A REFERENCE FRAMEWORK FOR
STRATEGY ANALYSIS IN THE
MOBILE TELECOMMUNICATIONS INDUSTRY

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A PhD Thesis is a piece of work of such magnitude I wouldn’t have been able to complete it without the generous help and support of so many people. First, I would like to express my gratitude to Prof. Andrea Rangone for welcoming me in the research group at Politecnico di Milano and at “Osservatori”, as well as for the thorough support he granted me throughout my PhD period. I’m deeply grateful to Ing. Filippo Renga, for his constant guidance through the “wilds” of the Mobile Industry, as well as for our solid friendship started many years ago. I also wish to thank Prof. Mariano Corso for his valuable advices and for giving me the chance to feed my profound teaching vocation from the very beginning of my PhD program; and Prof. Raffaello Balocco, for his friendship and valuable contribution in my Academic and Research activity. I am also grateful to company representatives who granted their inputs to the research.

Eventually, I would like to thank all the people I met and spent some time with during this endeavour: all the PhD Students and Researchers of the Department, of ICT & Management Observatories, and of other institutions, in Italy or abroad. Colleagues, but most of all, friends. Thank you guys.

Antonio
Alla mia mamma, al mio papà, alla mia sorellina,
l’origine da cui sono partito, e la destinazione a cui sempre farò ritorno. La ragione di ogni cosa.
La fonte di amore infinito che illumina la mia vita.
A Eileen,
per quello che hai cambiato, per quello che hai rafforzato, per quello che hai creato.
Per avermi fatto conoscere l’amore in una forma che non speravo nemmeno potesse esistere. 
Per aver portato senso ad ogni giorno. Perché ogni istante in cui so di averti vicina non può essere un istante spreché.
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Chapter 1

1 INTRODUCTION

1.1 PREMISE

The present Doctoral Thesis Research Project, titled “A Reference Framework for Strategy Analysis on the Mobile Telecommunications Industry”, has been developed during a 3-years period, from January 2008 to January 2011; yet, its roots are to be found in previous studies carried out by the author from early 2004, within his Bachelor and Master of Science Theses.

Moreover, since 2006 the author has been involved as Researcher within the Politecnico di Milano’s ICT & Management Osservatori research center, with a strong focalization on the Italian and international Mobile markets and their segment – e.g. Mobile Content & Internet; Mobile Tv & Media; Mobile Marketing and Mobile Service Management; Mobile Payment; Mobile Banking & Trading –; leveraging on such an organization’s network of industry relationships allowed to directly get in touch with more than 150 institutions and companies actively involved and operating within the Mobile Industry, so as to gather detailed information from first-hand, primary sources.

Such a significant timeframe devoted to the analysis of the intriguing and dynamic Mobile Telecommunications Industry, combined with the enormous amount of field data and information available thanks to the field research activity, makes for a longitudinal study which takes into account the industry evolutions from a multidimensional perspective, thus paving the way for the obtainment of results meant to serve both the academic and the practitioner communities.

Within the long timeframe considered, only one thing remained constant for Mobile Telecommunications: the industry’s highly volatile and discontinuous trait. Dynamicity and turbulence, both at an outward, environmental, and at an inward, firmwise level, paradoxically appeared to be the only unchanged feature. Naturally, this resident characteristic, shared with several other Information and Communication Technology-intensive markets, holds deep strategic implications as well.
In the light of this seminal consideration, the present Doctoral Thesis’ objective is to craft an original set of models to support strategy analysis for Mobile actors and stakeholders within the fast-changing, highly volatile and discontinuous Mobile Telecommunications industry. Such models will be consistently encompassed within an overall Reference Frameworks supporting several key phases of the Strategic Planning Process under environmental volatility, which will provide a unified view on the subject matter, thus constituting the rationale for linking the stand-alone researches which led to the development of the different strategy analysis models.

The Philosophy Doctorate Thesis is structured as follows.

**Chapter 1 – Introduction** opens with the provisioning of an overview of the research empirical context, i.e. the Mobile Telecommunications Industry; after this, a selective review of Strategic Management literature is provided, and the significant research streams the present Thesis touches upon and bridges are described; in the light of the open issues evidenced through the overview on the empirical context and the significant literature review, the Thesis Strategy Analysis Reference Framework is hence presented, and the research objectives and seminal research questions are stated and listed; later on, the research methodologies employed first to craft the Reference Framework first, and then the stand-alone researches, are illustrated; eventually, the last paragraph sheds light on the rationale linking the Reference Framework with the stand-alone Models, and the overall correspondence between Research Questions, Reference Framework and Research Papers is disclosed.

**Chapter 2 – Strategy Analysis Models** presents a collection of the published scientific papers which, on the one hand, served as a preliminary exploratory research on the market, so as to build the overall Reference Framework (Part 1), and on the other, ultimately constitute the core original strategy analysis models for the Industry under scrutiny (Part 2 – 9).

**Chapter 3 – Conclusion and future developments** discusses the specific findings of the published scientific papers collected within the overall Reference Framework, also restating the work of Thesis’ value for researchers and managers, as well as its core strengths and its limitations; directions for future research developments are eventually provided.
1.2 RESEARCH CONTEXT: THE MOBILE TELECOMMUNICATIONS INDUSTRY

Since its early stages of development in the 90’s, the Mobile Telecommunications Industry has been characterized by the strategic predominance of Mobile Network Operators (MNOs), the unique possessors of core resources and assets such as market licenses, strong brand identity, network infrastructures, charging-billing-accounting systems and customer ownership – thanks to the central role played by Subscriber Identity Module (SIM) cards for Mobile customer – (Peppard, Rylander, 2006; Kuo, Yu, 2006; Funk, 2009).

In the dawn of the industry, the relative stability of the external strategic and technological landscape, combined with the simplicity, low differentiation and narrow range of services provided, allowed the Mobile Network Operators to exert full control of the Mobile value system (Jaokar, Fish, 2006; Kuo, Yu, 2006; Peppard, Rylander, 2006). Few were the actors others than the Operators whose involvement in the delivery of Services could be seen as crucial, and their bargaining power was not even comparable to that characterizing the MNOs. Moreover, voice services under mobility regimes were capturing the customers’ attention so quickly that the market was enjoying a dramatic pace of two-digit growth; in the early 2000’s, innovative rich-media services different than simple Short Message Services were just a fancy, both for technological constraints and for a scarce attention paid by the incumbents to something different than the highly profitable all-voice paradigm.

Such an external and internal equilibrium was meant to change as both technology-wise and business-wise forces came into play in the last years. The industry’s endogenous and exogenous conditions have been evolving rapidly, and the market is going through a period of deep strategic and technological volatility, discontinuity and change. Such strong forces are interplaying that the very strategic predominance of Mobile Network Operators appears jeopardized and under siege: a true “Mobile Revolution” is in place.
Figure 1.1 – The “Mobile Revolution” resulting from the convergence of the Mobile, Web, Media and ICT industries

The major environment-driven source of discontinuity leads back to the radical innovations in Information & Communication Technology: the technological convergence between the Mobile, the Fixed, the IT and the Media industries is now reality, and contributed to reshaping the very foundations and boundaries of the Mobile market as originally conceived by the Operators alone, with implications far from being only technical.

The mature markets saturation, the gradual leveling off of voice services revenues (Nomura, 2005; Arthur D. Little/BNP Paribas, 2005; Gartner Research, 2009; Juniper Research, 2009) and the subsequent decrease of ARPU (Average Revenue per User) (Muller-Veerse, 1999; MacKenzie, O’Loughlin, 2000; Arthur D. Little, 2001; Peppard, Rylander, 2006; Gartner Research, 2009) are also triggering an enterprise-driven discontinuity, as they are forcing the Operators to turn their attention to other potential sources of revenue to sustain their future growth, thus enhancing the relevance of the third parties ecosystem which surrounds them and is capable of catalyzing the offer of non-voice, value added digital contents and services.
The MNOs’ strategic approach to non-voice, value added service markets has been gradually modified, replacing the old “walled garden” logic – based on the assumption that a full control of the Mobile Content value chain, from creation to delivery of services, could grant higher incomes and prevent other potential competitors from threatening the operators’ customer base – in favor of higher openness towards incumbent third parties – Mobile Content & Service Providers (MCSPs), Mobile Middleware Technology Providers, Device Manufacturers and Content Owners – fair revenue sharing and service pricing models (Bughin et al., 2001; Gazis et al. 2002, Kuo, You, 2006).

The current market fluidity resulting from the combination of external technological convergence and internal MNOs’ strategic reorientation has several strategic implications.

![Impacts of strategic volatility and discontinuity](image)

**Figure 1.2 – Strategic implications of the Mobile Industry’s volatility and discontinuity**

First, a redefinition of the market boundaries and the lowering of the entry barriers for several neighboring business areas, which also create quite an heterogeneous business portfolio to manage – e.g. Mobile Content & Media segment; Mobile Web segment; Mobile Marketing & Advertising segment –.
Second, the market restructuring is creating the conditions for the rise of a broadened competition between incumbents and a plethora of new entrants. This enlarged market ecosystem is constituted by the following actor typologies (see e.g. Funk, 2009).

- **Mobile Content & Service Providers** (MCSPs): they take on an intermediary role between the Content Owner (if any) and the End-User, or between the MNO and the End-User. This actor typology can be further divided into two categories:
  - **Retailer MCSP**: it is focused on the B2C activities of development, aggregation, management and promotion of Content and Services. Its core resources and assets are related to content & service R&D, Mobile Content & Service Delivery Platforms, Short Numbers, Mobile Sites. Real world examples of Retailer MCSPs are Buongiorno!, Dada and Jamba.
  - **Integrator MCSP**: it is focused on the B2B activities of interface and integration with MNOs’ billing systems. Its core resources and assets are related to interconnection platforms (Sms, Mms, WAP Billing…) and portfolio of agreements with international/local MNOs. Real world cases of Integrator MCSPs are MBlox, Netsize and Sybase 365.

- **Mobile Middleware Technology Providers** (MMTPs): they focus on the provision of the middleware Mobile Content & Service Delivery Platforms enabling MNO’s and MCSP’s service creation, management and delivery. In some cases, they may overextend their reach towards Content & service management and delivery activities – e.g. downstream integration towards direct marketing of the content and services published on the technology platforms offered –. Their core resources and assets are related to software engineering, system integration, technology consulting, technology infrastructure for platform housing/hosting/outsourcing management.

- **Device Manufacturers** (DMs): they focus on the manufacturing of Mobile/Wireless devices employed by End-users to get access to Content & Services (e.g. Cell phones, Smart phones, PDAs, etc.). However, some noteworthy cases of downstream integration towards the direct selling of Content, services and applications are emerging (see Pcs and Mobile Devices Manufacturer Apple with its iTunes Application Store; Mobile Devices Manufacturer Nokia with its Ovi Store, and so on). As mentioned below and
thoroughly described in Chapter 2 – Part 9, the disruptive “Application Store” paradigm, alternative to the traditional Mobile Portal paradigm, is mainly DM-driven. Their core resources and assets are related to device design, software engineering, agreements with MNOs, brand image and customer base.

- **Content Owners**: broad category grouping actors that created and own original content, services or applications, to be bundled and transferred through the network to reach the End-User.
  - Media Companies (for e.g. infotainment, personalization, interaction, mobile tv);
  - Majors (for e.g. music, video);
  - Web editors (for e.g. infotainment, personalization);
  - Game publishers (for mobile games);
  - Other original content owners (for e.g. personalization, communication & community, advertising)
  - Single developers (for e.g. personalization, general purpose applications)

Their role is typically constrained to the “service creation” and “service packaging” activities. Should this actor integrate downstream on such layer, its role would be overlapped to that of Mobile Content & Service Provider. The Content Owners’ core resources and assets are mainly related to R&D, original content, digital rights and intellectual properties, patents and strong brand recognition.

- **Web Companies**: broad category of actors coming from the Web industry, whose focus is on services related to data traffic (Mobile Internet, e.g. communication & community, search, location-based services, instant messaging), mostly taken from their Web offer and redeployed/adapted for the Mobile Channel. These players poured into the Mobile Content & Internet market, taking advantage of the technology-wise (and consequent business-wise) convergence between Mobile and Web, and are striving to establish a foothold within this neighboring business area, potentially generating unexpected competitive attritions against MNOs. Their core resources and assets are: a large customer base, strong brand image, Web content & service portfolio, Web infrastructure (e.g. portals, servers, application service provisioning clouds), technology competencies and international reach. They
may act either as a Content Owner, or as a Web-based, multichannel Content & Service Provider, with a resulting “fuzzy” positioning.

The entrance of new actors in the market – with particular reference to Media Companies and Web Companies – also determined a subsequent change in the role of incumbent third parties within the network, whose strategic relevance is in some cases enhanced – e.g. Device Manufacturer and Mobile Middleware Technology Providers –, while in others, questions could be raised concerning their fate and chance of survival in the competitive arena – e.g. Mobile Content & Service Providers –.

Third, the process of value system reconfiguration the market for Mobile Telecommunications Services is undergoing: in parallel to the technological convergence, the overall Mobile value network is resulting from the juxtaposition and convergence of different major value chains (Andersson, 1995; Campbell, Wilson, 1996; Gulati, 1995; Wirtz, 2001; Fjeldstadt et al., 2004; Huemer, 2006; Peppard, Rylander, 2006, Funk, 2009):

1. Mobile Telecommunications;
2. Information Technology;
3. Media;
4. Electronic Commerce.

This trend is resulting in a broadening range of value creating and destroying activities, and in the emergence of different options of roles combinations (e.g. activities coverage) for the actors involved.

Fourth, the deep reshaping of strategies formulated and adopted by the Mobile incumbents and new entrants, at a corporate-wise level – i.e. Mobile businesses portfolio management and segments prioritization –, a business-wise level – i.e. strategic business unit strategies, competitive differentials and resources, competencies & capabilities endowment management –, at at a business model design level.

The combination of the previously identified discontinuous phenomena contribute in making the strategy analysis process a “tough call” for the top management of the involved firms. Therefore, within such a dynamic, volatile and discontinuous environment, the urgent need of adequate and consistent models to understand and interpret the strategic dynamics is becoming clearly evident.

The overall purpose of this Doctoral Thesis is hence to develop a set of original and innovative models to support strategy analysis in the fast changing, complex, uncertain
and dynamic Mobile Telecommunications Industry, with a straightforward value for both researchers and practitioners.

In the following section, a review of the significant Strategic Management research streams touched upon inside this Thesis is presented, showing how this piece of work aims at tackling and filling a number of noteworthy strategic open issues with particular relevance within the empirical context under scrutiny.

1.3 REVIEW OF SIGNIFICANT STRATEGIC MANAGEMENT LITERATURE

The core issue of Strategic Management appears to be extremely straightforward, expressible through a simple question: why firms enjoy different performances, and how they create and sustain such performances in competitive market conditions. However, in time, different answers have been provided to this core question: as a theory and a practice, Strategy has been evolving following parallel, sometimes complementary or partially overlapped paths (Mintzberg, 1998); each School proposing a set of original models to support the study of strategy-wise issue, providing guidelines for the Strategy definition process as a whole.

While Strategic Management in the ’80 and ’90 was dominated by the two theoretical pillars represented by Porter’s “Positioning School” (Porter 1980, 1985, 1996) and Hamel & Prahalad’s “Resource-based View” (RBV) (Hamel, Prahalad, 1990; Barney, 1991; Collis, Montgomery, 1995), which in turn proposed a set of highly significant “outside-in” and “inside-out” models for supporting external and internal analysis, different approaches and perspectives appear now to be emerging: the “Dynamic Capabilities Approach” (DCA) (Teece, Pisano, Shuen, 1997; Eisenhardt, Martin, 2000), the “Blue Ocean Strategy” and the underlying concept of “strategic moves” (Kim, Mauborgne, 2006), “Strategic Renewal” and “Strategic Entrepreneurship” are only some of many “new deals” this research field is undertaking.

Moreover, researchers have long debated about the applicability of such models to digital markets, resulting from the rise of Information & Communication Technologies (Amit, Schoemaker, 1993; Booth & Philip, 1998; Glazer, 1991; Karnani, 1984; Wright et al., 1990; Hill, 1988; Murray, 1988; Teece, Pisano, Shuen, 1997; Eisenhardt, Martin, 2000; Evans, Wurster, 1999; Merrilees, 2001; Porter, 2001; Wirtz, 2001; Fransman, 2001; Maitland et al., 2002; Sabat, 2002; Li, Whalley, 2002; Barnes, 2002; Kim et al., 2004; Teng et al., 2005; Tilson, Lyytinen, 2006).
Researchers in Strategic Management almost unanimously agree also on the argument that strategy and strategic planning becomes even more complex an issue when to be contextualized to environments characterized by high rates of volatility, discontinuity and change (see e.g. Aguilar, 1967; Ansoff, Slevin, 1968; Fahey and King, 1977; Ansoff, 1980; Wernerfelt & Karnani, 1987; Daft et al., 1988; Christensen, 1997; Ebrahimi, 2000; Finney, Lueg, Campbell, 2008; Wu, 2010).

Given the proliferation of approaches and related models on the one hand, and the high dynamicity and complexity proper of the ICT-intensive Mobile Industry, the Doctoral of Thesis will deal with and bridge several Strategic Management literature streams, in the attempt to filling a number of significant literature gaps.

The core literature streams abridged and the related hot spots or missing links are listed below.

