontinuity that would affect the R&C&C endowment and develop guidelines for resource management under such discontinuous situations.

Resource management deals with the set of strategic choices, recommendations and guidelines concerning the orchestration of the firm's resource endowment (Hoopes et al., 2003): resources should hence be managed as a portfolio of assets, deciding which to enhance and defend (if core), which to nurture and monitor (if emerging), and which to hold or divest (if necessary to compete or not core).

It is suggested that the environmental changes has a strong effect on the performance (Ansoff, 1980), however, how these changes can be spotted by the firms? Environmental scanning is a fundamental vehicle in this phenomenon; it is the process of seeking and collecting information about events, trends and changes external to the business in order to guide the company in its future actions (Aguilar, 1967; Fahey and King, 1977). It gains a particular importance in contextual volatility and paradigm discontinuities and leads the way to achieve strategic flexibility (Wernerfelt and Karnani, 1985; Dreyer and Grønhaug, 2004; Rudd et. al, 2008).

As a result it can be said that, firms that possess dynamic capabilities, can effectively enhance their competitive advantages, even they face highly volatile environments and uncertainty (Wu, 2010). However, RBV is also effective and the resources which fulfil the five prerequisites mentioned above, have the power to contribute to the competitive advantages.

There is an explicit relationship between external discontinuity and the internal resource change. The dynamic assessment of R&C&Cs are required in times of a paradigm shift. In order to spot the

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resources, capabilities and competences, the suggested methodology by Collis and Montgomery (1995), can be applied, as a matter of fact, the methodology can also be used for dynamic capabilities. The findings suggest that the resource assessment and resource management under volatile conditions constitute dynamic capabilities for themselves, being essentially important for the success of the firm.

Given the effect of R&C&C change on competitive advantage and performance, the effect of environmental discontinuities on R&C&Cs should go through a continuous observation, by carefully defining the before (the ex ante) and after (the ex post) the discontinuity situations. In order to spot the environmental changes, “environmental scanning” should be performed.

Overall, the RBV is a theory of “firm” and based on the “internal attributes” (Chmielewski and Paladino, 2007), whereas the DCA deals with “the organizational and strategic routines by which firms achieve new resource configurations” (Eisenhardt and Martin, 2000) and “enable the most efficient and competitive use of the firms’ assets” (Chmielewski and Paladino, 2007). In addition, competences are also defined to be “fundamental to organizational renewal and driving force behind strategic change” (Ljungquist, 2007; Prahalad and Hamel, 1989; Wang et al., 2004). These constitute the ability of the firm to generate new resources, new assets, new mechanisms, ways of doing business etc. Therefore, it can be argued that any change in resources, competences and capabilities is a possible enterprise-driven discontinuity.

Literature on RBV and DCA is wide and constantly evolving. For the purpose of this study, the key points here resumed which constitute the theoretical framework are:

- Resources may arise deliberately or emergently as processes, resources, paths, assets etc.;
- Resource status assessment is a dynamic activity, which explains much about the development of the internal/external environment a firm is embedded in. A change in the resource status results in a change in the nature and performances of advantage;

- RM is a process related to strategy execution, and is essential for achieving and sustaining competitive advantage, especially in discontinuous environments;
- Any radical, unexpected modification in the resource endowment core status and in RM consistency with such status can be considered an enterprise-driven discontinuity.

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3. METHODOLOGY

This study on the role of business models, value networks and resource management as a tool to identify discontinuous phenomena and trigger strategic re-planning follows a strategy balancing the inductive and deductive approaches (as in Aarikka-Stenroos and Sandberg, 2012). Such method is supported in Dubois and Gadde (2002) and in Walsham (1995), who suggest modifying a framework derived from the literature with empirical data, thereby allowing new insights to emerge. Throughout the research, theory was hence employed as “part of an iterative process of data collection and analysis” (Eisenhardt, 1989, p.536).

Case study research facilitates holistic understanding of complex phenomena that do not separate easily from their contexts (Halinen and Törnroos, 2005; Yin, 2003) and allows the researcher to thus building new theory – or extending existing theories.

To accomplish the research propositions, a single, in-depth longitudinal case study was performed. The case concerns the influences of discontinuities over the business strategy developed by TIM, a company operating in the mobile telecommunications industry. The case originated from the research performed by a permanent “observatory on Information & Communication Technology and Management”. Consistently with the research methodology employed (Pettigrew, 1988), the firm constituting the theoretical sample was selected as it conformed to the main requirement of the study, where the processes or variables of interest (i.e. discontinuities in resources core status, business model performance and value network configuration) were “transparently observable”.

A single case study methodology allows to provide a thorough, extensive qualitative description and analysis of business strategy under discontinuity with the needed depth and insight, difficult to replicate when considering a wider theoretical sample (McCutcheon and Meredith, 1993; Handfield and Melnyk, 1998), at the expense of generalizability (McGrath, 1982).

The study on the effect of discontinuity shall be inherently longitudinal, in order to compare conditions *ex ante* and *ex post* the change: thanks to the permanent research on the analysed company, the case on which this study is crafted relies on retrospective data collected from 2002 onward. In particular, two waves of semi-structured interviews were carried out in 2008 and 2010, respectively, held with key informants (identified by means of both telephone interviews and secondary sources) involved in the company's strategic planning process as main decision makers.

3.1. Case data gathering

Case data were gathered through both primary and secondary sources.

Face-to-face semi-structured interviews represented the primary source of information. The semi-structured nature of the interviews employed for data collection made it possible to start from some key issues identified through the literature, but also to let any innovative issue emerge from the open discussion (Walsham, 1995; Yin, 2003).

From January to June, 2008, fourteen face-to-face semi-structured interviews were held with seven persons identified as key participants in the firms' strategy definition at different levels. The population of informants included the following top and middle managers: Chief Executive Officer (CEO); Vice President – Mobile Value Added Services (VPM); Marketing & Sales Manager (MSM); four Product Managers (PMs).

The need of assessing the decision making processes of RM, BM design and VN configuring, paying attention to different subunits within the company, led to the adoption of an "embedded" case study (Yin, 2003), with multiple units of analysis, related to the set of "strategic decisions" on RM, BM and VN made to tackle discontinuity.

In order to assess the effects of environment-driven and enterprise-driven discontinuities on the firm's strategy, from January to June, 2010, a second wave of twelve additional interviews were held with six key informants (since one PM left the company in 2009). This further set of interviews

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provided the study with the requested longitude, thus supporting a within-case analysis of discontinuities and their influences.