<table>
<thead>
<tr>
<th>Literature streams abridged</th>
<th>Literature gaps addressed</th>
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<tbody>
<tr>
<td><strong>Strategic Planning Process</strong></td>
<td>GAPS</td>
</tr>
<tr>
<td>➢ Strategic Planning Process phases (e.g. Lorange, 1980; Ansoff, 1965)</td>
<td>➢ Integration of Business Model Design, Value Network relations configuring, RBV and DCA within the strategy analysis process</td>
</tr>
<tr>
<td>➢ Strategic planning under environmental dynamicity (e.g. Ansoff, 1980; Wernerfelt &amp; Karnani, 1987; Ebrahimi, 2000)</td>
<td>➢ Framework to trigger Strategy replanning according to BM performance and VN reconfiguration</td>
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<tr>
<td>➢ Integration of the RBV in the process (e.g. Bracker and Pearson, 1986; Houben et al., 1999; Valentin, 2001)</td>
<td>➢ Framework to operationalize Resources &amp; Competencies &amp; Capabilities dynamic assessment ex ante/ex post the discontinuity</td>
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<tr>
<td><strong>Resource Based View and Dynamic Capabilities Approach</strong></td>
<td>GAPS</td>
</tr>
<tr>
<td>➢ Definition of resources, competencies and capabilities (e.g. Hamel an Prahalad, 1990; Teece et al., 1997)</td>
<td>➢ Resource Management guidelines</td>
</tr>
<tr>
<td>➢ Test for core resource assessment (e.g. Collis, Montgomery, 1995)</td>
<td>➢ Integrated and dynamic Resources &amp; Competencies &amp; Capabilities (RBV + DCA) assessment</td>
</tr>
<tr>
<td><strong>Technological Discontinuity and Environmental volatility</strong></td>
<td>GAPS</td>
</tr>
<tr>
<td>➢ Environmental dynamicity (e.g. Ansoff, Slevin, 1968; Wu, 2010)</td>
<td>➢ Explicit relationship between external discontinuity and its effects on internal Resources &amp; Competencies &amp;</td>
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- Environmental scanning (e.g. Aguilar, 1967; Fahey and King, 1977; Daft et al., 1988; Ebrahimi, 2000)
- Disruptive technology and First Mover Advantage (e.g. Christensen, 1997; Finney, Lueg, Campbell, 2008)
- Distribution paradigm shift (e.g. Lefebvre and Lefebvre, 2002)

<table>
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<tr>
<th>Business Model Design</th>
<th>GAPS</th>
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<tr>
<td>Business Model building blocks (e.g. Timmers, 1998; Rappa, 2001; Weil, Vitale, 2001; Osterwalder, 2004, Teece, 2009)</td>
<td>Definition of a Business Model design unified framework</td>
</tr>
<tr>
<td>Business model – Strategy relationship (Richardson et al., 2008; Casadesus-Masanell and Ricart, 2009)</td>
<td>Link between Strategy, Business Model, Innovation, Value Network and discontinuity</td>
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<th>Value Network Theory and Open Innovation</th>
<th>GAPS</th>
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<tr>
<td>Value Network model (e.g. Normann, Ramirez, 1994; Gulati et al., 2001; Stabell, Fjeldstad, 2002; Peppard Rylander, 2006)</td>
<td>Application to a noteworthy empirical context (Mobile Industry)</td>
</tr>
<tr>
<td>Value and revenue logic (e.g. Hamel, 2000; Linder, Cantrell, 2001; Rajala et al., 2001; Sainio, Marjakosky, 2009)</td>
<td>Assessment of co-opetition and open innovation dynamics among Mobile-specific players</td>
</tr>
<tr>
<td>Co-opetition (e.g. Brandenburger and Nalebeuf, 1996)</td>
<td>Framework to trigger Strategy replanning according to BM performance and VN reconfiguration</td>
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<tr>
<td>Open innovation (e.g. Chesbrough, Vanhaverbeke and West, 2006; Chesbrough, Appleyard, 2007)</td>
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<th>Blue Ocean Strategy, First Mover Advantage vs. latecomer</th>
<th>GAPS</th>
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<tr>
<td>Blue ocean strategy (Kim, Mauborgne, 2006)</td>
<td>Impact of blue ocean strategies and first mover advantage on incumbent’s strategy and business models, and on industry value network configuration</td>
</tr>
<tr>
<td>First mover advantage vs. latecomer advantage (e.g. Christensen, 1997; D’Aveni, 2002)</td>
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The literature stream is investigated in terms of:

- Strategic Planning Process phases;
- Strategic planning under environmental dynamicity;
- Integration of the RBV in the process.

The literature gaps addressed by the strategy analysis models presented in this Doctoral Thesis are to be referred to:

- the integration of Business Model Design, Value Network relations configuring, RBV and DCA within the strategy analysis process;
- the provisioning of a framework to trigger Strategy replanning according to BM performance and VN reconfiguration;
- the provisioning of a framework to operationalize R&C&C dynamic assessment ex ante/ex post the discontinuity.


The literature stream is investigated in terms of:

- definition of resources, competencies and capabilities;
- test for core resource assessment.

The literature gaps addressed by the strategy analysis models presented in this Doctoral Thesis are to be referred to:

- the provisioning of resource management guidelines;
- the integrated and dynamic R&C&C (RBV + DCA) assessment.

The literature stream is investigated in terms of:

- Environmental dynamicity;
- Environmental scanning;
- Disruptive technology and First Mover Advantage;
- Distribution paradigm shift.

The literature gaps addressed by the strategy analysis models presented in this Doctoral Thesis are to be referred to:

- the formulation of an explicit relationship between external discontinuity and its effects on internal R&C&C change;
- the provisioning of a link between the remote environment and the task environment through RBV and DCA assessment;
- the interpretation of RBV and DCA shift as a component of the concept of “strategic uncertainty”.


The literature stream is investigated in terms of:

- Business Model building blocks;

The literature gaps addressed by the strategy analysis models presented in this Doctoral Thesis are to be referred to:

- the definition of a Business Model design unified framework;
- the provisioning of a link between Strategy, Business Model, Innovation, Value Network and discontinuity;
the crafting of a framework to trigger Strategy replanning according to BM performance.


The literature stream is investigated in terms of:

- Value Network model;
- Value and revenue logic;
- Co-opetition dynamics;
- Open innovation strategies;

The literature gaps addressed by the strategy analysis models presented in this Doctoral Thesis are to be referred to:

- the application to a noteworthy empirical context (i.e. the Mobile Industry);
- the assessment of co-opetition and open innovation dynamics among Mobile-specific players;
- the provisioning of a framework to trigger Strategy replanning according to BM performance and VN reconfiguration.

In addition to this vast and transversal Strategic Management literature, a review of industry-specific studies focused on the Mobile Telecommunications Industry was also carried out.

Such existing body of knowledge focused on the following topics.


The Mobile-specific literature review showed, to some extent, quite a piecemeal approach, and above all a lack of studies devoted to the assessment of strategy analysis under volatility and discontinuity: this is likely to be due to the relative novelty of the Mobile market itself, to the extreme recency of the competitive dynamics going on within its boundaries, as well as, in more general terms, to the high complexity of dealing with such a multi-perspective and multilayered issue in a comprehensive fashion.

As a whole, the vast literature state-of-the-art review carried out allows to point out that a lack of comprehensive industry-specific studies on the subject matter – i.e. strategy analysis in the volatile and discontinuous Mobile environment – is currently found; moreover, such issues are of significant interest for Strategic Management theory and practice in general, and Mobile-specific findings may be tested for generalization to different contexts.
The above mentioned considerations drive the formulation of the overall Strategy Analysis Reference Framework presented below, which in turn will constitute the rationale and linkage between the single strategy analysis models proposed in Chapter 2.

1.4 STRATEGY ANALYSIS REFERENCE FRAMEWORK FOR THE MOBILE TELECOMMUNICATIONS INDUSTRY

This section describes the Strategy Analysis Reference Framework that has been derived from the vast Strategic Management and Mobile-specific literature review and an in-depth longitudinal exploratory case study (see also Section 1.6 – Research Methodologies, and Chapter 2 – Part 1).

Recognizing the value of an integration between complementary theories and approaches, the present Thesis seeks for an explicit mediation between the models proposed in the previously identified research streams, with a particular attention paid to the issue of strategic volatility and discontinuity which characterizes the context investigated.

Specifically, the literature review disclosed a number of issues that deserved further attention, and that should be captured and reflected by an overall framework of analysis. First, the market boundaries are so fluid and difficult to draw, and the emerging value creating or destroying activities are so many and so diverse, that a process of market perimeter identification is an essential preliminary strategy analysis step. Such argument is consistent with a broad literature claiming that business area definition is the very first step to carry out when activating the external strategy analysis process (Lorange, 1980; Porter, 1980; Ansoff, 1984), and such activity is to be followed by the portrayal of the market’s value system, so as to disclose the firm’s competitive differentials (Porter, 1985). The latter point can be integrated by the more recent view of the Value Network and Strategic Network theories, which extend the Value Chain model (Porter, 1985) by stressing the concept of the network of relationships and interdependencies a firm builds outside its perimeter: value is created through inter-organizational streams of activities (Hakanson & Snehota, 1989; Normann & Ramirez, 1994; Gulati et al., 2000; Huemer, 2006; Peppard, Rylander, 2006). These Value Network interdependencies are: non-linear and multi-directional – e.g. horizontal, vertical, diagonal, retroactive, parallel, simultaneous –; multi-layered or multi-level; and multi-actor.
After the market’s perimeter and value network identification, another major strategic issue is related to the definition of the categories of actor typologies or players involved. The “players galore” currently characterizing the Mobile Industry requires to devote some research effort in disclosing “who is who” in terms of roles – i.e. span of core activities covered within the value network (Ballon, 2007) – and resources, competencies and capabilities endowment. Competitors identification is another key step for strategy analysis (Porter, 1980; Grant, 1991), and performing this activity by coupling activities coverage analysis with internal core resources, competencies and capabilities assessment allows to obtain a combined view of what the firm is right now, and what it possesses in terms of internal potential (Bracker and Pearson, 1986; Houben et al., 1999; Valentin, 2001). The different types of competitive, cooperative or hybrid relations (Brandenburger and Nalebeuf, 1996) established among these players are also of significant interest for academics and practitioners, since the way firms relate with one another and manage core activities such as innovation in an independent – closed – or rather shared – open – manner can heavily affect their overall performance (Gulati et al., 2000; Chesbrough et al., 2006; Chesbrough, Appleyard, 2007).

As the Strategic Planning literature holds (e.g. Ansoff, 1965; Lorange, 1980) the business area identification and the competitors definition are followed by the formulation and execution of business strategy. Strategy analysis should allow to shed light on how firms pursue competitive advantage through leveraging on competitive differentials on the one hands (Porter, 1985), and on their resources portfolio on the other (Hamel, Prahalad, 1990; Barney, 1991; Collis, Montgomery, 1995); on how firms shape their strategic positioning within a given market or segment (Grant, 1991); and eventually, on how their planned strategies are executed through a specific and concrete business model (Timmers, 1998; Rappa, 2001; Weill, Vitale, 2001; Amit, Zott, 2001; Osterwalder (2004), Johnson et al., 2008; Richardson, 2008; Casadesus-Masanell, Ricart, 2009; Teece, 2010). At a Corporate level, all the different businesses shall be managed as part of a consisten and comprehensive portfolio (Lorange, 1980).

Given the inner traits of the Mobile Telecommunications Industry, which is characterized by high rates of volatility, a reference framework for strategy analysis is also to focus on how to integrate discontinuity assessment within the overall process (e.g. Ansoff, 1980; Wernerfelt & Karnani, 1987; Ebrahimi, 2000). Therefore, a reference framework for strategy analysis in the Mobile Industry should seek for a relationship between the concepts and construct of strategy, value network, business
model and discontinuity, thus taking into fair account the effect of such strategic volatility on the overall strategic planning process. In addition to this, the impact of change on the resources, competencies and capabilities endowment shall also be considered, and proper resource portfolio management guidelines under discontinuous conditions shall be provided. This allows to evaluate the effect of discontinuity on the market value system structure, on the concretization of strategy into a given business model, and ultimately on firm performance, while at the same time addressing how volatility affects the endowment of internal assets a firm takes or will take advantage on to create a sustainable competitive advantage.

These assumptions were thoroughly confirmed by a longitudinal case study performed on a new entrant in the Italian Mobile market. The mistakes committed in the strategic planning and business model design processes by the company’s top management allows to shed light on the key issues to deal with when planning and executing strategy within the highly dynamic and volatile Mobile Industry, synthesized in a set of guidelines:

1. state the strategic objectives clearly, and translating corporate-level priorities into business-level goals;
2. correctly interpret the deliberate vs. emergent strategic planning dualism;
3. balance the internal and external strategy analysis effort;
4. map the value system configuration;
5. consider the impact of exogenous factors, like market turbulence and discontinuity;
6. assess the internal resources endowment, and link it to Critical Success Factors;
7. consider the link between strategic planning, strategy analysis and business model design;
8. balance the technology-driven and the market-driven offering approaches;
9. state the business value proposition clearly;
10. shape the business modeling mix consistently.

The case study, which contributed to the crafting of the reference framework, is described in detail in the published scientific paper presented in Chapter 2 – Part 1.

The resulting Strategy Analysis Reference Framework is built on 4 steps, in turn leading to a number of research outputs:

1. **Market Perimeter Identification;**
2. **Actors Definition**;
3. **Strategy and Business Model Description**;
4. **Strategic Discontinuity Assessment**.

The 4-steps Reference Framework for the Mobile Telecommunications Industry is depicted in the following schema.

![Figure 1.3 – The Strategy Analysis Reference Framework for the Mobile Telecommunications Industry](image)

The first step or building block, “Market Perimeter Identification”, deals with the description of the market boundaries, the individuation of its core value creating or destroying activities, and the drawing of a Mobile Value Network model.

The second step, “Actors Definition”, focuses on defining the Mobile actor typologies involved in the market, as well as on the discussion of actor roles and feasible configurations of activities covered.

The third step, “Strategy and Business Model Description”, analyzes the processes of both corporate and business-level strategy definition and business model design Mobile players, and aims at supporting the analysis of the players’ strategic positioning through the identification of business models and strategic clusters.
The fourth and conclusive step, “Strategic Discontinuity Assessment”, tackles the impact of volatility and discontinuity – both endogenous and exogenous – on four main dimensions:

1. Strategic Planning;
2. Business Model Design;
3. Value Network Configuring;
4. Resource, competence and capability management.

1.5 RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The overall research objective of the present Doctoral Thesis is to craft an original and innovative set of models to support strategy analysis in the fast changing, volatile and discontinuous market contexts enabled by the Mobile Revolution.

Such broad objective is further specified into a set of specific research questions. The research questions are defined consistently with the overall Strategy Analysis reference framework.

The specific seminal research questions that are addressed by the research papers collected within this Thesis are listed as follows.

- **RQ1**: What are the Mobile Telecommunications Industry core value creating/destroying activities?

- **RQ2**: How is the Mobile Telecommunications Industry Value Network shaped?

- **RQ3**: What are the main actor typologies involved within the Mobile Telecommunications Industry Value Network?

- **RQ4**: What are the roles taken on by the main Mobile actor typologies in terms of activities covered, and to which alternative value network configurations such roles give rise to?

- **RQ5**: What are the corporate-level and business-level strategies pursued by the main Mobile actor typologies?
- **RQ6**: What are the core decisions choices to be taken at a business model design level for the Mobile actor typologies?

- **RQ7**: Which is the link between Strategic Planning, Business Model Design, Value Network Configuration and Resource Management within the Mobile Industry?

- **RQ8**: How can the Mobile actor typologies tackle the strategic implications of environmental volatility and discontinuity?

The research questions are targeting gaps found through the empirical context analysis and the vast literature review, and straightforwardly derive from the application of the reference framework to a given market segment or actor typology. The detailed relationship between the reference framework, the scientific papers and the research questions is further discussed in Section 1.7.

### 1.6 RESEARCH METHODOLOGIES

The research methodologies applied and leveraged on so as to pursue the Doctoral Thesis objectives are depicted in the following two-stages schema.
1.6.1 **REFERENCE FRAMEWORK DEFINITION**

In a first stage, labeled “Reference Framework Definition”, the four-steps Strategy Analysis Reference Framework is defined, by means of two main pillars:

- the vast literature review carried out, with reference to the industry-specific studies focused on Mobile Telecommunications, as well as to the broader Strategic Management body of knowledge. The combination of these reviews allowed to identify the major key issues characterizing the Mobile Industry from a strategic perspective;
- the exploratory single case study – Chapter 2, Part 1 –, performed longitudinally between 2006 and 2008 on a market’s new entrant, which shed light on the main criticalities to be dealt with when undertaking the process of strategic planning and business model design within the volatile and discontinuous Mobile environment. The exploratory case study, through which several key points were raised by the informants – either explicitly, or implicitly, by means of direct observation –, served to confirm and refine the findings derived from the literature review.
As a whole, Stage 1 served to craft the Reference Framework and formulate the Research Questions and hypotheses, which had to be later assessed through specific studies in Stage 2.

1.6.2 STRATEGY ANALYSIS MODELS CREATION

The second stage, labeled “Strategy Analysis Models Creation”, rests in the crafting of a set of original strategy analysis models for the Mobile Telecommunications Industry. As discussed in Section 1.7 and throughout Chapter 2, the seven models developed and presented within this Thesis are the following:

1. Value Network Model for the Mobile Market (Chapter 2 – Part 2);
2. Mobile Content & Service Delivery Platform Assessment Model (Chapter 2 – Part 3)
3. Business Model Design Unified Framework (Chapter 2 – Part 4)
4. Business Model Design Framework for Mobile Middleware Technology Providers (Chapter 2 – Part 5)
5. Strategic Positioning Reference Model for Mobile Network Operators (Chapter 2 – Part 6)
6. Strategic Positioning Reference Model for Mobile Middleware Technology Providers (Chapter 2 – Part 7)
7. Model for Resources, Competencies and Capabilities Assessment under environmental discontinuity for Mobile Network Operators (Chapter 2 – Part 8)

All the previous models are published on scientific, peer reviewed outlets – international journals or international conference proceedings –.

The two methodological pillars this stage relies on are:

- a detailed strategic management and industry-specific literature review focused on the issue under scrutiny within the given study;
- multiple case studies as a information gathering and elaboration methodology.

Case studies are defined by Yin (2003) as “empirical inquiries that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”.

Qualitative research methodology was chosen as particularly suitable for reaching the Doctoral Thesis research objectives, which aim at understanding the complex phenomenon of strategy analysis within a given context – i.e. the Mobile

To accomplish the previously identified research propositions, from January, 2007, to September, 2010, 140 in-depth longitudinal case studies on companies belonging to the broad Mobile Telecommunications Industry have been performed. Specifically, the information and data gathering process carried out within this Thesis embraces the following actor typologies.

- Mobile Network Operators (MNO);
- Mobile Content & Service Providers (MCSP);
- Mobile Middleware Technology Providers (MMTP);
- Device Manufacturers (DM);
- Content Owners (CO), further divided in
  - Media Companies;
  - Majors;
  - Web Companies;
  - Game publishers;
  - Other original content owners;
  - Software developers.

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<tr>
<th>COMPANY NAME</th>
<th>ACTOR TYPOLOGY</th>
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<td>MNO</td>
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<td>Aepona/Appium</td>
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<td>AGCOM</td>
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<td>Amuser</td>
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<td>Ansa</td>
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<td>Apple</td>
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<td>MCSP</td>
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<td>Bwin – Gioco digitale</td>
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<td>Cisco Systems</td>
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<td>Zed Italia</td>
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</table>
Consistently with the research methodology employed (Pettigrew, 1988), firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data analysis.

A multiple case study approach reinforced the generalizability of results (Meredith, 1998), and allowed to perform a cross analysis on the significant variables, due to the presence of extreme cases, polar types or niche situations within the theoretical sample (Meredith, 1998).

The need of assessing a broad, multidimensional problem – i.e. strategy definition process in a complex and dynamic market –, led to the adoption of a “embedded” case study, with multiple units of analysis, where organization will be the micro units of analysis, and the whole Mobile Industry will be the macro unit of analysis.

According to Cook and Campbell (1979), the methodological rigor of case studies is related to the following theoretical concepts:

- Internal validity
- Construct validity
- External validity
- Reliability

The following table synthesizes the methodological tenets followed so as to grant qualitative research’s rigor.
<table>
<thead>
<tr>
<th>Internal Validity</th>
<th>Construct Validity</th>
<th>External Validity</th>
<th>Reliability</th>
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</thead>
<tbody>
<tr>
<td>Research framework</td>
<td>Data triangulation</td>
<td>Cross case analysis</td>
<td>Case study protocol</td>
</tr>
<tr>
<td>explicitly derived from literature</td>
<td>- Archival data</td>
<td>- Multiple case studies</td>
<td>(report of there being a protocol, report of how the entire case study was conducted)</td>
</tr>
<tr>
<td>(diagram or explicit description of causal relationships between variables and outcomes)</td>
<td>- Interview data</td>
<td>- case studies of different organizations</td>
<td>Case study database (database with all available documents, interviews transcripts, archival data etc.)</td>
</tr>
<tr>
<td>Pattern matching</td>
<td>- Participatory observation</td>
<td>- Nested approach</td>
<td>Organization’s actual name given (actual name to be mentioned explicitly - as opposed to anonimous; where possible)</td>
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<tr>
<td>(matching pattern identified to those reported by other authors)</td>
<td>derived data</td>
<td>(different case studies within one organization)</td>
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</tr>
<tr>
<td>Theory triangulation</td>
<td>Review of transcripts and drafts by peers and key informants</td>
<td>Rationale for case study selection</td>
<td>Details on case study context (explanation of e.g. industry context, business cycle, financial data)</td>
</tr>
<tr>
<td>(different theoretical lenses and bodies of literature used, either as research framework, or as means to interpret findings)</td>
<td>Clear chain of evidence</td>
<td>(explanation why this case study was appropriate in view of research questions)</td>
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<tr>
<td></td>
<td>Indication of data collection circumstances; check for circumstances of data collection vs. actual procedure</td>
<td>Details on case study context</td>
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<td></td>
<td>Explanation of data analysis</td>
<td>context (explanation of e.g. industry context, business cycle, financial data)</td>
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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), multiple sources of evidences or research methods will be employed: interviews – to be considered the primary data source –, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings –. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

During the research period, a number of semi-structured interviews – both face-to-face and phone interviews – were held with persons identified as key participants in the firms’ strategy definition and business modeling processes at different levels. The population of informants will include top and middle managers – e.g. Presidents, Chief Executive Officers, Chief Information Officers, Chief Financial Officers, Marketing & Sales Managers, Project Manager, Software Engineers and Developers –. The semi-structured nature of the questionnaire made possible to start from some key issues
identified through the literature, but also to let innovative issues emerge – consistently with the research objectives, which aim at creating a set of reference models well grounded in the existing literature, but at the same time open to innovative variables emerging from the case studies –.

All interviews, carried out from the perspective of the “outside observer” – which ensures to obtain relative frank opinions from the interviewees, since the research is not directly involved and has no personal stake on the issues discussed (Mumford, 1985) – were both written down on extensive notes and tape-recorded, as suggested in Whalsham (1995), and then transcribed and analyzed separately by different researchers so to grant a multi-perspective analysis, thus limiting the perception bias risk (Eisenhardt, 1989; Meredith, 1998).

The responses from the informants were summarized, interpreted and tabulated from the transcripts, according to the themes of the research questions. If any information remains unclear and/or more data is needed, informants were be re-contacted later for additional questions. The qualitative data analysis was conducted according to two complementary approaches, and both a within-case and a cross case analysis was carried out. The first aims at generating the insight (Gersick 1988, Pettigrew, 1988), while the second at enabling intra-case comparisons and highlighting similarities and differences between responses.

Throughout the research, theory – represented by the literature review – is used as “part of an iterative process of data collection and analysis” (Eisenhardt, 1989), meaning that it is employed as an initial guide to design the study and the process of data gathering, though it is never intended to constrain emergent issues coming from the qualitative analysis, so to preserve the suggested considerable degree of openness to the field data (Orlikowski, 1993; Walsham, 1998; Yin, 2003).

1.7 LINKAGE BETWEEN RESEARCH QUESTIONS, REFERENCE FRAMEWORK AND RESEARCH PAPERS

This last section focuses on disclosing the overall correspondence between the Reference Framework, the research questions and the stand-alone scientific papers proposing the single strategy analysis models.

The Thesis structure is synthesized in the following table which, for each and every collected contribution or thesis part, lists the following elements:
- Methodology employed;
- Business area of reference, i.e. specific market in which the study is contextualized;
- Actor typology of reference, i.e. specific actor to whom the model refers to;
- Research Objective – with reference to Part 1, related to the crafting of the overall Reference Framework – or Research Questions – with reference to the single scientific papers contained in Parts 2 – 8 – addressed;
- Broad Constructs – with reference to Part 1, which deals with more general Strategic Management Theories to rely on for crafting the Reference Framework – or Reference Framework Constructs – with reference to the single scientific papers contained in Parts 2 – 8, which cover one or more specific Reference Framework steps – addressed;
- Research findings responding to the relevant research questions.

Such structure is consistent with the two-stages framework proposed in Section 1.6.

<table>
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<th>Table I.IV – Thesis Structure</th>
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<td><strong>PART 1 – How to get strategic Planning and Business Model Design Wrong: the case of a Mobile Technology Provider</strong></td>
</tr>
<tr>
<td>- Methodology: Literature Review, single exploratory case study</td>
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<tr>
<td>- Business area of reference: Mobile Telecommunications Industry</td>
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<tr>
<td>- Actor typology of reference: MMTP</td>
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<tr>
<td>- Research Objective: identification of the strategic priorities in terms of Strategic Planning and Business Model design for a Mobile new entrant</td>
</tr>
<tr>
<td>- Broad Constructs addressed: Strategic Planning and Business Model Design within the Mobile Telecommunications Industry</td>
</tr>
<tr>
<td>- Research findings: clarification of a set of guidelines – expressed through an anti-advice manual – for Strategic Planning and Business Model Design within volatile environments</td>
</tr>
<tr>
<td><strong>STAGE 2 – STRATEGY ANALYSIS MODELS CREATION</strong></td>
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<tr>
<td><strong>PART 2 – A value network perspective study on the Italian Mobile Content Market</strong></td>
</tr>
<tr>
<td>- Methodology: Literature Review, multiple case studies</td>
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<td>- Business area of reference: Mobile Content market</td>
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| - Actor typology of reference: transversal (multi-actor: MNO; MCSP; MMTP; DM;
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<tr>
<th>PART 3 – Mobile Content &amp; Service Delivery Platforms: a qualitative technology classification model</th>
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<tr>
<td>Methodology: Literature Review, multiple case studies</td>
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<tr>
<td>Business area of reference: Mobile Content &amp; Service Delivery Platforms market</td>
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<tr>
<td>Actor typology of reference: MMTP</td>
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<tr>
<td>Research Questions addressed: RQ4 – RQ5</td>
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<tr>
<td>Reference Framework Constructs addressed: Step 2- Actors Definition; Step 3 – Strategy and Business Model Description</td>
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<tr>
<td>Research findings: provisioning of qualitative framework for assessing the technological and business characteristics of MMTPs’ offer</td>
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<tr>
<th>PART 4 – Business Model and Strategic Planning: a proposal for a unified framework and the application to the Mobile Telecommunications Industry</th>
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<tr>
<td>Methodology: Literature Review, multiple case studies</td>
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<tr>
<td>Business area of reference: Mobile Telecommunications Industry</td>
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<tr>
<td>Actor typology of reference: multi-actor (with specific reference to MNO; DM)</td>
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<tr>
<td>Research Questions addressed: RQ6 – RQ7 – RQ8</td>
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<tr>
<td>Reference Framework Construct addressed: Step 3 – Strategy and Business Model Description; Step 4 – Strategic Discontinuity Assessment</td>
</tr>
<tr>
<td>Research findings: provisioning of a unified reference framework built through an exhaustive literature analysis; disclosure of the existing relationship between strategy and business model as concepts and constructs; inclusion of business model design as a key execution step within the strategic planning process; application of the unified framework is applied to MNOs and DMs</td>
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<tr>
<td>Methodology: Literature Review, multiple case studies</td>
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<tr>
<td>Business area of reference: Mobile Telecommunications Industry</td>
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<td>PART 6 – A reference model for analyzing Mobile Network Operators’ Strategic Positioning</td>
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<tr>
<td>Methodology: Literature Review, multiple case studies</td>
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<tr>
<td>Business area of reference: Mobile Telecommunications Industry</td>
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<tr>
<td>Actor typology of reference: MNO</td>
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<tr>
<td>Research Questions addressed: RQ5</td>
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<tr>
<td>Reference Framework Construct addressed: Step 3 – Strategy and Business Model</td>
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<tr>
<td>Description</td>
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<td>Research findings: provisioning of a reference model for MNOs strategic positioning analysis</td>
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<tr>
<th>PART 7 – Mobile Middleware Technology Providers: a strategic positioning analysis reference framework</th>
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<tr>
<td>Methodology: Literature Review, multiple case studies</td>
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<tr>
<td>Business area of reference: Mobile Telecommunications Industry</td>
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<tr>
<td>Actor typology of reference: MMTP</td>
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<tr>
<td>Research Questions addressed: RQ5 – RQ6</td>
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<tr>
<td>Reference Framework Construct addressed: Step 3 – Strategy and Business Model</td>
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<tr>
<td>Description</td>
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<tr>
<td>Research findings: provisioning of a reference model for MMTPs strategic positioning analysis</td>
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<tr>
<th>PART 8 – A resource-based framework to assess discontinuities in the distribution paradigm and their effect on incumbents’ strategies: the case of Mobile Network Operators and Application Stores</th>
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<tr>
<td>Actor typology of reference: MNO</td>
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<tr>
<td>Research Questions addressed: RQ7 – RQ8</td>
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<tr>
<td>Reference Framework Construct addressed: Step 4 – Strategic Discontinuity</td>
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</table>
Assessment

- Research findings: creation of a framework to assess the impact of discontinuity on the resources, competencies and capabilities endowment; provisioning of a set of guidelines for dynamic resources, competencies and capabilities management

A further synthesis of the relationship existing between the Reference Framework, the contextualized Research Questions and the scientific papers is reported hereafter.

Part 1
How to get strategic Planning and Business Model Design Wrong: the case of a Mobile Technology Provider

Contextualization

- Business Area: Mobile Telecommunications Industry
- Actor: MMTP

Research Objective

- shaping the reference framework

Broad Construct Addressed

- Strategic Management
- Business Model Design

Findings

Though successful stories have been naturally catching the attention of academics and practitioners, our study argues that failure cases hold an explanatory and normative value not to underestimate, since they can provide entrepreneurs with precious hints about where not to direct their strategic efforts.

Through presenting a noteworthy case of planning failure, the study reveals how treacherous the strategic planning and business model design processes can be, and how dreadful influences can planning flaws have on a firm’s performance.

Taking a “failure analysis perspective”, the major mistakes committed in the planning process are inductively extrapolated from the longitudinal case study performed, and interpreted on the basis of the findings of an extensive literature review, to be presented
as a list of ten pieces of “anti-advice” with strong theoretical foundations and a straightforward value for entrepreneurs involved in strategic planning and business model design.

Part 2

A value network perspective study on the Italian Mobile Content Market

![Research Framework Steps and Outputs](image)

**Contextualization**

- Business Area: Mobile Content market
- Actor: transversal

**Research Questions**

- RQ1: What are the Mobile Telecommunications Industry core value creating/destroying activities?
- RQ2: How is the Mobile Telecommunications Industry Value Network shaped?
- RQ3: What are the main actor typologies involved within the Mobile Telecommunications Industry Value Network?
- RQ4: What are the roles taken on by the main Mobile actor typologies in terms of activities covered, and to which alternative value network configurations such roles give rise to?
Reference Framework Construct Addressed

- Step 1 – Underlying Value Creating Activities
- Step 1 – Value Network Model
- Step 2 – Categories of Involved Players
- Step 2 – Actors roles and activities coverage

Findings

The market for mobile digital content is undergoing a process of value system reconfiguration, giving rise to the need of developing original models capable of describing its structure and disclosing the drivers of value creation. The purpose of this paper is to adopt a Value Network perspective to identify the core value creating activities constituting the world-leading Italian Mobile Content market, to analyze how such activities are interrelated and to assess how they can be internalized and combined within a given actor’s domain. At first, a model entangling the market’s key value adding activities will be provided. Consequently, five alternative configurations of feasible Mobile Content Value Networks will be proposed and evaluated with reference to a set of structural and dynamic variables drawn from an extensive literature review. The research relies on the adoption of a multiple case studies methodology: 94 in-depth exploratory case studies on all key players operating in the market were performed. The findings show how varying the set of value adding activities covered by the different actors shapes the network structure and inner dynamics, with significant impacts on the firms’ behaviour and strategic options.

Part 3

Mobile Content & Service Delivery Platforms: a qualitative technology classification model
**Contextualization**

- Business Area: Mobile Content & Service Delivery Platforms market
- Actor: MMTP

**Research Questions**

- RQ4: What are the roles taken on by MMTPs in terms of activities covered?
- RQ5: What are the business-level strategies pursued by MMTPs in terms of MCSDP offering?

**Reference Framework Construct Addressed**

- Step 2 – Actors roles and activities coverage
- Step 3 – Business level strategies

**Findings**

The growing complexity of mobile “rich media” digital content and services requires the integration of next generation middleware platform within Mobile Network Operators and Service Providers infrastructural architecture, for supporting the overall process of content creation, management and delivery. The purpose of the research is to design a technology classification model for Mobile Content & Services Delivery...
Platforms – MCSDPs –, the core of Mobile Middleware Technology Providers – MMTPs – value proposition. A three-steps theoretical framework – well grounded on existing literature and gathering information through adopting the multiple case studies research methodology – is provided, which identifies a functional architecture as well as a set of significant classification variables to support the platforms positioning analysis. Afterwards, the model is applied to map the current MCSDP offer presented by a sample of 40 companies, classified as MMTPs, so to test the framework validity and get a valuable insight on the actual “state of the art” for such solutions. The main findings show that existing platforms possess major strengths – e.g. wide content portfolio manageable, integration between mobile and web channels and frequent recourse to SOA and Web Service approach –, while some drawbacks – poor support to context aware and location-based services, verticality and low interoperability of some proprietary products, criticality of content adaptation etc. – are still limiting the solutions effectiveness.

Part 4

Business Model and Strategic Planning: a proposal for a unified framework and the application to the Mobile Telecommunications Industry

Figure 1.7 – Part 4 coverage of the Reference Framework
Contextualization

- Business Area: Mobile Telecommunications Industry
- Actor: transversal – with specific reference to MNO, DM –

Research Questions:

- RQ6: What are the core decisions choices to be taken at a business model design level for the Mobile actor typologies?
- RQ7: Which is the link between Strategic Planning, Business Model Design, Value Network Configuration within the Mobile Industry?
- RQ8: How can the Mobile actor typologies tackle the strategic implications of environmental volatility and discontinuity?

Reference Framework Construct Addressed

- Step 3 – Business level strategies
- Step 3 – Business Model unified framework
- Step 4 – Strategy, Business Model, Value Network and discontinuity

Findings

The study addresses the business model design from a multidimensional perspective, aiming at reaching two major objectives: the provisioning of a unified reference framework built through an exhaustive literature analysis; and the explicitation of the existing relationship between strategy and business model as concepts and constructs, and the inclusion of business model design as a key execution step within the strategic planning process. As a conclusion, the unified framework is applied to the Mobile Telecommunications Industry, with specific reference to Mobile Network Operators and Device Manufacturers, so as to test its validity within a noteworthy empirical context.

Part 5

The Mobile Market and Business Models: a Design Reference Framework for Mobile Middleware Technology Providers
Providers (MMTPs) within the Mobile Content value network. The aim of this paper is

**Contextualization**

- Business Area: Mobile Telecommunications Industry
- Actor: MMTP

**Research Questions:**

- RQ5: What are the corporate-level and business-level strategies pursued by MMTPs?
- RQ6: What are the core decisions choices to be taken at a business model design level for MMTPs?