In order to ensure consistency and comparability among different interviews, the main questions in the research protocol were common for all interviewees, but there were separate questions customized on the specific roles of the respondent, and follow-up questions on the emergent issues. All interviews in the first wave (2008) covered the following dimensions: 1) the overarching business strategy (resulting from the strategic planning process); 2) the resources, competencies and capabilities involved in such strategy, their status with reference to competitive advantage (core vs. not core), and their orchestration at a RM level; 3) the decisions at a BM design level – for this purpose, Osterwalder's (2004) template was employed as a reference framework; 4) the actors, activities and tangible/intangible value streams at a VN configuration level.

In the second wave of interviews (2010), beyond resuming the previous four dimensions, two additional ones were added: 5) the discontinuities (either environment-driven or enterprise-driven) which came into play in the 2008-2010 timespan and affected the overarching business strategy; 6) the discontinuous changes occurred in terms of: resources core status RM guidelines; BM parameters performance; and VN configuration.

As the validity and reliability of case studies rest heavily on the correctness of the information provided by the interviewees and can be assured by using multiple sources or “looking at data in multiple ways” (Eisenhardt, 1989; Yin, 2003), several secondary sources of evidences were employed to supplement the interview data: internal documents, both official (19) and informal (9), study of secondary sources on the firm – research reports (26), Internet pages (94), newsletters (36), white papers (12), newspaper articles (31). This combination of sources allowed to obtain “data triangulation” essential for trustworthiness in qualitative research (Bonoma, 1985).

Though the study was localized on a single and unique firm, thus lacking the generalization of results granted by multiple cases (Meredith, 1998), the width of the literature reviewed and the rigour of the methodology employed allow to mitigate this limitation.

3.2. Case data analysis

The interviews lasted 1 hour 46 minutes on average. The responses from interviewees were first recorded and transcribed; later, following the recommendations from Eisenhardt (1989), a within-case data analysis was carried out, so as to generate the necessary insight on the issues under scrutiny. In this phase, data from different interviews were summarized, interpreted and tabulated from the transcripts, according to the themes related to the theoretical framework (i.e. discontinuity effect on RM, BM and VM).

If any information remained unclear and/or more data was needed, informants were contacted later by telephone for additional questions. Lastly, the case descriptions and results were reviewed and confirmed by the interviewees, to mend any error or bias and ultimately ensure the correctness of interpretations.

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4. CASE

The role of BM design, VN configuring and RM within the business strategic planning process emerges evidently in the TIM case analysed.

The Telecom Italia Group (TIM) is the Italian incumbent mobile network operator. It operates in all the sectors of the advanced communications chain, with highly developed business in fixed-mobile communications and the Internet with the brands Telecom Italia, TIM and Virgilio; multimedia and television (La7, MTV Italia); in the office & system solutions (Olivetti); in research and development (Telecom Italia Lab). It is mainly present in Europe, the Mediterranean Basin and South America. At June 30, 2012, the Telecom Italia Group is the largest fixed telecommunications operator in Italy, with 14.3 mln physical accesses and a broadband portfolio equal to 9 mln accesses (more than 7 mln retail and 1.9 mln wholesale). The Group has also more than 32.2 million mobile telephone lines. Abroad, TIM Brasil is the second largest operator by number of mobile lines (68.9 mln), providing mobile telephone and convergent services. In Argentina, the Group has increased its stake in Telecom Argentina S.A. (reaching an economic interest equal to 22.7%), through which it carries out its main activities (fixed telephony, data transmission and Internet) (Telecom Italia Factsheet, 2012).

The Business Units of the Telecom Italia Group	Operations
Domestic Business Unit	* Domestic operations for voice and data services on fixed and mobile networks for final customers (retail) and other operators (wholesale), operations of international wholesale, and relative support activities
Brazil Business Unit	* Includes mobile and fixed telephone operations in Brazil
Argentina Business Unit	* Includes mobile and fixed telephone operations in Argentina and only mobile operations in Paraguay
Media Business Unit	* Includes telephone network operations and management
Olivetti Business Unit	* Includes manufacturing operations for digital printing systems, office products and IT services
Other Operations	* Includes finance and other minor companies not strictly related to the core business

Table 3. The Business Units and Operations of the TIM Group (TIM Annual Report, 2011)

Since its foundation in 1995 as mobile telecommunications were at an early stage of development, through the years TIM's offer evolved from simple voice and short message services to rich-media value added content and services delivered through the mobile channel. As of 2008, TIM's overarching business strategy for the mobile industry was well described by a statement from its Mobile VP, delivered during the first interview performed:

"[...] we aim at proposing value to our customers through our traditional voice and data messages offer, paired with innovative content and services launched in our mobile portal. [...] two assets are key to achieve success in the market: first, a set of strong internal resources; second, a network or reliable partners".

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This statement, supplemented with the information gathered through the other interviews, allows obtaining a clear picture of how BM, VN and RM had been developed in 2008.

Following Osterwalder's (2004) template, TIM's designed BM was shaped around these building blocks.

1. Offer, with a value proposition bundling the traditional voice and peer-to-peer message offer and value added services;
2. Customers, represented by the mass market of subscribers getting access to such offer through the mobile portal, a virtual distribution channel pre-installed on the devices and uniquely owned by operators, who controlled it in a quasi-monopolistic fashion (e.g. proprietary offer, customer lock-in, partners' dependence on unique operators' assets);
3. Infrastructure, made of: i) key activities related to network management and operations on the one hand, and service commercialization on the other; ii) key resources resting on the possession of physical essential facilities (i.e. mobile network infrastructure, licenses, billing & payment systems, mobile portal as a distribution channel) and of relational assets (i.e. direct customer ownership, brand reputation, relationship with mobile service providers); iii) key partnerships with actors performing the activities of creation, management and promotion of the original content published in the portal;
4. Finance structure, in terms of: i) revenues streams largely coming from direct commercialization of voice and data messaging services, and, to a lesser extent, for indirect selling of value added services from the portal, in partnership with service providers (with revenue sharing agreements regulating the transactions); ii) cost structure with a high share of fixed costs for network investments and management, and littler variable cost for services deployment (most of the expenses are borne by partners).

As partly disclosed by the BM analysis, TIM's VN was configured as a system of value creating activities belonging to different layers: network infrastructure; device provisioning; and service

creation, management and market making. While TIM covered several activities in both network and service layers, it coexisted with other actors in the VN: competing operators with a similar positioning; service providers focusing on the service layer; technology providers, enabling both layers; device manufacturers providing devices; and end users. Value exchanges involved the currencies of services and revenues (e.g. between the operators and end users), knowledge (e.g. between operators and service providers for service co-creation) and intangible benefits (e.g. between operators and device manufacturing for co-branding opportunities).