**Reference Framework Construct Addressed**

- Step 3 – Business level strategies
- Step 3 – Business Model unified framework

**Findings**

As Mobile Network Operators are turning their attention to value added services, the need for innovative platforms designed for mobile digital content management becomes evident. Such phenomenon is enhancing the role of Mobile Middleware Technology Providers (MMTPs) within the Mobile Content value network. The aim of this paper is
threefold: to identify the core business model design parameters for MMTPs; to understand how these parameters are combined to give rise to differential business models; and to delineate what are the “strategic patterns” driving the models’ design choices. Through multiple case studies, 24 companies are analyzed. The findings allow to shape a business model reference framework which captures the core parameters, and to identify a taxonomy of three noteworthy business models currently adopted by MMTPs – “Pure Play”, “Full Asset” and “Platform & Content Management”–, associated respectively to three underlying strategic patterns: “stay on core”, “grow, wait and see” and “aggressive downstream”.

**Part 6**

**A reference model for analyzing Mobile Network Operators’ Strategic Positioning**

![Research Framework Steps](image)

**Figure 1.9 – Part 6 coverage of the Reference Framework**

**Contextualization**

- Business Area: Mobile Telecommunications Industry
- Actor: MNO

**Research Questions:**

41 Chapter 1
- RQ5: What are the corporate-level and business-level strategies pursued by MNOs?

**Reference Framework Construct Addressed**

- Step 3 – Corporate level strategies
- Step 3 – Business level strategies

**Findings**

The revolutionary changes the Mobile Telecommunications Industries is going through are forcing the Mobile Network Operators (MNOs) to radically reshape their strategies, according to the newly emerged market’s value drivers. The purpose of this study is to provide an original reference model for supporting the analysis of MNOs’ strategic positioning. Employing the multiple exploratory case studies research methodology, the study identifies five dimensions or classification variables - Content creation & innovation management, Mobile Advertising integration, Communities and Social Networking focus, Charging & billing systems leverage and Network infrastructure management – through which describing and assessing an MNO’s strategic positioning; consequently the model is applied to the four Italian operators, so to obtain a validation as well as a picture of the adopted strategic positioning. The findings show two alternative and quite contradictory “strategic extremes” the operators are swinging between seem to be emerging: the Pure Carrier positioning, and the Media Company positioning. In between, the Smart Pipe positioning sees the operator making the most out of its assets, gaining the role of the third parties’ offer enabler.

**Part 7**

**Mobile Middleware Technology Providers: a strategic positioning analysis reference framework**
Figure 1.10 – Part 7 coverage of the Reference Framework

**Contextualization**
- Business Area: Mobile Telecommunications Industry
- Actor: MMTP

**Research Questions:**
- RQ5: What are the corporate-level and business-level strategies pursued by MMTPs?
- RQ6: What are the core decisions choices to be taken at a business model design level for the MMTPs?

**Reference Framework Construct Addressed**
- Step 3 – Corporate level strategies
- Step 3 – Business level strategies
- Step 3 – Business Model unified framework

**Findings**
The paper develops a reference model to support the strategic positioning analysis of Mobile Middleware Technology Providers (MMTPs), shedding light on the business models and the strategic positioning currently adopted by this actor typology. The paper
combines a literature review and a multiple case study approach – 24 in-depth cases based on 72 semi-structured interviews were performed – to deal with a significant and relatively new issue, i.e. the role of Technology Providers in the Mobile Value Network. Through the creation of a system of strategic clustering matrices, four key business models currently adopted by MMTPs – “Pure Play”, “Full Asset”, “Third Parties Relationship-focused” and “Platform & Content Management” – are identified, and insightful conclusions on the impact of these actors’ newly emerging influence on the market’s competitive dynamics are drawn. The framework created supports a wide set of Mobile Communications stakeholders – both incumbent and new entrants – in their decision making and strategy analysis process.

Part 8
A resource-based framework to assess discontinuities in the distribution paradigm and their effect on incumbents’ strategies: the case of Mobile Network Operators and Application Stores

![Diagram](image)

**Figure 1.11 – Part 8 coverage of the Reference Framework**

**Contextualization**
- Business Area: Mobile Telecommunications Industry
- Actor: MNO
Research Questions:

- RQ7: Which is the link between Strategic Planning, Business Model Design, Value Network Configuration and Resource Management within the Mobile Industry?
- RQ8: How can MNOs tackle the strategic implications of environmental volatility and discontinuity?

Reference Framework Construct Addressed

- Step 4 – Strategy and discontinuity
- Step 4 – Resource, Competence and Capability Management

Findings

The discontinuity determined by a shift in the distribution paradigm in place has deep strategic implications, with specific reference to the resources, competencies and capabilities firms leverage on to achieve competitive advantage. Taking stock of a wide literature review on Strategic Management’s Resource-based View and Dynamic Capabilities Approach to ground and test the definition of “core” resources, competencies and capabilities, and adopting multiple case studies on an extensive set of relevant companies as the empirical research method, the present study analyzes the upfront issue related to the rise of the Mobile Application Store model as a substitute to the original Mobile Portal model from the incumbent Mobile Network Operators perspective, and proposes a resource-based framework to address the issue of how a distribution paradigm change can affect a firm’s resources endowment.

The original framework is built on three main steps, encompassing: identification and categorization of resources, competences and capabilities before and after the discontinuity takes place; application of literature-derived tests to assess the actual core status of traditional and emerging resources; and provisioning of strategic guidelines to support the management of the resources portfolio, as reclassified according to the discontinuity outcomes.

The framework can have both a methodological, a descriptive and a normative value. In addition to its academic significance, its adoption as an internal strategy analysis tool can benefit a wide set of stakeholders facing critical discontinuity conditions on the distribution side.
Chapter 2

2 COLLECTION OF STRATEGY ANALYSIS MODELS

The Chapter presents the collection of Strategy Analysis Models developed for the empirical context under scrutiny, i.e. the Mobile Telecommunications Industry. As explained in details in Chapter 1, each published scientific paper containing the core model is referred to as Thesis “Part”: while Part 1 deals with the longitudinal exploratory case study leveraged on so as to develop the overall Reference Framework, Part 2 to Part 8 include the models crafted through specific, stand-alone studies. As it is easily inferable through the analysis of the scientific papers’ findings, each piece of work focuses on the application of the reference framework’s guidelines and of the resulting research questions to a given research context, described by two variable:

- Mobile market segment – i.e., Mobile Content & Media, Mobile Web, Mobile Marketing and Advertising, Mobile Content & Service Delivery Platforms –;
- actor typology – i.e. MNO, MCSP, MMTP, DM, CO, WC –.

As such, the collection of papers does not aim at providing a full coverage of each and every market segment from the perspective of each and every actor, but it rather presents a set of noteworthy strategy analysis models for significant cases of market segments-actors combinations – as anticipated in Chapter 1 – Section 1.7 –.
PART 1

How to get Strategic Planning and Business Model Design wrong: the case of a Mobile Technology Provider
2.1 HOW TO GET STRATEGIC PLANNING AND BUSINESS MODEL DESIGN WRONG: THE CASE OF A MOBILE TECHNOLOGY PROVIDER

Running head
The study takes a “failure analysis perspective” to identify a list of ten major mistakes a firm’s top management can commit when undertaking the strategic planning and business model design processes, thus providing an anti-advice manual for entrepreneurs wishing to avoid common strategic pitfalls.

Key points
- Though successful stories have been naturally catching the attention of academics and practitioners, our study argues that failure cases hold an explanatory and normative value not to underestimate, since they can provide entrepreneurs with precious hints about where not to direct their strategic efforts.
- Through presenting a noteworthy case of planning failure, the study reveals how treacherous the strategic planning and business model design processes can be, and how dreadful influences can planning flaws have on a firm’s performance.
- Taking a “failure analysis perspective”, the major mistakes committed in the planning process are inductively extrapolated from the longitudinal case study performed, and interpreted on the basis of the findings of an extensive literature review, to be presented as a list of ten pieces of “anti-advice” with strong theoretical foundations and a straightforward value for entrepreneurs involved in strategic planning and business model design.

Keywords: Strategy; Strategic planning; Business model; Failure analysis perspective; SWOT analysis; Value Network; Resource-based view; Financial Arbitrage; Mobile Industry; Longitudinal case study.

“There is much to be said for failure. It is much more interesting than success.”

Sir Max Beerbohm (1872-1956)
Introduction

Failure has often been neglected by Strategic Management literature. From traditional pieces of work like Collins and Porras’s “Built to last” (1994), to recent studies proposing innovative strategic paradigms like Kim and Mauborgne’s “Blue Ocean Strategy” (2005), successful cases have naturally caught the eye of academics and practitioners, the former searching for any underlying theoretical implication, the latter looking for replicable managerial practices to help them leading their companies towards outstanding performance. The glorious aura springing from success undoubtedly – and reasonably – possesses a strong attractive power.

Nevertheless, as Sir Beerbohm wittily noticed, failure has interesting aspects as well, and holds an explanatory and normative value not to underestimate. Failures can teach many lessons, and shed light on issues seldom addressed or even spotted when the case under scrutiny is blessed with success. Taking a failure analysis perspective, which rigorously describes and analyzes unsuccessful events – seeking for the origin of mistakes by looking at the “how” and “why” things were done a certain way, not merely at “what” was ultimately achieved –, instead, stimulates a multi-faceted focus on the whole strategic picture, integrating a range of otherwise unmentioned dimensions, and can breed normative guidelines to prevent such mistakes from repeating.

A field that can benefit from such approach is that of strategic planning and business model design: an insightful analysis of noteworthy failure cases showing the major flaws a strategic planning and business model design process may be burdened with can provide researchers and managers with useful indications of where to direct future academic or business efforts, as well as precious hints about where not to go.

In the light of this argument, the main purpose of this paper is to identify and analyze the major mistakes a company’s top management can commit when undertaking the strategic planning and business model design process. The research focuses on an Italy-based Mobile Technology Provider, new entrant in the Mobile Content market, and therefore finding itself in the condition of developing a strategic plan and a business model for the new business area it is going to compete in.

Employing the longitudinal single case study methodology – based on fifteen semi-structured interviews carried out in two distinct moments in time, 2006 and 2008 –, the research is articulated into two main steps.

At a first stage, the planning and design choices that brought to the initial strategic and business model configuration are identified and described; afterwards, the current
configuration as derived from the second wave of interviews is displayed, in order to allow a comparison of the two configurations and let some process flaws emerge from the very actions the top management put through to solve them. At a second stage, a list of ten mistakes the company’s top management made in the process is inductively extrapolated from the case, and discussed on the basis of conclusions drawn from a wide review of existing literature on strategic planning and business model design. As a conclusions, inferences will be made concerning the paper’s cross-value for the research issues considered.

An overview on strategic planning literature

Strategic planning can be defined as the broad process encompassing the strategic activities of setting objectives, generating strategies, evaluating strategies, monitoring results, and obtaining commitment (Armstrong, 1982). Lorange (1980), in addition to the previously mentioned phases, also considers the budgeting and the linking to managerial incentives activities as key stages of the planning process. In the attempt of dissecting the whole process in its elementary parts, Bracker and Pearson (1986) identify eight planning components: objective setting; environmental analysis; strengths, weaknesses, opportunities, and threats (SWOT) analysis; strategy formulation; financial projections; functional budgets; operating performance measurement; and control procedures.

The body of knowledge dealing with strategic planning is understandably wide, and in time, several fundamental questions deserved the attention of researchers in the field. Coherently to the present study’s scope, the main issues here addressed are the following: the levels of strategic planning; the formal vs. informal strategy formulation process; the existing relation between strategic planning and firm performance; the balance of internal and external planning focus and the tools or models to be employed to support the planning activity.

The levels of strategic planning

Strategic planning has traditionally been divided into three levels, characterized by different scope and aim (Lorange, 1980; Hill and Jones, 2001): a Corporate level, focused on a company’s overall business portfolio, whose main task is to develop a
resource allocation plan to businesses differing in terms of riskiness and resource absorption; a Business level, focused on a single business area, with the aim of improving the company’s competitive position, planning future expansions to business niches and developing complementary business activities; and a Functional level, undercurrent to the Business level, whose task is to contribute to the strategic success of the business by focusing on the set of strategic variables contained in the domain of a particular functional manager. As it can be clearly inferred, the three levels have different implication with reference to strategy formulation and implementation.

**Strategic planning as a formal vs. informal process**

Concerning strategic planning as a process, authors have long debated about the role and nature of the underlying set of actions that brings to strategy formulation. In time, different strategic views or paradigms were developed: the two dualistic mainstreams on Strategic Management have been traditionally labelled by scholars as the “rationalist” and the “behavioural” – or “evolutionary” – schools (Grant, 1991; Van der Heijden, 1997; Chermack et al., 2001).

The classic rationalist perspective, supported by authors like Ansoff, Chandler, Taylor and Sloan (Micklethwait and Woolridge, 1997), has its core belief in the claim that strategic planning shall be a formal, rational process, carried out by the top management and a staff of strategic planners, which ultimately delivers a plan that is to be implemented straightforwardly as it is formulated. Such position is built on strong assumptions, like (almost) perfect predictability of events, clarity of intentions, rationality of planners and executers as well as full organizational understanding of plans (Mintzberg, 1994).

However, the previous assumptions’ limitations and the pitfalls several firms experienced when passing from strategy formulation to its implementation, led to a criticism of the rationalist school’s tenets. Back in 1976, a study from Harrison pointed out that long range plans had to be considered as tools to support planning and decision making, not as blue-prints of the firm’s future, as accurate long range forecasting was impossible.

Henry Mintzberg, in his renown work “The rise and fall of Strategic Planning” (1994), taught strategists an intriguing lesson: strategic planning, far from being the “one best way” to devise and implement strategies, rested instead on some major fallacies, about
the capability of perfect prediction, the plausibility of detaching strategists from the subjects of their strategy making and the ability of perfectly formalizing the strategy definition process. This argument became the basis of the *behavioural* or *evolutionary* perspective, and served to convey the idea that prediction is seldom accurate, and since in the end no one can perfectly “stick to the plan”, strategy shall be mainly emergent, ultimately made of a set of informal single management decisions taken in response to external, unpredicted changes.

**Strategic planning and firm performance**

The existing relationship between strategic planning and firm performance has been a subject of growing interest. Although questions have arisen concerning the metrics and the dimensions of analysis, which make the performance comparison sometimes difficult to carry out and interpret (Shrader et al., 1989), a wide number of empirical studies support the *rationalists* approach, arguing that a simple positive relationship between formal strategic planning and organizational performance exists, and in most cases planners outperformed non-planners (Wood and LaForge 1979; Armstrong, 1982; Robinson and Pearce, 1984; Greenley, 1986; Pearce et al., 1987; Bracker et al., 1988; Lindsay and Rue, 1989; Capon et al., 1994; Miller and Cardinal, 1994). Other studies (Clark, 1997; Glaister and Falshaw, 1999; O’Regan and Ghobadian, 2007) found that formal strategic planning tools use is quite widespread among Small-Medium Enterprises. Lyles and others (1993) propose that small firms which do more formal planning will also have a more comprehensive strategic decision process and adopt a wider variety of alternative strategies than will non-formal planners, in turn positively affecting their growth and profitability capability. A formal plan can even become the source of competitive advantage in an industry with strategic planning factor market imperfections (Powell, 1992); moreover, it is claimed that deliberate strategic planning can play a variety of important and useful roles peripheral to the strategy development and implementation process (Langley, 1988), and it strongly influences managers’ decision process and strategic change since it affects the set of strategic issues that do capture decision-makers’ attention (Dutton and Duncan, 1987). In addition to this, Armstrong (1982), together with Bracker and others (1988), concluded that sophisticated strategic planning benefits small firms in dynamic, high-growth industries where large changes take place.
Many of the previously mentioned studies, however, do not dare to thoroughly exclude the validity of an emergent, informal approach – despite the scarce empirical support it gains. Mintzberg himself came back to the subject, with an article again characterised by a title meant to impress: “The fall and rise of strategic planning” (1994). There, he held that the failure of strategic planning could be mainly brought back to a misinterpretation of its role, which instead lies in providing formal analysis to broad issues – rather than to discover the one right answer; to act as catalysts and supporters of managers – rather than replacing them; and to program the concrete steps needed to carry out the strategic vision. Therefore, a plan shall not aim at containing all aspects of strategic thinking and constraining strategy making; still, a plan can be a useful tool to provide the basis for rational analysis and decision making.

**The balance of internal and external planning focus**

A key issue strategists shall pay fair attention to is that of adequately equilibrating the internal and the external analysis effort, as well as the arbitrage of financial capital between internal (Equity) and external (Debt) resources. A well-grounded literature suggests that a good strategic planning process driving to above average performance is the result of correct interaction and fit of business management with its internal and external environment (Ansoff, 1985; Andrews, 1987; Porter, 1991; Houben et al., 1999). As Ansoff and Sullivan (1993) stated, the profitability of a firm is optimized when its strategic behaviour is aligned with its environment; Thwaites and Glaister (1992) reinforced this concept arguing that to succeed in an industry an organization must select a mode of strategic behaviour which matches the levels of environmental turbulence. Furthermore, given the intensification of corporate environmental complexity and the increasing occurrence of radical changes, greater attention shall be devoted to developing and refining the environmental scanning element of the planning system (Ansoff, 1980; Thomas, 1980; Veliyath, 1992; Lozada and Calantone, 1996). Among the highest ranked set of planning support tools/techniques employed by firms we find the Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis and the Critical Success Factors (CSF) identification (Clark, 1997; Glaister and Falshaw, 1999).

Ferrel and others (1998) define SWOT analysis as a model which “assesses an organizations strengths – what an organization can do – and weaknesses – what an
organization cannot do – in addition to opportunities – potential favourable conditions for an organization – and threats – potential unfavourable conditions for an organization –”. The role of SWOT analysis is to take the information from the environmental and the internal analysis and separate it into internal issues (strengths and weaknesses) and external issues (opportunities and threats), therefore constituting a key element of the strategic planning process (Bracker and Pearson, 1986; Houben et al., 1999). SWOT possesses a great value as a Strategic Management tool, and if used dynamically – emphasizing its process values as well as its output – it can support the planning process (Pickton and Wright, 1998).

Operationally, SWOT analysis is grounded in and draws from contemporary Strategic Management theories and models. The external strategy analysis is often based on Michael Porter’s Five Forces model (1980) or its evolutions (Grundy, 2006), further integrated with the Value Network model (Normann and Ramirez, 1994; Gulati et al., 2000; Peppard and Rylander, 2006), which allows to shed light on a business’ structural opportunities and threats. Moreover, concerning the underpinning of a firm’s strengths and weaknesses, recent studies (Valentin, 2001) stressed as internal strategy analysis can largely benefit from the perspective brought in by the resource-based view of the firm (Wernerfelt, 1984; Hamel and Prahalad, 1990; Barney, 1991; Peteraf, 1991; Teece et al., 1997; Barney and Clark, 2007).

CSF are defined by Boynton and Zmud (1988) as “those few things that must go well to ensure success for a manager and an organization”. The CSF approach is often embraced by managers (Freund, 1988), as it constitutes an important input for many steps of strategic planning process, such as: environment analysis; resource analysis; and strategy evaluation (Leidecker and Bruno, 1984; Jenster, 1987).

Another major issue which concerns the balance of internal and external efforts is related to the financial arbitrage between capital sources of different origin.

Choices concerning capital structure – that is, the composition of different capital sources, either owners’ funds (Equity) or liabilities (Debt), employed by a firm to finance its assets in the balance sheet – are strictly related to corporate strategic planning (Parsons and Titman, 2007), as the adoption of different levels of debt and equity in the firm’s capital structure is claimed to be among the range of those firm-specific strategies used by managers to create competitive advantage (Gleason et al., 2000).
The literature dealing with capital structure has its roots in the study from Modigliani and Miller (1958), which concluded that financial arbitrage – that is, changes in capital structure composition – is irrelevant to a firm’s value creation ability. In time, however, such literature stream evolved and departed from this first study and its underlying ideal hypotheses of absence of taxation and bankruptcy costs, perfect information and rationality of both managers and investors.

The literature on financial arbitrage has been largely developing following three main paths (Kjellman and Hansén, 1995; Flannery and Rangan, 2006): the “trade-off theories” (Jensen and Meckling, 1976; Myers, 1977; DeAngelo and Masulis, 1980; Jensen, 1986), which dropped the first hypothesis and considered bankruptcy and agency costs; the “pecking order theories” (Donaldson, 1961; Akerlof, 1970; Myers and Majluf, 1984) which considered the information asymmetry and the adverse selection problems; and the more recent “market timing theories” (Stein, 1996; Baker and Wurgler, 2002), related to the research on behavioural finance, which assumed a certain level of irrationality in investors’ and managers’ decisions.

Given the scope of the present study, two main topics relevant to financial capital arbitrage are discussed: the presence of a planned debt-equity leverage target and the modality of adjustment towards target; and the determinants of choices on capital structure composition.

The actual presence of an explicit debt-equity target leverage which derives from a financial planning activity performed by the top management has been object of several studies, which typically concluded that firms usually do have target capital structures (e.g., see Vogt, 1994; Kjellman and Hansén, 1995; Gleason et al., 2000; Gaud and others, 2003; De Haas and Peeters, 2004; Flannery and Rangan, 2006; Brounen et al., 2006; Gaud et al., 2007); however, those studies focusing on the way such firms adjust their debt-equity composition towards target showed scattered results.

Gleason and others (2000) state that identifying and deploying the appropriate mix of debt and equity is amply rewarded in the marketplace, because other factors held constant, this appropriate mix of debt and equity minimizes a firm’s cost of financing. The importance of setting a target debt ratio is also supported in Brounen and others (2006), while Kjellman and Hansén (1995) add that firms seek to maintain a target capital structure in order to maximize firm value, by minimizing the costs of prevailing market imperfections. Investigating the relationship between leverage and competitiveness, Parsons and Titman (2007) also find that high leverage appears to
inhibit a firm’s ability or willingness to compete aggressively, especially against well-financed competitors. A recent study (Gaud et al., 2007) shows that firms limit themselves to an upper barrier to leverage, but not to a lower one, and internal financing, when available, is preferred to external financing.

In terms of speed of adjustment, a study from Vogt (1994) argues that firms appear to adjust slowly to long-run financial targets; this argument is reinforced by De Haas and Peeters (2004), who claim that because of information asymmetries between firms and banks, firms prefer internal finance above bank debt – following a pecking order behaviour – and adjust leverage only slowly. Also, Gaud and others (2003), in their study on Swiss firms, find that such firms do adjust towards a target debt ratio, but the adjustment process is much slower than in most other countries, and relate this finding to a set of influencing elements belonging to the institutional context.

On the contrary, Flannery and Rangan’s (2006) findings indicate that the typical firm closes about one-third of the gap between its actual and its target debt ratios each year.

The underlying motives and benefits of adjustment to targets are also investigated. According to Hovakimian and others (2004), dual issuing of both equity and debt allows to offset the deviation from the target resulting from accumulation of earnings and losses. O’Brien and others (2007) argue that capital structure swaps – either under the form of equity-for-debt or debt-for-equity swap –, if properly managed, can increases the shareholders’ long-term wealth when a firm’s debt or equity is misvalued.

Assessing target capital structure adjustment speed before investments, Dudley (2006) empirically finds that that growth firms – defined as having a high market to book ratio – react to unexpected shocks to their investment opportunity set by first issuing equity to finance initial capital expenditures and then issuing debt to simultaneously finance remaining investment and move leverage back to its target; low market to book firms, instead, react to positive changes in their investment opportunity set by issuing debt and increasing leverage – though subsequent reversion in their leverage ratios is also observed –. Byoun (2008) suggests that firms move toward the target capital structure when they face a financial deficit/surplus, while Margaritis and Psillaki (2007) investigate the relationship between firm efficiency and leverage, finding that a positive relationship exists between efficiency measured as the distance from the industry’s best practice production frontier and leverage.

Debt composition is also a topic of growing importance. The majority of published empirical research concerning capital structure seem to concentrated on the traditional
dualism between equity and debt (e.g., see Marsh, 1982; Jalilvand and Harris, 1984; Bayless and Chaplinsky, 1990; MacKie-Mason, 1990; Jung et al., 1996; Brounen et al., 2006; Frank and Goyal, 2007; Gaud et al., 2007). However as Rauh and Sufi (2008) point out, the heterogeneity of debt should not be disregarded, as several different types of debt have emerged in time, and firms often show to significantly modify the relative composition of their debt despite its total value only changes slightly.

Another major stream of research focused on the determinants of capital structure and financial arbitrage choices, arguing they are mainly influenced by a combination of firm characteristics and country characteristics.

Among the firm-specific determinants evidenced by the existing literature, we find: structural characteristics, such as size, age, firm type – private or public – and importance of tangible assets (Gaud et al., 2003; De Haas and Peeters, 2004; Brounen et al., 2006; Frank and Goyal, 2007; De Jong et al., 2008); value-related characteristics, like profitability, cash-flow generation ability, financial distress and competitiveness (Lee, 1995; Shenoy and Koch, 1996; De Haas and Peeters, 2004, Vasiliou and Daskalakis, 2009); and governance characteristics, like corporate governance, organizational practices and market timing (Kjellman and Hansén, 1995; Bertrand and Schoar, 2003; Gaud et al., 2007). Within this latter category, interesting studies emerged which investigate the impact of managerial traits on corporate financial policy and firm value (Hackbarth, 2008), inferring that managers’ culture, beliefs, background and personality traits introduce a bias that influences financial decisions (Hofstede, 1980; Bertrand and Schoar, 2003).

The capital structure puzzle is also determined by country-specific factors (e.g., see Demirguc-Kunt and Maksimovic, 1999; Booth et al., 2001; Claessens et al., 2001; Bancel and Mittoo, 2004), both in a direct and in an indirect way, through their influence on firm-specific determinants (De Jong et al., 2008). Such country-wise elements are often referred to as “culture”, which encompasses the legal environment, the tax environment, the economic system – influencing bankruptcy cost – and the technological capabilities at a country level (Harris and Raviv, 1991). Still, the empirical results on the influence of cultural factors on arbitrage choices and corporate debt ratios are contradictory: while Brounen and others (2006) conclude on the importance of such determinants and Korajczyk and Levy (2003) find a cyclical relationship between target leverage and macroeconomic conditions, Gleason and others (2000) and Vasiliou and Daskalakis (2009) infer that differences in institutional
characteristics do not seem to affect the way of thinking of financial managers when they decide on capital structure.

**An overview on business model design literature**

The concept of business model generally refers 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, Vitale, 2001). As Teece (2009) recently put it, the essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.

As a literature stream, business model design has evolved from a piecemeal approach that looked for the single identification of typologies or taxonomies of models (Tapascott et al., 2000; Amit and Zott, 2001; Rappa 2001; Weil and Vitale, 2001), to one searching for the development of a clear and unambiguous ontology – that is, the definition of the basic concepts of a theory – (Osterwalder, 2004), that could be employed as a generalized tool for supporting strategy analysis of firms. In parallel, business model has become an extensive and dynamic concept, as its focus has shifted from the single firm to the network of firms, and from the sole firm’s positioning within the network to its entire interrelations and hierarchies (Ballon, 2007).

What is widely accepted by literature is that a business model shall be analyzed through a multi-category approach, as a combination of multiple design dimension, elements or building blocks. However, the proposed dimensions and interrelations are quite diverse, and the existing body of knowledge shows a lack of homogeneity (Johnson et al., 2008). Noteworthy attempts of providing a unified and consistent framework can be found in several works. Yu (2001) mentions different critical business model components such as assets, markets, customers, competitors, products, services, costs, prices, revenues, profits, market shares, economic scales, marketing strategies, competitive advantages. According to Hedman and Calling (2003), the conceptual business model should include elements such as customers and competitors, the offering, activities and organisation, resources and factor market interactions. Osterwalder (2004), in his proposed business model design template, identifies four key dimensions for a business model: infrastructure; offering; customers; and finance. Morris and others (2005) propose a six-component framework for characterizing a business model, regardless of venture type, which comprehends: value creation; value target; internal source of
advantage; firm market positioning; value capture; entrepreneur’s time, scope and size ambitions. Ballon (2007) holds that the recurrent parameters a business model is built on can be brought back to the general concepts of value – value proposition and financial configuration – and control – inter-firm or value network relationships –. For Johnson and others, (2008) a business model consists of four interlocking elements that, taken together, create and deliver value: customer value; profit formula; key resources; and key processes. Recently, Amit and Zott (2009) suggest two sets of parameters that systems designers need to consider: design elements – content, structure and governance – that describe the architecture of an activity system; and design themes - novelty, lock-in, complementarities and efficiency - that describe the sources of the activity system’s value creation.

The literature review on business model design allowed to individuate a literature gap concerning strategy creation and business model design in the relatively young Mobile Content market and with reference to the Mobile Technology Provider actor typology. A framework which identifies the key business model parameters or “building blocks” for the actor typology under scrutiny, partly filling the existing gap, is found in Ghezzi (2009). According to this study, a Mobile Technology Provider’s business model is to be assesses considering the following three macro-dimensions, in turn divided into nine parameters.

1. **Value Proposition parameters.** Platform characteristics; Offer positioning; Platform provisioning; Additional services; Resources & competencies.
2. **Value Network parameters.** Vertical integration; Customer ownership.
3. **Financial Configuration parameters.** Revenue model; Cost model.

The abovementioned framework is later used as a reference model to analyze the initial and current business models developed by the company, so to support a comparison of the two and to underline of the changes occurred in the lapse of time considered.

The business model design literature is gaining growing interest within the Strategic Management research field. Nevertheless, though intuitive (Bloodgood, 2007), the explicit relationship between strategy and business model is currently under-investigated: 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), innovation management and theory
(Teece, 2009) are driving scholars to fill the existing literature gap, though the issue remains undoubtedly open.

**Research Methodology**

The present research is based on case studies, defined by Yin (2003) as “empirical inquiries that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”.

Qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomenon of strategy and business model development within a given industry – that is, Mobile Content – characterized by a high level of dynamicity and competitive turbulence, and with reference to a specific typology of actor – a Mobile Technology Provider –, and at thus building new theory – or extending existing theories – on it (McCutcheon, Meredith, 1993; Eisenhardt, Graebner, 2007).

To accomplish the previously identified research propositions, a single, in-depth longitudinal exploratory case study on an Italy-based Mobile Technology Providers was performed. (The company name will not be disclosed throughout the paper. All proper names of informants have not been mentioned as well, to preserve their anonymity).

This company could be defined a “MTP” as it presented both a well-defined line of business dedicated to the commercialization of Content and Service Delivery Platforms (CSDP) or platform modules, and an offer directed to the Mobile Telecommunications market.

Coherently to 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 process of interest was “transparently observable”. Specifically, at the time the first set of interviews were collected, this company was an early entrant on the Mobile Content market, and was going through the process of designing a suitable business model.

A single case study methodology allows to provide a thorough, extensive qualitative description and analysis of the strategic planning and business model definition process with the needed depth and insight, hardly replicable when considering a wider theoretical sample. Furthermore, the longitudinal approach enables the establishment of
a comparison between the company’s conditions in different moments of its history, thus obtaining a valuable “ongoing view” on how it developed with reference to the specific variables under scrutiny.

From May to June, 2006, ten face-to-face semi-structured interviews were held with four persons identified as key participants in the firms’ strategy definition and business model design at different levels. The population of informants included the following top and middle managers: Chief Executive Officer (CEO); Chief Information Officer (CIO); Marketing & Sales Manager (MSM); Product Managers (PM).

The semi-structured nature of the interviews made possible to start from some key issues identified through the literature – such as the key strategic planning elements and the business model parameters highlighted by the existing body of knowledge –, but also to let any innovative issue emerge from the open discussion.

The identification of core topics the discussion of the process flaws could brought back to leveraged on practices borrowed from “Grounded Theory” methodology (Glaser, Strauss, 1967), which helps developing new theory or a fresh insight into old theory: after identifying the research “core categories”, the related “conceptual categories” were then isolated and described by means of applying the “open coding” technique to the interviews transcriptions.

In order to assess the strategic planning and business model configuration changes due to the initial process flaws, more than two years after the first contacts with the firm – from June to July, 2008 –, a second wave of 5 further interviews were held with three key informants – this time, the Chief Executive Officer, the Chief Information Officer and the Marketing and Sales Manager were involved –. By maintaining the same research structure in terms of scheme of analysis and questions, the comparability of 2006 and 2008 results was assured. The only addition to the original scheme of analysis was related to questions concerning the strategic planning and business model variation in time. In 2008, the informants were asked to identify any perceived difference between the initial and the current strategy and business configuration.

This further set of interviews provided the study with the requested longitude, thus supporting a within-case analysis of changes in the firm’s strategic dynamics and business architecture with reference to the temporal dimension.

The need of assessing the whole strategic planning and business model design decision making process, paying attention to different subunits within the companies, led to the
adoption of an “embedded” case study, with multiple units of analysis, related to the set of “decisions” to be made at a business model level. 

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 sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents – both official and informal –, study of secondary sources on the firm – research reports, websites, newsletters, white papers, databases, international conferences proceedings –. This combination of sources allowed to obtain “data triangulation” or “perceptual triangulation”, essential for assuring rigorous results 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 rigor of the methodology employed allow to mitigate this limitation.

**Strategic planning and business model design inside the analyzed firm**

**The initial configuration**

The research took into consideration an Italian Technology Provider, just entering the new business area of Mobile Content. Founded in the early ’90 to operate as a software house for telecommunications systems, in 2006 the company’s core business lied on the design and provision of customer care multichannel platforms (call centres, Interactive Voice Response and so on). At this time, the company – classifiable as a Small-Medium Enterprise – had matured advanced skills in content management and channels integration. Moreover, in 2006 the Management Buy-Out process started two years before was completed, making the company totally independent from the group it previously belonged to. For the top management, it was time to look for a business expansion, in order to create the conditions for higher growth and revenues. As the CEO stated:

“*Now the company structure is linear, and we find ourselves in an ideal situation for making strong strategic choices*.”
Thanks to the past cooperation with Operators belonging to the Mobile Industry, the company had the chance to come into contact with the Mobile Content segment, in which it perceived an high level of attractiveness and potential profitability, especially in the niche of video services. The main reasons for the subsequent choice of penetrating the Mobile Content market were disclosed by the initial declarations of the CEO:

“We consider the business area as particularly attractive, because of its vicinity to our core, and of the prediction that incumbent players are about to invest heavily on infrastructure platforms to enable their value added services offer. The market is going to grow dramatically in the short term: and we want to be there when that happens”.

This point was later confirmed by the Marketing & Sales Manager:

“Our solution portfolio could be easily enlarged to embrace innovative mobile video solutions Mobile Network Operators are going to need to deliver their rich media services”.

When asked about the degree of formality the strategic planning process was subject to, and the tools adopted to support such process, the CEO provided a vague answer:

“We adopt a formalized planning process. We do have our staff doing the planning and analysis job”.

These words, however, were somewhat contradicted by the Marketing & Sales Manager:

“We want to be strategically flexible, plans are only sketched: after all, the final word on the strategies to follow is obviously the CEO’s…”

At a product development level, the new platform development represented an addition of functionalities to the existing solution, and did not constitute a major technological issue for the company’s software engineers. According to the CIO:

“After having developed the platform for fixed and IP network, for us, the mobile channel integration was a piece of cake. We had the technology, we had the know how: it was just about applying it all to a new market”.

The idea of positioning the offer on the video segment held some criticalities, that were quickly overcome thanks to the experience matured in similar project. This clearly emerged from the words of the Product Manager:

“Making the platform capable of real-time assembly and delivery of video content was quite messy and made us sweat; but nothing we couldn’t handle after all. We had done that before”.
The market value drivers the company wanted to leverage on appeared clear and recognizable to the management: video services and real-time content creation and adaptation were key to success. Therefore, the MTP was positioning itself to deliver innovative, high quality solutions, looking for product leadership in the promising video services niche.

Concerning the role the company desired to play within the Mobile Content value network, a clear statement by the CEO synthesized it:

“We are essentially a technology provider, and we want to maintain our traditional focus”.