TIM's resource endowment was made of a set of core resources, competencies and capabilities (as listed for the key activities BM parameter) constituting its competitive advantage, supported by a number of not core assets necessary to operate in the industry (e.g. financial stability, relationships with actors others than service providers). RM hence focused on nurturing or enhancing the core resources, while holding or divesting from the not core ones.

In 2008, the informants argued that the external and internal environments appeared relatively stable, or "*following a turbulent but foreseeable evolutionary trajectory*" (as extracted from the Marketing Manager's words); so the business strategic planning adopted a somewhat incremental approach, assuming a sort of "*continuity with the business as usual*" (Product Manager's interview). However, this situation was to be shaken in the time span 2008-2010 by a number of discontinuities, either external or internal, which would significantly modify the executed strategy's performance. In fact, as the Mobile VP stated in 2011, "[...] *after some shocks, our strategy appeared unfit: we needed to catch up through a newer, better strategy*".

The main environment-driven discontinuities occurring were:

1. Fixed-Mobile-Media convergence, resulting from a long and cross-industry process of technological integration;
2. Device features development, which could enable a radically different offer;

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3. Apple, Inc.'s application store launch as an alternative to the traditional mobile portal channel, carrying deep business implications.

While enterprise-driven discontinuities led to the unexpected and unplanned creation of resources, competencies or capabilities:

1. rise of open innovation capabilities, in response to the growing number of external sources of value (which outperformed internal resources);
2. rise of mobile infrastructure resources, driven by the entry of heterogeneous newcomers, eager to leverage on the mobile network's functionalities to place their offer.

As all the 2010 interviews demonstrated, these changes in business strategy performance could be identified through discontinuities in: business model parameters performance; value network reconfigurations; and resources management recommendations due to resources core status.

For each discontinuity pinpointed, the table below describes how the executed strategy was affected (with reference to the existing BM^1 , VN^1 and RM^1), and what kind of strategic re-planning was triggered (giving rise to the redesigned BM^2 , VM^2 and RM^2).

Discontinuity Environment-driven Enterprise-driven	Impact on executed strategy ($BM^1 - VN^1 - RM^1$)	Strategic re-planning determined ($BM^2 - VN^2 - RM^2$)
Fixed-Mobile-Media convergence (environment-driven)	<ol style="list-style-type: none"> 1. Lowered entry barriers, plethora of new entrants (e.g. web companies, media companies), uncertain fate of mobile incumbents (service providers) ($BM^1 - VN^1$) 2. Redefinition of business area boundaries, rise of new activities, fall of obsolete activities ($BM^1 - VN^1$) 3. Loss of revenues for traditional services (e.g. voice, messaging) (BM^1) 4. Competed-away resources (e.g. relationship with service providers) (RM^1) 	<ol style="list-style-type: none"> 1. BM^2: new key partners, and partial divesture from old partnerships; acceptance of co-opetition dynamics. VN^2: new actors and roles to deal with, new currencies of value and value exchanges 2. BM^2: new key activities, new customer segments and customer relationships, new value proposition. VN^2: recombination of activities coverage, new role in the VN, new value sources and demand 3. BM^2: exploitation of new opportunities to redesign value proposition (e.g. mobile internet connectivity); new revenue schemes (e.g. flat subscriptions) 4. RM^2: new key relational resources in place of obsolete ones (e.g. web companies, media companies)
Devices features development (environment-driven)	<ol style="list-style-type: none"> 1. Multi-network access (mobile, wifi) causing direct competition with internet services ($BM^1 - RM^1$) 	<ol style="list-style-type: none"> 1. BM^2: launch of mobile internet services (e.g. social networking, chats). RM^2: divesture from resources related to obsolete mobile vertical services.
Apple's Application Store launch (environment-driven)	<ol style="list-style-type: none"> 1. Fall of monopolistic control over unique assets (e.g. distribution channel/mobile portal, billing system, customer base), losing their core status and revenue generation potential ($BM^1 - RM^1$) 2. Enhanced role of developers and device manufacturers (VN^1) 	<ol style="list-style-type: none"> 1. BM^2: launch of a store (TIM appstore), gradual transition of the value proposition from the portal to the store to create new sources of revenues, more independence left to partners, fairer revenue sharing agreements. RM^2: partial divesture from previously core resources (portal), and nurturing of emerging resources (store) 2. VN^2: reconfiguration of the network of relationships to include or strengthen value exchanges with developers (for applications) and device manufacturers (for enabling their stores)
Rise of open innovation capabilities (enterprise-driven)	<ol style="list-style-type: none"> 1. Unexpected rise of dynamic capabilities related to external innovation orchestration ($BM^1 - RM^1$) 	<ol style="list-style-type: none"> 1. $BM^1 - RM^1$: decreased importance of internal resource gathering, integration of open innovation processes/procedures/paths within the business strategy, to collect external sources of value
Rise of mobile infrastructure resources (enterprise-driven)	<ol style="list-style-type: none"> 2. Unexpected rise of demand for exploiting the infrastructure functionalities (e.g. localization) for partners' offer enablement (e.g. location-based services) ($BM^1 - RM^1$) 	<ol style="list-style-type: none"> 2. ($BM^1 - RM^1$): network infrastructure rising to a core status and directly contributing to competitive advantage; design of a business-to-business value proposition for partners interested in leveraging on mobile functionalities to launch a mobile service offer

Table 4. Effects of the discontinuities on the strategies and the re-planned strategies

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All these re-planning actions may be summarized by another extract, taken from the 2010 interviews to the CEO:

“On the consumer side, TIM is focusing on managing an innovative mobile internet and applications offer, following an open approach to third parties. [...] on the business side, we make the most out of our assets to deliver a B2B offer to any potential partner”.

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5. CASE DISCUSSION AND MODEL

In the case analysed, information gathered from the respondents allow to infer that, in the period 2008-2010, the company had gone through a period of deep discontinuity. Such discontinuity had an impact on the way business strategy was executed; this, in turn, determined the need for a re-planning process to get the company back on track.

Interestingly, when discussing how these changes impacted on the company's strategy, all statements from informants ended up referring to elements related to business model design, value network configuration and resource management.

These statement from multiple informants at different organizational levels, supported by the secondary sources collected, proved this study's argument that BM, VN and RM are the strategic tools through which a company executes its planned strategy, and as such, are the breakwaters which first bear the impact of and are affected by discontinuous waves of change.

The case data, analysed and interpreted through the lenses of the theoretical framework drawn from the literature review, are presented in Table 5 as the study's original findings. These findings are organized taking into consideration the following elements.