The “pure technology provider” positioning was reinforced by further decisions concerning platform provisioning and complementary services: in-house installation of the Content & Service Delivery Platform within Mobile Network Operators’ (MNOs) infrastructure was the only option made available; customers could also rely on the MTP for the delivery of technical services related to the platform’s operation management – maintenance, upgrading, and so on –.

With reference to the revenue model adopted, the company opted for a rigid platform selling to the customer, characterized by fixed revenues for the MTP. The possibility of establishing a “revenue sharing” model, where revenues coming from the selling of content and services published on the platform are shared between the MTP and its customer, was strongly criticized by the Marketing & Sales Manager:

“We absolutely don’t want to set up a dirty model where our revenues and our customers’ revenues are somehow not clearly distinguished. Revenue sharing is not just way too risky an option for a technology provider: it’s simply wrong. Our positioning must be fully transparent to our customers”.

**The current configuration**

When the firm was contacted again in 2008, the situation looked radically different than two years before. The company’s future within the market was far from looking bright. Falling short of managers expectations, the market had failed to keep its promises of high growth and consistent revenues. Instead, it had revealed its true nature: a context characterized by high levels of complexity, dynamicity and scarce predictability of future trends.
According to the CEO, the current situation the company was going through was discouraging:

“We predicted the market, especially the video segment, would grow dramatically. And when I say dramatically, I don’t mean a 15%-20% growth per year: we expected a 50% growth rate. Well, till now, this just didn’t happen. This is an area we’ve been investing on for three years […], and what we found out now is that, objectively, the results we obtained are so poor they wouldn’t justify to hold the current position.[…] Maybe we made some mistakes in the first place.”

Moreover, the international reach of the company allowed to verify that the criticalities were not depending on some specific condition proper of the Italian context, but could be considered a generalized characteristic of the global market.

The market complexity and dynamicity are well depicted by the words spoken by the Marketing & Sales Manager, who spontaneously admitted the incapacity of predicting the Mobile Content’s future scenarios – the manager even got to ask the researcher for some “hints” to support an interpretation of the competitive environment, thus reinforcing the idea of the absence of a clear direction –:

“My idea of the current market trends is at the moment so confused that, personally, I don’t deny that giving the company a clear indication on where to invest is really a tough call”.

When asked again concerning the supporting tools adopted for strategic planning, the Marketing & Sales Manager confirmed the lack of clarity:

“We are evaluating the chance of adopting some sort of formalized tool; we may even turn to a Consultancy firm. We are starting to feel the need of keeping track of our strategic orientation”.

According to the interviewed managers, the causes for such change could be brought back exogenous factors: the scarce commitment of MNOs; the absence of a real “killer application” for video services; and to the uncertainty caused by the unclear norms regulating mobile premium services commercialization. As the Marketing & Sales Manager and the CEO pointed out:

“The MNOs themselves don’t seem committed, they don’t want to bet on innovative video services. And, even worse, when we sit around a table to discuss about any possible cooperation, they ask us what kind of services to develop to attract their own customer base. That’s something they should know! This is not a good sign”.
Being the Operators the “network focal”, – that is, the central firm within the network, expected to drive the whole market’s development –, the absence of strategic initiative on their part determines a strong sense of disorientation, making the identification of the market’s true value drivers extremely complex.

In order to cope with this unexpected situation, the company reacted by trying to reposition itself: in doing so, it departed from the initial configuration, and appeared to be adopting an approach based on a higher openness and third parties involvement. The management started looking outside the company’s boundaries, searching for greater dialogue and interaction with other actors in the Value Network. The CEO stated that:

“At the moment, we are constantly talking to every actor in the market”.

As a whole, all the informants perceived the urgent need of reshaping the business configuration under banner of flexibility, at all levels: from the value proposition to the activities covered, to the financial configuration adopted. Talking about the reorientation of the solution portfolio, the CIO commented:

“We are going through a process of repositioning our platforms on more generalist content and services. We are also trying to figure out whether our video solutions may be reapplied to different contexts, like the Web”.

The shift from a rigid vision of the products was also testified by the new tendency of establishing joint projects with several different market players, so to test, by “trial and error”, the commercial feasibility of the initiatives without concentrating investments and the related risks.

Consistent changes also affected the revenue model. Quoting the Marketing & Sales Manager:

“Our level of flexibility is getting higher and higher as time goes by, and we are willing to set up a wider range of revenue models, if it can win us customers. We are even evaluating revenue sharing models, even if, I have to admit, I don’t like them that much”.

The need of sustaining the business made the company even depart from its initial negative stance towards revenue sharing, regarded as dangerous for its competitive implications: as will be discussed later, such radical change can be interpreted as a symptom of the lack of a clear strategy driving the firm’s choices.

Concerning the role the company wished to play within the value market, the perceived environmental complexity led the management to strive for a more active positioning, potentially extending the original coverage of activities towards the downstream chain:
this also led to participating to a call for tender to manage an operator Mobile portal. The company was in desperate need of customers, and was ready to exploit every chance the environment was going to offer; even if this meant to abandon the “pure” technology provider role.

As a conclusion, the top managers declared their will of remaining and keep investing on the Mobile Content market: nevertheless, they somehow admitted Mobile Content was never the strategic focus for the company. Taking from the words of the CEO: “*We moved in the Mobile Content market as a diversification manoeuvre of our past offer. Thanks God, our main business unit is still focused on a different, consolidated market, generating 90% of our revenues. This allows us to treat the Mobile Content business area as start-up market, following the logics of resources allocation proper of businesses portfolio management*”.

His final statement was probably revealing: “*I guess we underestimated the business’ strategic complexity. And we’re now paying the consequences*”.

The business was and remained a “question mark”, and the company was trying to face turbulence and change though a profound reassessment of the initial configuration it shaped. In fact, this reassessment not only encompassed the business model adopted; it also dealt with the underlying strategic approach which guided the design of such model in 2006.

![The shift of approaches](image)

As emerged from the second wave of interviews, in 2008 the decisions taken two years before were put under discussion, and to a great extent reconsidered.

At a business model design level, the partial realization of the mistakes made led to a heavy reconfiguration of many parameters from the original to the current model. The changes are synthesized in Table 1: the comparison, meant to underlining the parameters shift, is based on the building blocks proposed in Ghezzi (2009).

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<td><strong>Value Proposition</strong></td>
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<td><em>Platform Characteristic</em></td>
<td>End to end solution&lt;br&gt;Scarce modularity</td>
<td>Higher platform modularity and interoperability</td>
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<tr>
<td><em>Offer Positioning</em></td>
<td>Innovative video service coverage</td>
<td>More flexible, multi-purpose platform, open to generalist services</td>
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<td>Platform Provisioning</td>
<td>Additional Services</td>
<td>Resources &amp; Competencies</td>
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<td>In-house installation</td>
<td>Technology management of the platform</td>
<td>Technology-oriented r&amp;c</td>
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<td>Business separation</td>
<td>Technology management of the platform</td>
<td>Effort to develop content-oriented r&amp;c (“editorial partnership”)</td>
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**Table 1.** A comparison between the original and the current business model configuration

At a strategic planning level, the managers realized the need of introducing some sort of formalization in the strategy definition process, leveraging on traditional tools of analysis: still a lack of an overall vision remained, as the problems emerged showed to have deep roots in the company’s approach to strategy itself.

**Ten mistakes to avoid at a strategic planning and business model design level**

Throughout the two waves of interviews with different managers, the emerging main theme or recurring issue was the search for the most suitable strategic and business architecture for competing in the newly entered market, and, therefore, strategic planning and business model design were found to be the “core categories” (Glaser and Strauss, 1967) of the research. Through applying the “open coding” method proposed by the Grounded Theory approach, the main “conceptual categories” related to the core categories were labelled and identified. Such categories corresponded to the core criticalities emerged in the process.

As anticipated, some flaws in the process were spotted early by the management itself, which then tried to either correct the mistakes or constrain their impact on the company’s performance, while others, inferred by the literature review carried out, still burden the existing strategic and business model configuration.
The major mistakes committed in the process are inductively extrapolated from the case and filtered through the literature review, to be presented below as a list of ten pieces of “anti-advice” entrepreneurs involved in strategic planning and business model design should not follow.

**Mistake 1 – Stating the strategic objectives unclearly, and failing to translate corporate-level priorities into business-level goals**

The objective setting stage is widely recognized as the activating strategic planning step. Any mistake committed at this initial stage has a cascade effect on the overall process. Also, given the three-layered subdivision of planning and the relationships between layers, a key activity for strategists lies in the translation of higher-level, holistic priorities into lower-level, specific goals.

In the case presented, neither of the two recommendations were followed correctly. As can be inferred by deeply analyzing the interviews and the additional sources available, in 2006, after the Management Buy-Out, the company found itself in the condition of looking for new revenues to sustain its growth. Almost accidentally getting in contact with players belonging to the Mobile Industry, the company sought to take advantage of a contingent opportunity, and prepared to enter the new market. While the corporate priority was hence clear, the business selection choice was almost randomly taken. Following the corporate strategy input, the management chose to “rush in” the neighboring business area where, apparently, it could easily pursue correlated diversification: no further justification – in terms of market attractiveness, business portfolio efficiency, and so on – were provided.

Moreover, an insufficient effort was put in setting the business goals and developing a dedicated strategy, which – as demonstrated later – proved to lack an adequate balance. The CEO final statement concerning the relevance of the traditional business in comparison to the start up market almost appears to be an admission that Mobile Content was never a strategic priority for the company, and was probably left behind in terms of resource allocation.

In addition to this, the CEO’s initial expectations in terms of market growth were unrealistic, especially when paired to the relatively limited effort put in the new endeavour: such discrepancy – which led, initially, to misguide the company towards an insidious business area, and later, to an exaggerated perception of failure – should have
been closed before planning was translated into action, by means of several moves, like a lowering of the top management’s expectations though improved information, a business level adoption of a more aggressive business plan, or a corporate level rebalance of resources allocation.

**Mistake 2 – Misinterpreting the deliberate vs. emergent strategic planning dualism**

As the literature review showed, the academic debate concerning the degree of formality a strategic planning process should be subject to has not provided a unquestionable and flaw-proof answer.

Empirical evidences present in existing studies suggest superior performance related to formal planning – especially in dynamic industries where large changes take place –, though successful cases of informal planning are present. What descends from this apparently unsolved issue is the lesson that strategy definition is case-sensitive: both approaches are plausible, if consistently applied, and management shall select the one it believes that best fits its managerial attitude and its organizational structure and culture.

Strategy is not constrained to deliberateness; still, what shall be clear and deliberate is management’s decision on whether to formalize it or not, and to what extent.

On the contrary, the case study demonstrates the top management inconstantly passed from a rationalist to a behavioural or evolutionary approach almost out of the blue, without taking a clear stance – as testified by the contrasting statements of the CEO and the Marketing & Sales Manager –: such absence, passed off as “strategic flexibility”, reveals instead a deep misinterpretation of the deliberate vs. emergent planning dialectic and contributed in confounding managers and staff members about the role of strategic planning, which in the end was shrunken and overlooked in its key steps. In turn, this resulted in a generalized sense of strategic disorientation and uncertainty.

**Mistake 3 – Unbalancing the internal and external strategy analysis**

The assessment of business-specific opportunities and threats, as well as of company-specific strengths and weaknesses, is critical. Balancing the external and internal dimensions is also essential: strategy analysis shall focus on issues concerning the business’ environment, not merely inward on the problems of business-as-usual.
in such step may represent a serious obstacle to realistic planning, especially for companies competing in rapidly changing environments.

The use of planning tools like the SWOT model can support this process, which shall be rigorous, not only vaguely sketched (Houben et al., 1999).

Nevertheless, the company failed to achieve a correct balance between external and internal focus. In particular, opportunities and threats identification was mostly replaced by a sort of “word of mouth” coming from business customers: on the basis of such information and data – which, from an ex post analysis, can be labelled as fragmentary and incomplete –, lacking the necessary insight, a sloppy external strategy analysis was performed, which brought the top management to conclude the market was attractive and extremely profitable. A detailed external analysis would have allowed to identify the market peculiarities, as well as the threats resident in the video segment, and develop a business strategy accordingly.

A deeper focus was put on carrying out an internal strategy analysis, aiming at identifying how the company could be adapted to fit the new business: since, apparently, the products could be easily adjusted to respond the apparent Mobile players needs, the top management was confident that the company could rapidly take the role of MTP, substantially replicating the model adopted in the traditional business.

As the managers were to figure out, the “lame strategy” resulting from this excessive “inward focus” and lacking an adequate external analysis was not suitable for driving the competition in the newly entered market. To get back on track, they had to develop a configuration characterized by a stronger tie bounding a “two footed strategy” – a strategy founded on both external and internal analysis – and the business model, striving to find the right alignment between internal and external focus.

**Mistake 4 – Leaving the value system configuration unmapped**

Another major external strategy analysis issue not to overlook concerns the understanding of the value system configuration, in terms of players’ role and value creating activities’ allocation, since the recognition of these elements can guide a company’s strategic positioning and partnering choices.

As it is commonly recognized by several authors (Wirtz, 2001; Li & Whalley, 2002; Peppard & Rylander, 2006; Funk, 2009), the Mobile industry is going through a period of deep value system reconfiguration, which recombined its activities flow in the shape
of a value network. Therefore, structural network characteristics – focal or peripheral roles; critical network influences; structural equivalences; structural holes; revenue streams – as well as dynamic effects – lock-in and lock-out; learning races – (Gulati et al., 2000) have to be assessed when selecting the desired competitive position.

A value network analysis applied to the Mobile Content market would have revealed a complex landscape, where the MNOs still hold a central position thanks to their key assets – network infrastructure, licenses, charging and billing systems and customer ownership due to the control of the users’ SIM cards (Kuo and Yu, 2006) – but a wide set of third parties is rising around them, most of which are more involved in the Mobile Content niche – a true strategic priority they are willing to invest in innovation for – than the operators themselves; Technology Providers, on their part, have a hard time trying to reap a high share of revenues, unless their platform become core to their business partners’ offer, or lock-in effects are in place.

In 2006, the top management did not have much of a clue about such market conditions, and had not mapped how value creating activities were covered by incumbent players. Following the assumption that partnership with Operators was the one and only key to establish a foothold in the market, managers misplaced their offer and disregarded Service Providers as prospects, thus missing a clear strategic opportunity. When asked if they already thought about marketing their products to actors different from the MNOs, the managers were surprised, as if it was something that just never popped up in their minds. A better understanding of the actors’ roles within the value network would have driven their offer where it was most desired.

**Mistake 5 – Underestimating the impact of exogenous factors, like market turbulence**

In one of his latest pieces of work, Michael Porter (2008) clarified that exogenous factors are not to be confused with the five competitive forces driving a market’s attractiveness up or down; nevertheless, they shall not be overlooked as they can impact on the market’s structure in the medium-long term. This idea is consistent with the work of several authors stressing the impact of extra-firm dimensions on profitability and suggesting the need of matching the strategic behaviour with the levels of environmental turbulence and unpredictability.

The case presented is a vivid example of how failing to address exogenous factors can lead to taking a wrong perspective on the strategic planning and business modelling
design process, with heavy repercussions on the planning and design outputs. The Mobile industry is characterized by high dynamicity, as testified by: the growing convergence with the Web and the Media industries; the rising of new market segments and related services; and the subsequent value system reconfiguration. Still, what emerges from the longitudinal case study is that the company initially had rather a hindsight orientation (Veliyath, 1992), based on the incautious assumption that a reasonable continuity and stability in the external environment’ evolutionary paths existed. This wrong assumption also contributed to convince the management that external analysis could be largely disregarded, as previously shown, and led to the selection of a risky market niche characterized by unpredictable and highly volatile trends.

This pitfall also had an “amplification effect” the other mistakes committed: the lame strategic and business configuration put in practice by the management stumbled when shaken by the market’s wind of change. Had the company developed a well-balanced strategy which correctly addressed both exogenous and endogenous factors before entering the new market, the impact of the fast-changing environment on the initial approach would have been less dramatic, and would have not determined such radical changes.

Yet, we must underlined that the major flaw related to endogenous factors assessment lied in failing to identify that change was likely to occur, not in the incapacity to predict its effects: perfect forecasting is just a fancy, but learning to expect change as a probable element to face in a business endeavour puts the strategic thinker in the right position to understand it, anticipate it, tackle and constrain it, or, should this last option prove unfeasible, strive to interiorize it.

**Mistake 6 – Failing to assess the internal resources endowment and link them to Critical Success Factors**

The internal resources & competencies identification and assessment is a milestone of internal strategy analysis and financial analysis as well, as it pinpoints the assets a company relies on to create a solid and sustainable competitive advantage, and it drives the choices on capital arbitrage that should be consistent to and supportive of the overarching strategy shaped to achieve such advantage. As the strategic planning practices taught, crossing the core assets portfolio to a business’ critical success factors
helps determining whether the company owns the right endowment to obtain above-average returns, or which gaps it should fill to avoid competitive misfortunes. Yet, contradicting the guidelines dictated by literature (Boynton and Zmud, 1988), CSF were never rigorously collected.

The top management took for granted that what it needed to design and deliver the right product were only technology resources and competencies. Yet, since the Mobile Telecommunications Market is rapidly converging with the Media and Web industries, they had to develop content creation capabilities as well: but the company did not realize this shortage. The Marketing & Sales Manager was negatively struck by the passive attitude of MNOs concerning value added services (VAS) projects. His concerns regarding the low expectations for a market where the leaders were foot-dragging are somewhat motivated: nonetheless, had the management devoted enough time to analyze the market structure and innovation dynamics, it would have found out that market innovation mostly came from outside the operators’ boundaries, springing from peripheral third parties, such as Mobile Content and Service Providers. MNOs were somewhat used to “expect everything on a plate”, greedily seeking for a partner that could provide an easily implementable solution for the problem “how to make money from VAS”. Instead of blaming the market leader for scarce vision, the MTP had to become capable of addressing that issue, developing or acquiring marketing capabilities to craft a whole service around the products offered.