1. Strategic tool considered (both as concept and construct);
2. Revisited role for the tool at a business strategy level (where initial theoretical arguments and suggestions extracted from the literature are confirmed, modified or extended through the case study empirical analysis);
3. General template listing strategic impacts and implications on the strategic tool determined by either environment-driven or enterprise-driven discontinuity, explaining what unplanned and unexpected variations to expect when a discontinuous event occurs (the items

considered are drawn and extended from the literature and the case-specific impacts – see Table 4, Impact on executed strategy);

4. Methodology and guidelines for strategy monitoring and discontinuity assessment, to: determine, for each tool, the variables which are to be controlled for spotting a discontinuity; drive the identification and evaluation of unexpected, unplanned variations for the controlled variable; and subsequently trigger a business strategic re-planning process affecting the tool under scrutiny and the overall strategy (arguments are originally reinterpreted from a combination of literature-derived hints and case analysis – see Table 4, Strategic re-planning determined).

Strategic Tool	Revisited role	Strategic impacts and implications for discontinuity (environment/enterprise-driven)	Variations to control for strategy monitoring and discontinuity assessment
Business Model (BM)	<p>BM enables strategy execution and operationalization.</p> <p>The choice of a given “business model parameters mix” (i.e. specific tactical decisions on the values to be assumed by the nine composing building blocks) affects the firm performance.</p> <p>BM performance can be influenced by factors, either exogenous or endogenous, which impact or modify the model’s constituting building blocks or parameters: thus, it may serve as a tool to spot discontinuities.</p>	<p>Unplanned, unexpected change in:</p> <ul style="list-style-type: none"> - Value proposition (products/services value; performances/features; needs/problems addressed; bundles) (P1) - Customer segments (mass/niche market; segmentation; diversification; multi-sided markets) (P2) - Customer relationships (self-service; automated; community; co-creation) (P3) - Channels (direct/indirect; specialized/shared; internal/external; integration with customer) (P4) - Key activities (tangible/intangible; value creating/destroying) (P5) - Key resources (tangible/intangible; physical/intellectual/human/financial) (P6) - Key partners (partners; suppliers; activities performed; inputs acquired) (P7) - Revenue streams (pricing; money from sale/fee/subscription; revenue sharing) (P8) - Cost structure (fixed/variable; drivers; economies of scale/scope/learning) (P9) 	<p>Variable: BM parameter performance or value assumed (for each of the nine parameters identified, BM (P1-9))</p> <p>If:</p> <ul style="list-style-type: none"> - BM (P1-9) performance falls outside of a “value range” (planned at a BM design phase and confirmed by the business as usual); and - the performance variation is radical and appears stable (or subject to a visible trend), not determined by contingent fluctuations <p>Then:</p> <ul style="list-style-type: none"> - A discontinuity is taking place; - Strategic re-planning is required at a business strategy level, with focus on BM redesign
Value Network (VN)	<p>VN, as a concept and construct, is closely related with BM.</p> <p>VN configuration and BM design mutually affect each other: the VN altogether can be interpreted as a system of interconnected and interplaying BMs of different firms operating in the industry.</p> <p>VN supports the identification of changes in the firm’s external environment and in the overall value system. A</p>	<p>Unplanned, unexpected reconfiguration of:</p> <ul style="list-style-type: none"> - Activities (tangible/intangible; value creating/destroying; emerging/falling) - Layers (emerging/falling sets of activities; bundling of processes borrowed from converging industries, enhancing/replacing old processes) - Activities combinations and roles (reshaped coverage of activities; new roles for incumbents/newcomers) - Actors involved (new entrants; exit of incumbent players) - Value exchanges (emerging/falling relationships among actors) - Currencies of value (goods/services and revenues; knowledge, intangible benefits) - VN structure (focal firm; structural holes; critical network influences; 	<p>Variable: VN configuration, defined as the interrelation and strategic interplay of different business models adopted by different firms operating within the business area (e.g. R(BM1-BM2): VN relationship between Firm1, with a given BM1, and Firm2, with a given BM2)</p> <p>If:</p> <ul style="list-style-type: none"> - VN relationship RBM1-BM2 is radically restructured (in terms of, e.g.: entry or exit of market players, emerging activities,

	dynamic process of VN mapping of an industry facilitates the strategic activity of environmental scanning and discontinuity assessment.	structural equivalences; revenues streams) <ul style="list-style-type: none"> - VN dynamics (lock-in/out effects; learning races) - Governance of strategic interdependencies/relationships (competition, partnership, alliance, co-opetition) 	different governance of interdependencies among firms) Then: <ul style="list-style-type: none"> - A discontinuity is taking place; - Strategic re-planning is required at a business strategy level, with focus on VN reconfiguration
Resource Management (RM)	Resources, competencies and capabilities endowment is made of tangible/intangible assets, processes, paths, routines, approaches, relationships, which may rise deliberately or emergently. The management of such endowment (RM choices) is closely related to strategy execution. Resource core status assessment is at the root of competitive advantage: a change in the status results in a change in the nature and performances of competitive differentials. RM is a dynamic activity, which explains much about the development of the internal/external environment a firm is embedded in.	Unplanned, unexpected modification of: <ul style="list-style-type: none"> - Resource endowment (rise/fall of resources/competencies/capabilities) - Resource status (core; not core; un/necessary to compete) - Resource contribution to competitive advantage (present/absent; rising/dropping/stable; cost/value competitive differentials supported) - Resource response to planned RM recommendations (invest/hold/divest) 	Variable: RM status, defined as the core-not core condition of each Resource (x, y,..., z) (identified in the planned resource endowment) resulting from the application of the five core tests (Collis and Montgomery, 1995) If: <ul style="list-style-type: none"> - Resource (x) modifies its status (passing from core to not core or <i>vice versa</i>) and contribution to competitive advantage; and/or - RM planned recommendations are inconsistent with renewed Resource (x) status Then: <ul style="list-style-type: none"> - A discontinuity is taking place; - Strategic re-planning is required at a business strategy level, with focus on resource endowment and RM recommendations

Table 5. The original findings of the study

On the basis of these findings, a conclusive approach linking business strategic planning under discontinuity with BM, VN and RM is synthesized and proposed in the model below.

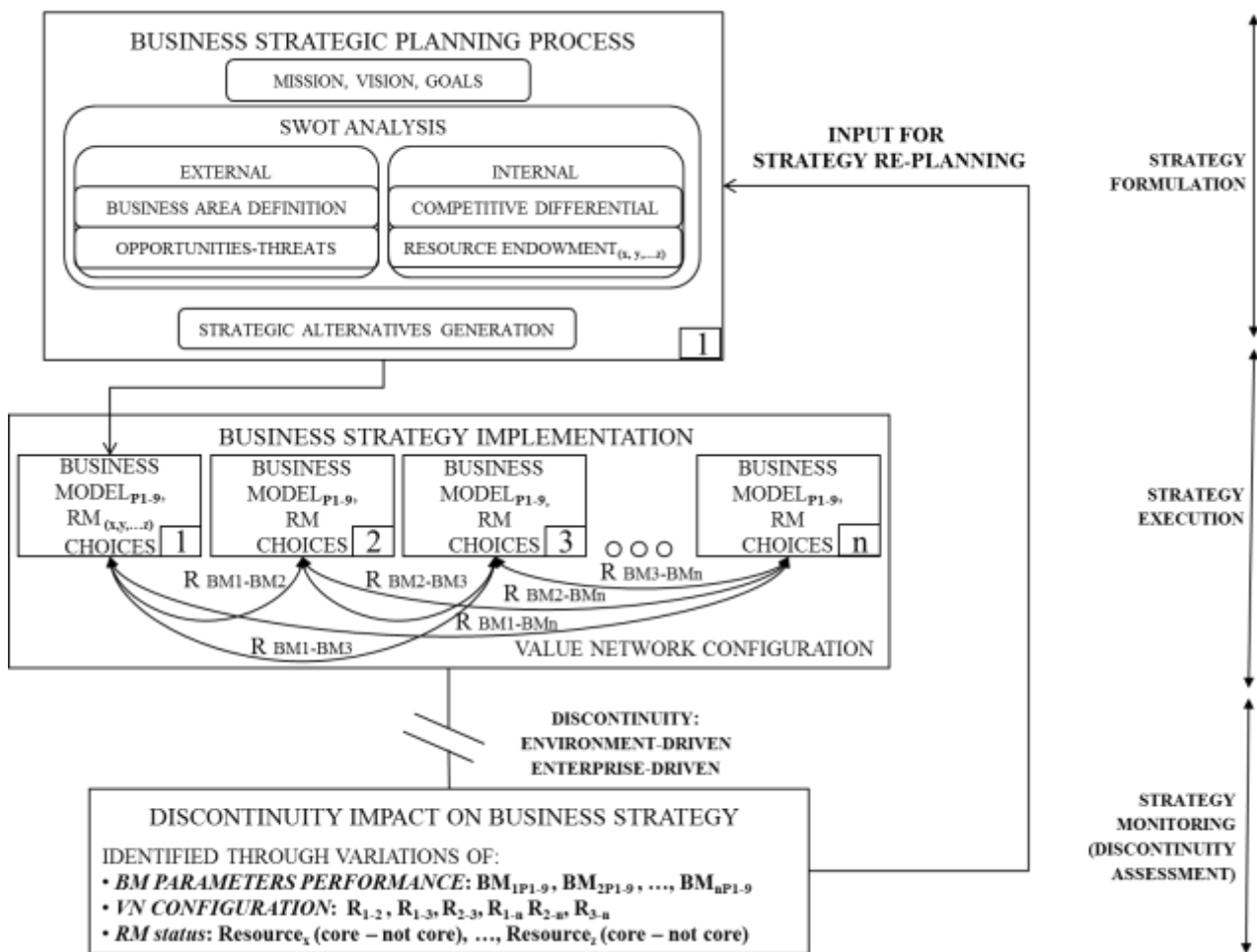


Figure 3. The proposed model for Business Strategic Planning under discontinuity

Complementing the inferences collected in Table 4, the model argues that the traditional business strategic planning process can be extended to explicitly encompass the phases of strategy operationalization and discontinuity assessment. The resulting process is hence constituted by three main phases:

1. Strategy formulation;
2. Strategy execution;
3. Strategy monitoring (discontinuity assessment).

Strategy formulation refers to the traditional planning activity (see, e.g. Lorange, 1980), which relies on the Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis to define: business area boundaries and external attractiveness; internal competitive differentials together with existing resource endowment (i.e., a set of resources (x, y, \dots, z)) supporting competitive advantage (Sheehan and Foss, 2007).

Strategy formulation ends with the generation of strategic alternatives and the selection of the overall business strategy to implement.

Strategy formulation is then followed by strategy execution. The study carried out allows to infer that such step is mainly related to a concretization of strategy in terms of:

- the firm's designed BM, which operationalizes the selected business strategy according to a set of significant parameters or building blocks ($BM_{(p1, p2, \dots, p9)}$), and drives performance;
- the VN Configuration, defined as the interrelation and strategic interplay (VN relationship $R_{(BMn-BMm)}$) of different BMs adopted by different firms operating within the business area;
- the RM choices and recommendations to exploit the previously identified resources, competencies and capabilities endowment ($RM_{(x, y, \dots, z)}$) according to: the selected strategy (e.g. mission and vision, business area definition and opportunities/threats to deal with, generic strategy to follow, competitive differentials to pursue); the adopted BM; and the business area's VN configuration.

The strategy monitoring or discontinuity assessment phase is meant to tackle the impact of discontinuity and change on the firm's strategy and on its outcomes.

As anticipated in the literature review, the nature of discontinuity can be twofold:

- environment-driven, if triggered by outbound phenomena and events which are not directly controllable by the single firm;

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- enterprise-driven, if unexpectedly originating from unplanned inbound processes or dynamics.

Assuming that strategy is concretely executed through designing a BM, configuring a set of VN relationships and leveraging/managing a portfolio of resources through an adequate RM, the further conclusive argument raised is that when discontinuity arises, it ultimately impacts on the outcomes of the previous three elements.

Being such outcomes, respectively:

- performance – resulting from the BM application;
- VN configuration – resulting from the interplay of strategic relationship among different firms;
- resources core status – that is, their ability to contribute in creating a sustainable competitive advantage – resulting from the correct resource management process;

a discontinuity in place can be spotted from the assessment of:

- BM performance radical variations ($BM_{(P1, P2, \dots, P9)}$)– outside a given range of values planned at the BM design stage for each and every BM parameter;
- VN reconfiguration ($R_{(BMn-BMm)}$) – in terms of discontinuous restructuring of strategic relationships among different firms' BMs;
- RM modifications – in terms of resource core status ($Resource_{(x, y, \dots, z)}$: core – not core) and contribution to competitive advantage; and consistency of RM choices with renewed $Resource_{(x, y, \dots, z)}$ status.