On the financial side, by analyzing the company’s financial statements from the year 2000 to the year 2008, several intriguing lessons can be drawn concerning the improper balance of internal and external financial resources, and its determinants. In its early years, from 2002 to 2006, the company had always maintained a debt/equity ratio oscillating around 1: then, from 2006 to 2008, the management issued new debt and decreased the capital stock by 28.9%. This move led to a very high debt/equity ratio – which passed from 0.91 in 2006 to 3.81 in 2007, and reached the significant value of 5.15 in 2008 –; however, contrarily to the findings of the reviewed literature on financial arbitrage which claimed that adjustments of capital structure had to occur in response to changing conditions and targets (for instance, see Hovakimian et al., 2004; Dudley, 2006; O’Brien et al., 2007; Byoun, 2008), in the analyzed case there was no apparent reason, either internal – e.g. change in the investments portfolio – or external – e.g. radical changes in the financial market conditions – for choosing to increase debt while decreasing equity.
The analysis of debt composition provides further insight on the issue. Before 2008, the company had never borrowed long-term debt: it had not relied on structural debt to finance its investments, as its operations could be managed with a mixture of equity and short-term bank debt – which, by 2005, grew year-by-year at an average 20% rate –. However, in 2008 the management was forced to borrow new capital resources on a long-term basis: since from the balance sheet and the financial statements on the one hand, and from the direct interviews with the managers on the other, there is no apparent justification for this decision, this allows to argue that such long-term debt was borrowed to cover short-term costs. This led to an incorrect matching between assets, period costs and the financial capital that financed their acquisition or sustainment: a long-term capital was used to finance a short-term cash disequilibrium, resulting in an inconsistent matching between resources and assets (Byoun, 2008).

In addition to this, in 2008 the company substantially reduced its short-term bank loans by 30% – in the attempt to diminish its debt exposure –: nevertheless, it contemporarily increased its trade debt by the same absolute value. By doing so, it essentially manipulated its Operating Working Capital in the attempt to unload on to its suppliers a cash shortage determined by the pressure of debt interests.

Such manoeuvres have interesting implications, and tell much about the approach towards capital arbitrage shown by the top management. First, these actions are not problem solvers, as they only delay cash liquidity issues without providing a long-term solution. Moreover, they demonstrated that almost all the financial actions put in practice by the top management are of an accounting rather than of a structural nature, relying either on accounting technicalities or on the mere shift of balancing items; in this case, financial flexibility was confused with a certain level of accounting creativity (Gamba and Triantist, 2008).

In contrast with the body of knowledge on the subject matter (e.g., see Flannery and Rangan, 2006), capital structure choices were not the result of a proper planning of financial balance, target leverage level, asset-capital matching and different debt type selection. Poor effort was put in the selection of an explicit target concerning the degree of leverage between funds and liabilities, and opportunities coming from heterogeneous types of debt (Gaud et al., 2007; Rauh and Sufy, 2008) were largely disregarded, as all debt was ultimately simple bank debt. The lack of an underlying rationale guiding the adequate planning of capital sources arbitrage gave the company a short-period
orientation, which in turn determined a number of mistakes committed and, potentially, the loss of opportunities to achieve a competitive advantage originating from the financial management.

To a great extent, such mistakes derived from the traits characterising the company’s top management: consistently with the strand of the financial literature dealing with the firm-specific managerial determinants of capital arbitrage choices (Hofstede, 1980; Gleason et al., 2000; Bertrand and Schoar, 2003; Hackbarth, 2008; De Jong et al., 2008), it is possible to argue that in the present case study internal resources and competencies endowment heavily affected capital arbitrage decisions and financial choices. As the interviews and the research on the industry allowed to infer, the management team of Information & Communication Technology Providers often possesses strong technological and commercial resources and competencies, while its financial competencies are quite weak. Managers cared more about developing their technology and commercial competencies than nurturing their financial skills – this argument is testified by the fact that the company under scrutiny had never involved in its board any manager or consultant with strong financial expertise –; this “competence bias” and its resulting mistakes in capital structure choices is a further empirical confirmation of the claim that managerial behaviour, beliefs and background affect the financial arbitrage process.

As a whole, the resulting financial structure of the company is quite unstable. Probably, in the medium term, this may detriment the firm value by dramatically increasing the debt interest to be paid and the debt covenants the company is subject to; this condition may also determine that the firm’s relationships with its business customers will be gradually disrupted by concerns over the firm’s long-term viability (Parsons and Titman, 2007), such prediction being especially likely to occur given that business customers of ICT equipments are seldom involved in “one-shot” purchases, but are willing to set up continuative service provisioning relationships with trustful and financially solid vendors.

**Mistake 7 – Missing the link between strategic planning, strategy analysis and business model**

Decisions concerning the approach to adopt at a strategic planning level have tremendous impacts on the undercurrent business model level; though the relationship
between business model and the overarching strategy is still a non-formalized and underdeveloped issue, many studies suggest the importance of matching the business model design process to the current internal and external conditions the firm is facing (Bloodgood, 2007), thus creating and maintaining strategic fit.

The company rather seemed to adopt a piecemeal approach, which developed strategy and business model like stand-alone pieces with few theoretical and almost no operational connections: that was probably the easiest and effort-saving way to drive the market entry, but in the end did not pay off. In a two-years time, the business model had to be reinvented and the origins of such changes cannot be brought back only to exogenous factors, but also to the endogenous strategic approach that drove the initial business model design process. As the managers figured out, the “lame strategy” resulting from this excessive “inward focus” and lacking an adequate external analysis was not suitable for driving the competition in the newly entered market; moreover, it provided weak guidelines to shape the right business concretizing it.

**Mistake 8 – Adopting a full technology-driven approach**

Companies must place greater emphasis on customer orientation when planning strategy and designing business models (Bonn and Christodoulou, 1996), to avoid the risk of misaligning delivered and expected performance. This is achieved through balancing a “market-driven” with a “technology-driven” approach, the former being concerned with crafting an offer explicitly addressing the customers needs, while the latter taking into account the internal technology and product portfolio characteristics to leverage on.

Instead, the interviews allow to infer that the firm analyzed was essentially bringing to a new market the slightly modified version of its traditional products portfolio, thus showing to follow a full “technology-driven” approach, which implies the search for applying an already available technology to a newly entered business, not for the answer to real customers needs – which, in the initial strategy development process, were never actually assessed.

**Mistake 9 – Leaving the business value proposition unstated**

A clear value proposition statement – that is, a declaration of how the company desires to create value for its customers as well as how to capture and internalize a share of that
value— is truly the essence of a business model. This business model development step is comparable to that of objective setting at a strategic planning level, as it ultimately drives the design choices as a whole.

However, the dominant inward look and technology-driven approach adopted by the firm caused this fundamental step to be largely neglected: the management neither had a clear picture of its products’ functionalities the customers were willing to pay for, nor knew exactly how to extract value from its offer, as the convulse propositions related to the revenue model to set up testified.

**Mistake 10 – Shaping the business modelling mix inconsistently**

A business model’s consistency is to be judged at two complementary levels: an external fit relating the business configuration with the overarching strategy that originated it; and an internal fit existing between the interlocking business model dimensions. The overall consistency in what we can label the “business model mix”, that is, the key parameters combination, determines a solid basis for competing and deploying tactical choices.

The longitudinal study on the business model adopted by the company from 2006 to 2008 showed significant changes occurred in the values assumed by business model parameters. After becoming aware of it initial mistakes, the management looked for a repositioning of its offer, which ineluctably had to pass through the reshaping of the initial business model. However, these changes were scarcely systematic and poorly orchestrated, reflecting the absence of a clear strategic intent. Navigating by sight in the business waters, the company tried to appear adaptive and respond to the market’s stimuli; however, having no clear goal but the desperate search for customer and short-term profits to justify its investments, it ended up being carried away by the void of heterogeneous opportunities— for instance, the Mobile portal call for tenders— it could hardly face. This resulted in an awkward business model, poorly mixing an innovative but ill-motivated adaptive stance with and hardcore technological legacy.

**Conclusions**

Strategic planning and business model design are complex, multifaceted processes every company is to deal with sooner or later, like it or not. Much has been said on how
to face them, while relatively little effort was put in discussing what getting them wrong means, and what mistakes at this stage bring about.

The present study aims at proposing a failure analysis perspective on the study of strategic matters. Though this perspective is substantially dual with respect to the traditional one, and should therefore lead to similar results, we believe an integrative view that looks at the subject with a different light, disclosing both conceptual and operational mistakes one can commit in its quest for business success, can be of great use for entrepreneurs.

The study can provide cross contributions to the Strategic Management field.

The deliberate vs. emergent planning debate is resumed, arguing that while both approaches make sense, what matters the most is to explicitly define which of the two best suits the entrepreneurs team’s vocation, and should therefore be adopted.

The essentiality of achieving and maintaining a right balance between external and internal strategy analysis, expressed by the “inward look” and the “outward look” concepts, is also confirmed. The relationship between strategic planning and financial arbitrage is restated, and the negative impact of wrong managerial choices concerning capital structure planning is uncovered. Furthermore, the importance of environmental scanning to identify exogenous factors, rather than to predict their outcome, is strongly reinforced, and the idea that a convulse and uncertain environment can play an “amplification effect” with regard to any planning deficiency is demonstrated.

In addition to this, the longitudinal case study restates a certain value of the “learning by doing” approach (Watts and Cope, 2000; Christensen, 2001) where critical incidents like unsuccessful events result in fundamental learning experiences that lead to changes and improvements in strategy and business models; nonetheless, it claims that the lack of a clear strategic intent can make apparent learning become misguiding.

The case also constitutes a vivid example of how strategic planning and financial arbitrage lessons proposed in existing literature have not come down the “ivory tower”, still far from being interiorized and implemented by many Small-Medium Enterprises. Though preached by academics in the first place, and later by consultants, some practices – SWOT analysis, CSF assessment and so on – failed to penetrate the SME boundaries and to be established in an ongoing manner (O’Regan and Ghobadian, 2007).

Finally, the paper represent a qualitative empirical evidence of the close mutual relationship between the strategy and business model concepts and descending
constructs. Business model is intimately related to strategy, as the latter determines the former’s adequacy and performances. Nevertheless, though representing an interesting real case where mistakes at a strategy definition level reflected upon and determined further errors at a business model design level, the study only suggests and touches upon the matter of the formal and explicit identification of the two levels’ boundaries and existing interdependencies. Given its importance for the development of Strategic Management as body of knowledge and a practice, such issue deserves future research effort.

Many of these issues has been to some extent treated in previous works, quite often as stand-alone topics; still, this paper’s novelty lies in the attempt to systematically bring together and unify strategy and business model conceptual and operational constructs within the same normative framework, through the analysis of a surprisingly meaningful case of a planning failure.

The intriguing side of the “flaws checklist” presented is that, together with its academic significance, it has a straightforward value for managers. This practitioners-oriented agenda with strong literature foundations can serve as a anti-advice manual for entrepreneurs wishing to avoid common strategic pitfalls. For, as Colin S. Gray (1999) argues in his book concerning military strategy in the modern age, such strategic mistakes can have dreadful consequences: “Poor strategy is expensive, bad strategy can be lethal, while when the stakes include survival, very bad strategy is almost always fatal”.

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PART 2

A Value Network perspective study on the Italian Mobile Content Market


2.2 A VALUE NETWORK PERSPECTIVE STUDY ON THE ITALIAN MOBILE CONTENT MARKET

Abstract

The market for mobile digital content is undergoing a process of value system reconfiguration, giving rise to the need of developing original models capable of describing its structure and disclosing the drivers of value creation. The purpose of this paper is to adopt a Value Network perspective to identify the core value creating activities constituting the world-leading Italian Mobile Content market, to analyze how such activities are interrelated and to assess how they can be internalized and combined within a given actor’s domain. At first, a model entangling the market’s key value adding activities will be provided. Consequently, five alternative configurations of feasible Mobile Content Value Networks will be proposed and evaluated with reference to a set of structural and dynamic variables drawn from an extensive literature review. The research relies on the adoption of a multiple case studies methodology: 94 in-depth exploratory case studies on all key players operating in the market were performed. The findings show how varying the set of value adding activities covered by the different actors shapes the network structure and inner dynamics, with significant impacts on the firms’ behaviour and strategic options.

Keywords: value network; strategic network; value reconfiguration; mobile content; case studies

Introduction

Throughout its relatively short but undoubtedly intense history, the Mobile Telecommunications Industry has mostly been a Europe-led market. The European Union and EU-backed associations like the Global System for Mobile communications Association (GSMA) and the European Telecommunications Standards Institute (ETSI) played a key role in planning and orchestrating the industry development on a network standards level, through a multi-step transition from GSM to GPRS, and recently to the current UMTS, that will in turn lead to the development of 4G – the so called Long Term Evolution (LTE) – (Barnes, 2002; Maitland et al., 2002; Sabat, 2002; Li, Whalley, 2002; Ballon, 2004).
At the same time, on a service level, it was mainly the innovation initiative of European Mobile Network Operators (MNOs) or third parties to catalyze the development of a wide and appealing offer of value added, non-voice mobile digital media services – which include handset browsing, mobile social networking, mobile applications, mobile games, mobile music, mobile video, mobile TV, ringtones, wallpapers and infotainment alerts – pertaining to the so-called Mobile Content market segment (Peppard, Rylander, 2006; Kuo, Yu, 2006; Noordman, 2006).

The Mobile Content market relevance in the overall Mobile TLCs landscape is rising dramatically, as analysts expect its global value, only partially hindered by the ongoing recession, will exceed 100 billion $ by 2013, (Informa, 2009; Juniper Research, 2009; Strategy Analytics, 2009, IDATE, 2009).

Within the European Mobile market context, Italy holds an international leadership, thanks to: its world’s highest service penetration and diffusion rates; its positioning at the forefront in industry innovation at a global level; and the strong international presence of its key players (IDATE, 2009; Informa, 2009). The relevance of the Mediterranean peninsula’s Mobile national market is testified by several studies (Confindustria, 2008; MEF, 2009) claiming that Mobile, and specifically the Mobile Content segment, has now gained such cross-country recognition to make it become another symbol of the “made in Italy” ideal, just like what happened for the Fashion or the Food Industry.

As the market grows and its structure evolves, involving larger number of heterogeneous firms – characterised by firm-specific activities performed – and giving rise to complex set of relationships between them, the need of rigorously identifying and consequently analyzing its constitutive value-creating or value-destroying activities has emerged, deserving attention from both researchers and practitioners. In particular, given the complexity of the aforementioned inter-firm links and of the resulting thorough value system structure, the present study claims that the activity analysis process should benefit from the adoption of a Value Network perspective, which extends the traditional Value Chain model through a refocus on inter-organizational, non-sequential and multilayered relationships.

Therefore, the study aims at identifying which are the core activities constituting the Mobile Content market, how they are interrelated, and how they can be internalized and combined by different market players to define and shape their value domain.
Conceptually, this is achieved through applying the Value Network and the Strategic Network theoretical frameworks to the Italian Mobile Content market. Since different activity combinations within a given key actor’s perimeter may arise, five alternative configurations of Mobile Content Value Networks are provided – characterized by different roles of the involved actors, in terms of activities covered – representing the most significant cases that emerged and could be inferred from the information collected through the literature review and the empirical analysis, based on multiple case studies. As a final step of the research, coherently to the perspective taken, the proposed configurations are evaluated with reference to a set of key variables or drivers derived from Value Networks and Strategic Networks theories, in order to delineate and compare their different characteristics.

**Literature review on Value Networks and Strategic Networks**

Since the renown value chain model was introduced by Michael Porter in 1985 (Porter, 1985) the research stream focusing on the analysis of internal activities within firms and external relations between them has been to a great extent “chained to the value chain” (Normann & Ramirez, 1994): in the attempt of individuating and interpreting the performances differentials of firms, the latter were typically studied as stand-alone, atomistic entities.

In the Mobile Content market, the view of value creation as a well defined linear sequence of value adding activities pushed to the adoption of market strategies which aimed at obtaining a vertical control of the chain: the “walled garden” solution for mobile portals can be seen as an example of the application of such approach by Mobile Network Operators’ (Peppard & Rylander, 2006).

However, the applicability of the traditional value chain model has been questioned by several authors (Hakanson & Snehota, 1989; Normann & Ramirez, 1994; Anderson, 1995; Gulati, 1995; Campbell & Wilson, 1996; Tapscott et al., 2000; Stabell & Fjeldstad, 2002; Alle, 2003; Fjeldstad et al., 2004; Schieffer, 2005; Huemer, 2006; Peppard & Rylander, 2006; Pil & Holweg, 2006), as it emphasizes the concept of competition and does not take into fair consideration the more and more complex networks of both horizontal and vertical relations existing among firms.

Now that in many industries – including the Mobile Content market – products and services are virtual and the chain of activities is not any more characterized by a
physical dimension, the key element of a model meant to capture the drivers of value creation cannot be the mere position held by a firm within the value system, but shall be replaced by the concept of “interdependencies” the whole network of relationships is built on (Huemer, 2006). Moreover, those interdependencies are often far from being linear, and can be structured on several levels or layers: the sequence of activities constituting the value creation process is essentially multidirectional – horizontal, vertical, diagonal, retroactive, parallel, simultaneous (Pil & Holweg, 2006).

All the previous types of durable and strategically significant interdependencies are embraced by the so called “value network” model, which extends the value chain model by stressing the concept of network of relationships a firm builds within its boundaries – in terms of transversal processes – and outside its perimeter, and therefore claiming that value is created through inter-organizational streams of activities.