Whenever a discontinuity is identified through such analysis of variations, the overall business strategic alternative currently pursued by the firm – and executed through its BM, its choice of collocation within the VN and its policies for RM – may result inconsistent or misaligned with reference to the newly emerged post-discontinuity internal and external context. Therefore, in order

to maintain the adequate strategic fit (Grant, 1991), strategic re-planning appears necessary. The variations of BM, VN and RM hence become a “vector” of inputs for a new strategic re-planning process meant to take into fair account the discontinuous event.

As a whole, according to the model presented above, the constructs of BM and VN, together with RM, are originally reinterpreted in a new role within the business strategic planning process, since they serve as tools to spot any exogenous or endogenous discontinuity, consequently triggering a process of re-planning on the basis of the newly emerging context.

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6. CONCLUSION

This study aimed at illustrating how business model design, value network configuration and resource management are interplaying concepts and constructs with a significant role within the strategic planning process at a business level: such revisited role is even more evident when the business environment is perturbed by discontinuity.

The study's contribution may be valuable for both researchers and practitioners in the field of Strategic Management.

Theoretical implications range from the collocation of the strategic tools investigated in the overall business strategic planning process, to a broader proposal for formalization and acceptance of such advancing tools in the Strategic Management mainstream.

The model crafted attempts to frame BM, VM and RM in the strategic planning research stream. It revives the debate on planning, by calling for a redesign and updated of this process to explicitly include these three theories and related models.

Despite these theories had been underestimated for their fragmentation – and often considered more of a “buzzword”, a miscellaneous melting pot, rather than a possible baseline for sound strategy analysis – this study argues that they should rise as advancing tools for capturing business strategy fit and competitive advantage dynamics, in particular when applied to discontinuous contexts.

BM, VN and RM are a manifestation of strategy execution. A revealing quote from one informant specifically confirms this argument with reference to BM design:

“Strategy getting down-to-earth: that’s what a business model is”.

Moreover, they are tools for strategy monitoring and control, to re-plan when the internal or external environments have changed to an extent to which the former strategy is not adequate any more. These tools should be coupled with the budgeting process traditionally used to evaluate performance gaps, as budgeting alone, with its fixed deadlines, may be unsuitable to spot and respond to unexpected changes.

As such, they may deserve to receive further formalization and acceptance in the élite of Strategic Management theories.

Implication for managers relate to the practical adoption of BM, VN and RM as strategy analysis tools.

Though several theories hold that managers should adopt a deliberate strategy explicitly meant to catalyse continuous or radical innovation (and the subsequent discontinuities) (e.g. Hamel, Prahalad, 1994; Kim and Mauborgne, 2004), managers may have to face that a fully proactive approach towards uncertainty (i.e. purely innovation-led) is virtually impossible. In practice, discontinuous events may either be clearly environment-driven, or go well beyond the single firm's deliberateness; or the discontinuity may indeed be enterprise-driven, but substantially unexpected and only implicitly embedded in the overall strategy.

Managers should then take a proactive stance anytime such option is feasible, pushing to lead change; but they also need not disregard a refined reactive stance, which is good at spotting discontinuities of any kind, and act upon them to re-plan the former strategy.

What can be inferred and generalized from literature-derived hints and the empirical analysis through the longitudinal case study is that the proposed model that integrates BM, VN and RM can support the managerial actions of: execute the planned strategy; monitor its performance; spot discontinuities (through a detailed template or checklist of possible variations in the controlled variables); operationalize the resulting uncertainties; and drive a re-planning process.

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On the basis of these arguments, the study suggests to include BM, VN and RM within the set of strategy analysis concepts and constructs actually used by managers, with a specific role as tools to obtain an indication of how strategy is being implemented and individuate discontinuities determining a significant effect on the overall firm's performance. These models for strategic control and monitoring may either give a "green light" to top managers, signalling their strategy is well implemented, or send them a clear "red alert" message that strategic re-planning and realignment is most needed.

To conclude, as any research striving to frame reality in a model, this study is not without limitations, which mainly derive from any potential observer bias in the activities of case data gathering and analysis, and from the need to generalize arguments drawn from a single case study. Though the rigorous methodology employed attenuates these limitations, future research avenues should lead to validate findings in different contexts and with other firms' samples.

7. REFERENCES

Aarika-Stenroos, L. & Sandberg, B. (2012). From new product development to commercialization through network, *Journal of Business Research*, **65**(2), 198-206.

Aguilar, F.J. (1967). *Scanning and Business Environment*, New York: Macmillan.

Allee, V. (2000). Reconfiguring the Value Network, *Journal of Business Strategy*, **21**(4), July-Aug 2000.

Amit, R. & Schoemaker, P.J.H. (1993). Strategic Assets and Organizational Rent, *Strategic Management Journal*, **14**(1), 33-46.

Amit, R. & Zott, C. (2001). Value creation in e-business, *Strategic Management Journal*, **22**(6-7), 493–520.

Anderson, P. & Tushman, M.L. (1990). Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change, *Administrative Science Quarterly*, **35**(4), 604-633.

Ansoff, H.I. (1985). *Corporate Strategy*, London: Penguin Books.

Ayres, R.U. (2000). On Forecasting Discontinuities, *Technological Forecasting and Social Change*, **65**, 81-97.

Ballon, P. (2007). Business modelling revisited: the configuration of control and value, *info*, **9**(5), 6–19.

- Barney, J. (1991). Firm resource and sustained competitive advantage, *Journal of Management*, **17**(1), 99-120.
- Battistella, C., Biotto, G. & De Toni, A.F. (2012). From design driven innovation to meaning strategy, *Management Decision*, **50**(4), 718-743.
- Bloodgood, J.M. (2007). The business planning process: maintaining strategic fit, *Strategic Change*, **16**(1-2), 33-41.
- Bonoma, T.V. (1985). Case Research in Marketing: Opportunities, Problems, and a Process, *Journal of Marketing Research*, **22**, 199-208.
- Brooks, H. (1986). The typology of surprises in technology, institutions, and development, in W.C.
- Clark, R.E. Munn (Ed.), *Sustainable Development of the Biosphere*, Cambridge University Press, Cambridge, UK, 1986, 325-350.
- Camelo-Ordaz, C., Martin-Alcazar, F. & Valle-Cabrera, R. (2003). Intangible Resources and Strategic Orientation of Companies: An Analysis in the Spanish Context, *Journal of Business Research*, **56**(2), 95-103.
- Casadesus-Masanell, R. & Ricart, J. (2010). From strategy to business models and onto tactics, *Long Range Planning*, **43**(2-3), 195-215.
- Chesbrough, H. (2010). Business Model Innovation: Opportunities and Barriers, *Long Range Planning*, **43**(2-3), 354-363.

Chmielewski, D.A. & Paladino, A. (2007). Driving a Resource Orientation: Reviewing the Role of Resource and Capability Characteristics, *Management Decision*, **45**(3), 462-483.

Christensen, C.M. (1997). *The Innovator's Dilemma. When New Technologies Cause Great Firms to Fail*, Boston, MA: Harvard Business School Press.

Chudoba, K.M., Wynn, E., Lu, M. & Watson-Manheim, M.B. (2005). How Virtual Are We? Measuring Virtuality and its Impact in a Global Organization, *Info Systems Journal*, **15**, 279-306.

Collis, D. J. & Montgomery, C. A. (1995). Competing on Resources: Strategy in the 1990s, *Harvard Business Review*, 119-128.

Deeg, J. (2007). Organizational discontinuity: Evolutionary, revolutionary and re-evolutionary change, Paper presented at the 25th Standing Conference on Organizational Symbolism, 1-4 July 2007, Ljubljana, Slovenia, available at: http://www.fernuni-hagen.de/weibler/download/organizational_discontinuity_full_paper.pdf (accessed 20 April 2012).

Demil, B. and Lecocq, X. (2010), "Business Model Evolution: In search of Dynamic Consistency", *Long Range Planning*, Vol. 43 No. 2-3, pp. 227-246.

DeSarbo, W.S., Di Benedetto, C.A., Song, M. & Sinha, I. (2005). Revisiting the Miles and Snow strategic framework: uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance, *Strategic Management Journal*, **26**(1), 47-74.

- Dreyer, B. & Grounhaug, K. (2004). Uncertainty, Flexibility and Sustained Competitive Advantage, *Journal of Business Research*, **57**, 484-494.
- Drucker, P.F. (1968). *The Age of Discontinuity*, New York: Harper and Row
- Dubois, A. & Gadde, L.E. (2002). Systematic combining: an abductive approach to case research, *Journal of Business Research*, **55**(7), 553-560.
- Ebrahimi, B. P. (2000). Perceived Strategic Uncertainty and Environmental Scanning Behavior of Hong Kong Chinese Executives, *Journal of Business Research*, **49**(1), 67-77.
- Eggert, A., Ulaga, W. & Schultz, F. (2005). Value creation in the relationship life cycle: a quasi-longitudinal analysis, *Industrial Marketing Management*, **35**(1), 20-27.
- Ehrnberg, E. (1999). On the definition and measurement of technological discontinuities, *Technovation*, **15**(7), 437-452.
- Eisenhardt, K. M. (1989). Building theories from case study research, *Academy of Management Review*, **14**(4), 532-550.
- Eisenhardt, K.M. & Martin, J.A. (2000). Dynamic Capabilities: What Are They?, *Strategic Management Journal*, **21**(10-11), 1105-1021.
- Fahey, L. & King, W.R. (1977). Environmental Scanning for Corporate Planning, *Business Horizons*, **20**(4), 61-71.

Ghezzi, A., Balocco, R. & Rangone, A. (2010). How to get Strategic Planning and Business Model Design wrong: the case of a Mobile Technology Provider, *Strategic Change*, **19**(5-6), 213–238.

Gulati, R., Nohria, N. & Zaheer, A. (2000). Strategic Networks, *Strategic Management Journal* 2000, **21**, 203-215.

Grant, R.M. (1991). *Contemporary Strategy Analysis. Concepts, Techniques, Applications*, Oxford: Blackwell.

Hacklin, F. and Wallnöfer, M. (2012). The business model in the practice of strategic decision making: insights from a case study, *Management Decision*, **50**(2), 166-188.

Hakansson, H. & Snehota, I. (1989). No business is an island: the network concept of business strategy, *Scandinavian Journal of Management*, **5**(3), 187-200.

Halinen, A. & Törnroos, J.Å. (2005). Using case methods in the study of contemporary business Networks, *Journal of Business Research*, **58**(9), 1285-1297.

Hamel, G. and Prahalad, C.K. (1994), *Competing for the future*, Harvard Business School Press, Boston, Massachusetts.

Hamel, G. & Valikangas, L. (2004). The quest for resilience, *Harvard Business Review*, **81**(9), 52-63.

Handfield, R.S. & Melnyk, S.A. (1998). The scientific theory-building process: a primer using the case of TQM, *Journal of Operations Management*, **16**(4), 321-339.

Hedman, J. & Kalling, T. (2003). The business model concept: theoretical underpinnings and empirical illustrations, *European Journal of Information Systems*, **12**(1), 49-59.

Hoopes, D.G, Madsen, T.L. & Walker, G. (2003). Guest editors' introduction to the special issue: why is there a resource-based view? Toward a theory of competitive heterogeneity, *Strategic Management Journal*, **24**(10), 889–902.

Huemer, L. (2006). Supply Management. Value creation, coordination and positioning in supply relationships, *Long Range Planning*, **39**(2), 133-153.

Johnson, M.W., Christensen, C.M. & Kagermann, H. (2008). Reinventing your business model, *Harvard Business Review*, December, 50–59.

Kaplan, R.S. & Norton, D.P. (1992). The Balanced Scorecard: Measures that Drive Performance, *Harvard Business Review*, January-February, 71-79.

Kim, W.C. & Mauborgne, R. (2005). *Blue ocean strategy*, Boston, MA: Harvard Business School Press.

Lester, D. & Parnell, J. (2007). *Organizational Theory: A Strategic Approach*, Mason, OH: Thomson.

Ljungquist, U. (2007). Core competency beyond identification: presentation of a model, *Management Decision*, **45**(3), 393-402.

Lorange, P. (1980). *Corporate planning*, Englewood Cliffs, NJ: Prentice Hall.

McCutcheon, D.M. & Meredith, J.R. (1993). Conducting case study research in operation management, *Journal of Operation Management*, **11**(3), 239–256.

McGrath, J.E. (1982). Dilemmatics: The study of research choices and dilemmas, in McGrath, J.E., Martin, J., Kulka, R.A. (Ed.), *Judgement calls in research*, Beverly Hills: Sage Publications, 69-102.

Meredith, J. (1998). Building operations management theory through case and field research, *Journal of Operations Management*, **16**(4), 441–454.

Newbert, S.L. (2007). Empirical Research on the Resource-Based View of the Firm: An Assessment and Suggestions for Future Research, *Strategic Management Journal*, **28**(2), 121-146.

Normann, R. & Ramirez, R. (1994) *Designing Interactive Strategy: From the Value Chain to the Value Constellation*, Chichester: John Wiley & Sons.

Osterwalder, A. (2004). The Business Model Ontology. A proposition in a design science approach, PhD thesis, École des Hautes Études Commerciales de l'Université de Lausanne.

Osterwalder, A. & Pigneur Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*, Wiley.

Parnell, J.A., Lester, D., Long, Z. and Koseoglu, M.A. (2012), "How Environmental Uncertainty Affects the Business Strategy-Performance Link in SMEs: Evidence from China, Turkey and the United States", *Management Decision*, Vol. 50 No. 4, pp. 546-568.

Peppard, J. & Rylander, A. (2006). From Value Chain to Value Network: an Insight for Mobile Operators, *European Management Journal*, **24**(2), 128-141.

Pettigrew, A. (1988). *The Management of Strategic Change*, Blackwell:Oxford.

Pil, F.K. & Holweg, M. (2006). Evolving from value chain to value grid, *MIT Sloan Management Review*, **47**(4), 72-80.

Porter, M.E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: Free Press.

Porter, M.E. (1985). *Competitive advantage: Creating and sustaining superior performance*, New York: Free Press.

Prahalad, C.K. (1998). Managing Discontinuities: The Emerging Challenges, *Research Technology Management*, **41**(3), 14-22.

Prahalad, C.K. and Hamel, G. (1989), *Competing for the Future*, Harvard Business School Press, Cambridge, MA.

Rappa, M. (2001). *Business Models on the Web: Managing the digital enterprise*, North Carolina State University.

- Richardson, J. (2005). The Business Model: An Integrative Framework for Strategy Execution, *Strategic Change*, **17**(5-6), 133-144.
- Rindova, V. & Kotha, S. (2001). Continuous Morphing: Competing Through Dynamic Capabilities, Form and Function, *Academy of Management Journal*, **44**(6), 1263-1280.
- Romanelli, E. & Tushman, M.L. (1986). Inertia, Environments and Strategic Choice: A Quasi-Experimental Design for Comparative Longitudinal Research, *Management Science*, **32**, 608-621.
- Rudd, J.M., Greenley, G.E., Beatson, A.T. & Lings, I.N. (2007). Strategic Planning and Performance: Extending the Debate, *Journal of Business Research*, **61**, 99-108.
- Schieffer, A. (2005). Value Networks: How Organizations Really Work, *Knowledge Management Research & Practice*, **2**, 194-199.
- Schreyögg, G. & Steinmann, H. (1987). Strategic Control: A New Perspective, *The Academy of Management Review*, **12**(1), 91-103.
- Schumpeter, J.A. (1942). *Capitalism, Socialism and Democracy*, New York: Harper & Brothers.
- Sheehan, N.T. & Foss, N.J. (2007). Enhancing the prescriptiveness of the resource-based view through Porterian activity analysis, *Management Decision*, **45**(3), 450 – 461.
- Stabell, C. & Fjeldstad, Ø. (2002). Configuring value for competitive advantage: on chains, shops, and networks, *Strategic Management Journal*, **19**(5), 413-437.

Tapascott, D., Ticoll, D. & Lowy, A. (2000). *Digital Capital: Harnessing the Power of Business Webs*, Boston: Harvard Business School Press.

Teece, D.J. (2010). Business Models, Business Strategy and Innovation, *Long Range Planning*, **43**(2-3), 172-194.

Teece, D.J., Pisano, G. & Shuen, A. (1997). Dynamic Capabilities and Strategic Management, *Strategic Management Journal*, **18**, 509-533.

Telecom Italia. (2012). Telecom Italia Group Fact Sheet 1H 2012, retrieved on 2012/08/05 at: [<http://www.telecomitalia.com>].

Telecom Italia. (2011). Telecom Italia Group Annual Report 2011, retrieved on 2012/08/05 at: [<http://www.telecomitalia.com>].

Tushman, M.L. & Anderson, P. (1990). Technological Discontinuities and Organizational Environments, *Administrative Science Quarterly*, **31**(3), 439-465.

Tushman, M.L. & Romanelli, E. (1985). Organizational Evolution: A Metamorphosis Model of Convergence and Reorientation, Cummings, L.L. & Staw, M.B. (Ed), *Research in Organizational Behaviour*, Greenwich, CT: JAI Press, **7**, 171-222.

Timmers, P. (1998). Business models for electronic commerce, *Electronic Markets*, **8**(2), 3-8.

Van Dijk, M. & Van Geert, P. (2007). Wobbles, Humps and Sudden Jumps: A Case Study of Continuity, Discontinuity and Variability in Early Language Development, *Infant and Child Development*, **16**, 7-33.

Van Notten, Ph.W.F., Slegers, A.M. & Van Asselt, M.B.A. (2004). The future shocks: On discontinuity and scenario development, *Technological Forecasting and Social Change*, **72**(2), 175-194.

Vernon, R. & Wells, L.T. (1986). *Manager in the International Economy*, Englewood Cliffs, NJ: Prentice Hall.

Walsham, G. (1995). Integrative Case Studies in IS Research: Nature and Methods, *European Journal of Information Systems*, **4**(2), 74-81.

Wang, Y., Lo, H.P. & Yang, Y. (2004). The constituents of core competencies and firm performance: evidence from high-technology firms in China, *Journal of Engineering and Technology Management*, **21**(4), 49-80.

Watson-Manheim, M.B., Chudoba, K.M. & Crowston, K. (2002). Discontinuities and continuities: a new way to understand virtual work, *Information Technology & People*, **15**(3), 191-209.

Weill, P. & Vitale, M. (2001). *Place to Space: Migrating to E-Business Models*, Boston, MA: Harvard Business Press.

Wernerfelt, B. (1984). A Resource-Based View of the Firm, *Strategic Management Journal*, **5**(2), 171-180.

Wernerfelt, B. & Karnani, A. (1985). Multiple Point Competition, *Strategic Management Journal*, **6**, 87-96.

Wu, L. (2010). Applicability of the resource-based and dynamic-capability views under environmental volatility, *Journal of Business Research*, **63**, 27-31.

Wu, L.Y. (2007). Entrepreneurial Resources, Dynamic Capabilities and Start-Up Performance of Taiwan's High-Tech Firms, *Journal of Business Research*, **63**(1), 27-31.

Yin, R. (2003). *Case Study Research: Design and Methods*, Thousand Oaks, CA: Sage Publishing.

Yu, C.C. (2001). An integrated framework of business models for guiding electronic commerce applications and case studies, in *Electronic Commerce and Web Technologies*, Berlin: Springer, 111–120.

Zollo, M. & Winter, S. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities, *Organization Science*, **13**(3), 339-351.