Value Networks and Strategic Networks literature has focused on the identification of variables or drivers capable of supporting a thorough description of a network, both from a “static” point of view – that is, in terms of its structural characteristics –, and from a “dynamic” one, that considers it as an evolving system subject to both endogenous and exogenous forces that determine some changes in time (Eggert et al., 2005). Taking from a wide literature review (Jarrillo, 1988; Hakanson & Snehota, 1989; Burt, 1992; Hinteruber, 1994; Hobday, 1994; Normann & Ramirez, 1994; Anderson, 1995; Anderson et al., 1995; Gulati, 1995; Campbell & Wilson, 1996; Keilt et al., 1997; Parolini, 1999; Gulati et al., 2000; Tapascott et al., 2000; Li & Whalley, 2002; Stabell & Fjeldstad, 2002; Alle, 2003; Antoniou & Ansoff, 2004; Chiesa & Toletti, 2004; Fjeldstad et al., 2004; Eggert et al., 2005; Schieffer, 2005; Hagedoorn et al., 2006; Huemer, 2006; Okamura, 2006; Peppard & Rylander, 2006; Pil & Holweg, 2006; Schoenmakers & Duysters, 2006; Gilsing et al., 2007; Marjolein et al., 2008; Ahuja et al., 2009; Desarbo et al., 2009; Funk, 2009; Gulati et al., 2009; Lin et al., 2009), a set of seven variables to describe a value network were identified. The five key “static” or structural variables are the following:

- **network focal** – referring to the firm positioned in the centre of the network, controlling the original source of value, and linking the “peripheral” firms;

- **critical network influences** – referring to the most significant value creating relations between firms;
- **structural equivalences** – referring to the condition where two or more members hold a similar position within the network;
- **structural holes** – referring to the situation where two or more firms within a network are connected only through the focal firm;
- **revenue streams** – referring to the direct or indirect exchanges of revenues between network members.

Concerning the dynamic variables, the model focuses on entangling the endogenous rather than the exogenous forces – the latter being mainly related to environmental changes, like the convergence of the IT, Telecommunications and Media industries mentioned earlier (Gulati et al., 2000; Wirtz, 2001; Li & Whalley, 2002) –, and considers two main phenomena:
- **lock-in and lock-out effect** – referring to the condition where the establishment of a relation with a given firm sets constraints to the creation of further relations with other firms;
- **learning races** – referring to the case where firms involved in a relation find themselves competing in a race for internalizing the partner’s assets and resources, before leaving the alliance. This is most likely to happen when private benefits acquirable by any of the partners after they have learnt from the other exceed the common benefits of the alliance (Hamel et al., 1989; Wirtz, 2001).

These key variables are employed to describe the Value Network configurations proposed later on.

**Research Methodology**

The present research is based on a wide literature analysis on Strategic Networks and Value Network theories, integrated with the adoption of explorative multiple case studies as a research method (Yin, 2003).

Qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomenon of value network definition within a given industry – i.e. Mobile Content –, and at thus building new theory – or extending existing theories – on it.

At first, the literature review allowed to identify the variables to be employed for building the value network models, and for assessing their characteristics in both static and dynamic terms.
In addition to this, from January to July, 2008, 94 in-depth exploratory case studies on firms operating in the Italian Mobile Content market were performed. Coherently to the research methodology employed (Pettigrew, 1988), firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data analysis. Leveraging on the research carried out by the 2008 Mobile Content Observatory (Bertelè et al., 2008), that has been focusing on the Italian market for Mobile Content since its rise in the early ’00, the theoretical sample covered all the key actor categories belonging to the Italian Mobile Content ecosystem. The main categories the interviewed firms were the following: Mobile Network Operators (4 players); Mobile Service Providers (24 players); Mobile Content Providers – Media Companies, Web Companies; Web Editors – (31 players); Mobile Technology Providers (20 players); Device Manufacturers (6 players); Advertisers (9 players). The sample accounted for 90% of the universe of actors identified as involved in the market under scrutiny, and the analysis of secondary sources on the excluded firms allows to infer that their positioning and perspective was to a great extent similar or totally overlapped to that of other firms included in the sample – this grants the minimal loss of information due to the sampling process –. Whenever possible, for each company the following group of informants were interviewed:

- Chief Executive Officer;
- Chief Information Officer;
- Mobile Content Business Area Manager (this category assumed different denominations in different companies: the most common were Mobile Content Business Area Manager; Value Added Services Manager; Mobile Portal Manager; and Mobile Third Parties Manager);
- Product Managers.

The semi-structured nature of the interviews made it possible to start from the key issues identified through the literature review – such as the network theory’s assessment variables –, but also to let any innovative issue emerge from the open discussion. The identification of core topics the discussion could be brought back to was based on practices borrowed from “Grounded Theory” methodology (Glaser and Strauss, 1967), which helps developing new theory or a fresh insight into old theory: the research “core category” was the “value network configuration”, and the related “conceptual categories” – that is, the market’s core value adding or value destroying activities, and
their coverage from the different actors labelled as network members – were then isolated and described by means of applying the “open coding” technique to the interviews transcriptions.

The interview’s general scheme of analysis was built around four investigation building blocks.

At first, each informant was asked to identify the Mobile Content market’s most significant activities to be carried out from service conception to service delivery. Thanks to this first round of questions, in the subsequent analysis and elaboration phase it was possible to identify the most significant activities performed to generate value within the market under scrutiny, thus shaping a generalized “Mobile Content Value Network” (see Section 3).

Second, informants were asked to describe the role their company currently took on in the Mobile Content market, in terms of key activities covered (with questions like: “How would You describe Your company’s core business?”. “What are the activities Your company performs?”. “Among the activities carried out, where does Your company outperforms competitors, thus grounding its competitive advantage?”). In the analysis and elaboration phase, this collection of information allowed to identify the span of activities typically covered by each and every actor; also, it allowed to spot any strategic misalignment or uncommon positioning within the same actor category considered in the sample, to support a cross-case analysis and feed the Value Network scenario generation step of the study.

Third, informants were asked to provide information on the existing relationships established between their company and other players involved in the market (with questions like: “What activities directly impacting on Your core business do You outsource or are depending on other actors?”. “What resources and assets, either tangible or intangible, do you share/exchange with your business partners?”. “What kind of contractual agreements and revenue generation models do You set up with them?”). Data collected with this round of questions helped understanding the relative positioning of different actors in the whole value system, highlighting the most significant business interrelations and value network interconnections; it also helped identifying any coverage overlapping that could determine competitive attritions between different actor categories.

The last investigation area dealt with the companies’ future strategies and business plans, in terms of objectives, roles, expected market trends, etc. (with questions like:
“What are Your company’s short-medium term, and long term objectives?”. “Where are Your strategies expected to lead Your company?”. “Are You eager to either strengthen or modify Your current strategic positioning and role, and why?”. “Do You perceive any attempt by other actors – either partners or competitors – to modify their positioning as well, and how do You interpret their moves?”. “According to Your perspective, what are the market’s evolutionary trends You expect to consolidate in the near future?”). This last set of questions allowed to integrate the analysis with a dynamic view, while making insightful inference about the most relevant alternative value network scenarios that could rise and disrupt the current value system configuration.

A multiple case study approach reinforced the generalization of results (Meredith, 1998), and allowed to perform a cross analysis on the relevant variables drawn from the literature, to highlight any differential in terms of their combination – to see which variables changed and which remained constant going from one value network configuration model to another –, due to the presence of extreme cases, polar types or niche situations within the theoretical sample (Meredith, 1998). The unit of analysis for each case study was the firm operating in the market.

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), multiple sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

Throughout the research, theory – represented by the literature review and the original model proposed – was used as “part of an iterative process of data collection and analysis” (Eisenhardt, 1989), meaning that it was employed as an initial guide to design the study and the process of data gathering, though it was never intended to constrain emergent issues coming from the qualitative analysis, so as to preserve the suggested considerable degree of openness to the field data (Walsham, 1995; Yin, 2003)

**The Mobile Content value adding activities**
The market for mobile digital content is undergoing a process of value system reconfiguration (Gulati et al., 2000; Li & Whalley, 2002; Stabell & Fjeldstad, 2002; Fjeldstad et al., 2004; Huemer, 2006; Peppard & Rylander, 2006; Funk, 2009).

The overall value network is resulting from the juxtaposition of different major value chains (Wirtz, 2001):

- Mobile Telecommunications;
- Information Technology;
- Media;
- Electronic Commerce.

Such process is made of a first phase of “unbundling”, where each value chain is divided in its elementary activities, followed by a “rebundling” phase, where the activities are recombined to create a new structure. The “value configuration” (Stabell & Fjeldstad, 2002) coming from the combination of different activities shall not only be analyzed in terms of length, but also of depth: value is created through the vertical interaction of parallel and coexisting activities located on distinct levels, in what (Huemer, 2006) defines a “layered architecture” made of overcurrent and undercurrent activities.

In the light of the previously mentioned concepts, the Mobile value system here proposed, related to the process of creation, management & delivery of mobile digital content, is composed by four parallel but interconnected layers:

1. **Content & Service Layer**, covering the activities related to the lifecycle management of mobile digital content and services – Content Creation; Content Packaging; Content Publishing; Content Management; Portal Provisioning; Advertising Bundling; Content Delivery & Market Making; Content Charging; Content Billing & Accounting; Customer Relationship Management –;

2. Device Layer, covering the activities related to the design, manufacturing and delivery of Devices for content & service fruition – Device Design; Device Manufacturing; Device Provisioning;

3. **Platform Layer**, undercurrent to the previous layer, which comprises the activities of designing, producing and operating the middleware platforms for mobile content management and delivery – Platform Design; Platform Manufacturing; Platform Provisioning; Platform Operations; Platform Management;

4. **Network Layer**, encompassing the cross activities related to the installation and operations of the Mobile network infrastructure.
The interconnection between the first two layers becomes evident with the activity of Content Publishing on the middleware platform. The Content & Service Layer can be further divided into an “upstream chain”, encompassing the activities from content creation to its preparation for delivery, and a “downstream chain” considering the stages which follow the content commercialization.

![Diagram of Mobile value adding activities]

**Figure 1. The Mobile value adding activities**

The identified core value adding activities can be performed by several actor typologies belonging to the network: since a different attribution of activities covered can give rise to alternative network configurations with specific strategic implications, the present study proposes five feasible configurations of value networks for the Mobile Content market. Such models are hence analyzed and assessed on the basis of key variables drawn from the existing theories on value networks and strategic networks.

**The Mobile Content value network alternative configuration**
To fulfil the main objective of the study, that is, creating a model capable of portraying the Mobile Content value network, the core value adding activities in the value system of mobile digital content are to be assigned to the key actors belonging to the system itself.

The main actor typologies considered as the market’s key player derive from the integration of the literature review and the empirical data collection analysis, and include the following six broad categories:

1. Mobile Network Operator (MNO) – owns the network and is responsible for the provisioning of its functionalities.
2. Mobile Service Provider (MSP) – is mainly active on the overall management of content and services, taking on an intermediary role between MNOs and MCPs.
3. Mobile Content Provider (MCP) – concentrates on the creation of digital content, service or application. In a broad sense, Media and Web Companies also belong to such categories.
4. Mobile Technology Provider (MTP) – focuses on the provision of the Content & Service Delivery Platforms (CSDPs) to manage and deliver digital content.
5. Device Manufacturer – it manufactures and provides the Mobile devices (e.g. cellular phones, smartphones, PDAs) through which the content, service or application is accessed by the end user.
6. Advertiser – is any kind of firm interested in leveraging on the mobile channel to promote their products/services.

As the different allocation and combination of activities within an actor’s domain can give rise to a different overall value network, the present research proposes five feasible noteworthy configurations, whose characteristics and strategic implications are further investigated through the static and dynamic variables derived from the literature review.

**Full walled garden configuration**

In the “Full walled garden” configuration, the MNO represents the “network focal”, the actor benefiting from a central positioning and a deeper “embedding” within the network structure. In this situation, the MNO takes on a pervasive role, integrating most of the activities pertaining to the Content & Service layer – ranging from content
aggregation to content delivery and market making; it also takes care of the “charging-billing-accounting” (CBA) process, as well as of CRM –, in addition to its natural presidium of the Network layer.

The “network influences” or value ties for the MNO are those built with MCPs to feed the VAS portfolio, and with one or more MTPs providing the CSDP through which delivering a range of value adding functionalities to the end customer – e.g. personalization, interactivity, context awareness, localization etc. –.

In terms of revenue streams – identified in Figure 2 by the arrows connecting the actors’ domains –, the MNO pays out to the CPs either a content-based or a transport-based fee for original content provisioning, and receives from them a fee for the exploitation of its proprietary platform’s functionalities; it also receives a fee from the Advertiser for the services offered. Being the only responsible for content delivery and market making, the MNO retains both the content cost and the transport cost billed to the end customers, and pays a share of it to the MTP, who is in charge of the platform’s operations.

The central position of the MNO creates some “structural holes” among actors not directly tied neither between themselves – e.g. MTPs and MCPs, the DMs and the CPs –, nor to the end customer: this allows the operators to benefit from higher profits (Burt, 1992).

Besides, some structural equivalences can be found, as a single operator can relate with multiple MCPs and Advertisers, that hold a similar role and somehow find themselves competing for the possibility of establishing a strong relationship with the focal firm.

From a dynamic point of view, lock-in and lock out effects can emerge, since the contracts stipulated between the MNO and the MCPs for content provisioning, or between the MNO and the MTPs for platform provisioning, can be exclusive: these “monogamous alliances” shape the network structure, and can include or exclude some players from a given network graph for medium-long periods of time.
Figure 2. Full walled garden configuration

As a whole, this full walled garden configuration is only feasible with regard to elementary services, and does not seem to meet the current needs of the operators themselves, interested in developing the Mobile Content segment through leveraging on third parties propositions, as synthesized in Figure 3.
Figure 3. Full walled garden configuration: static and dynamic assessment

This consideration gives rise to a second possible configuration, where the role of the MSP as an intermediary emerges.

**Intermediated content delivery configuration**

The “Intermediated content delivery” configuration sees the rise of a further actor typology, the MSP, controlling some downstream activities previously performed by the MNO, like content delivery and market making. Acting as intermediaries, the MSPs establish a direct contact with the end user, thus enhancing their role and bargaining power within the network.

The MNO maintains a coverage of the main upstream activities, e.g. content aggregation and management, portal provisioning and so on. It also keeps managing the relations with multiple MCPs and one or more MTPs, adding to this portfolio of alliances the MSPs, from which it receives a consistent share of revenues coming from the value added services commercialization.
The MTPs concentrate within their boundaries the activities belonging to the Platform layer, and can direct their CSDP offer to both the MNO and the MSPs. The latter relation can even result in a “learning race”, where the Service Provider tries to steal technological resources and competencies to internally design and operate the platform. The DMs keep on being related to the MNO and the end users only, though the direct revenue streams they receive from the latter are related to the selling of devices rather than the commercialization of content & service.

The focal actor remains the MNO, but as the network structure becomes less concentrated because of the presence of MSPs, some structural holes characterizing the first configuration are filled – like the one between MSPs and Advertisers, MSPs and MTPs and MSPs and end users.

The main structural equivalences noted are related to the roles of MSPs, CPs and Advertisers – such factor increases the level of competition on the corresponding activities covered –, while the most significant network influences for the operator in terms of value creation are those with the MCPs for widening the content and services portfolio, with the MSPs to leverage on their assets and resources for better serving a larger pool of customers and with MTPs providing best-in-class platform solutions that could influence the content management & delivery performances.

Moreover, even in this configuration the peripheral actors could find themselves locked-in or out of a MNO’s strategic group, with heavy impacts on their profitability and chances of success or survival.
In synthesis, this configuration is related to the large majority of on portal content & services (e.g. infotainment): the MNO externalizes the downstream activities of content market making to the MSP, through a model implying higher openness towards peripheral actors, which paves the way to a third parties-driven development of Mobile Content.
**Static or structural assessment**

- **Network Focal**
  - MNO

- **Critical Network Influences**
  - MNO - MTP
  - MNO - MCP
  - MNO - MSP
  - MNO - MSP

- **Structural Equivalences**
  - MCP; MSP; Advertisers

- **Structural Holes**
  - MTP - MCP; MTP - MSP; MTP - Advertisers
  - MCP - End User
  - DM - MCP; DM - MTP; DM - End User (for Content Offering)

- **Revenue streams**
  - Direct for MNO, MSP, DM (for Device Offering)
  - Indirect for MCP, MTP,

**Dynamic assessment**

- **Lock-in and Lock-out effects**
  - Relations between:
    - MTP - MNO
    - MCP - MNO
    - MSP - MNO
    - DM - MNO

- **Learning races**
  - Between MSP - MTP for technological competencies

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**Figure 5. Intermediated content delivery configuration: static and dynamic assessment**

**Full open garden” configuration**

The “Full open garden” configuration represent a possible development and degeneration of the second alternative, where the Service Provider replaces the operator as the network focal, substantially relegating the latter to the role of carrier and network manager.

The MSP extends its control to key upstream activities, directly relating to MCPs, MTPs and Advertisers, as well as to the MNO; in the downstream section of the Content & Service layer, the MSP strengthens the ties bonding it to the end customers.

Concerning revenue streams, the MSP pays a fee to the MCPs for the exploitation of their content and pays a CSDP fee to the MTPs; it receives direct revenues from the Advertisers – for the enablement of their campaigns on the Mobile channel – and from the end users. A consistent part of these revenues from content commercialization is redirected to the MNO, for the provisioning of the network infrastructure, of the CBA system, of the mobile portal and of the customer-related information. In fact, in a situation where the MNO holds a secondary role within the network, it should leverage
on its core assets like the infrastructure and the 3G licenses, the billing and accounting systems and the control over customers’ information and usage data (Kuo & Yu, 2006). The structurally equivalent firms are now the competing MSPs, MCPs, DMs and MTPs. The main structural holes become those separating the MNO from MCPs and Advertisers, while the key network influence for the MSP is the relation with the operator, that ensures the possibility of reaching the end customers.

In terms of network dynamics, peripheral firms could be locked-in or locked-out of the strategic groups originated by the network’s core dyads MNO-MSP. Learning races can also arise between MSPs and MCPs, where the former try to acquire core competencies related to content creation to become capable of internally developing a white label offer, or between MSPs and MTPs, where Service Providers could be interested in stealing the know how necessary to design and operate a middleware platform to exploit it for their exclusive benefit, and afterwards breaking the alliance.

Figure 6. Full open garden configuration
The configuration here modelled is surely characterized by a disruptive nature, as it takes to the extremes the trend of openness towards third parties, reshaping the network structure to a point where the substitution of the MNO as focal firm occurs.

Static or structural assessment

- **Network Focal**
  - MSP
- **Critical Network Influences**
  - MSP - MNO;
  - MSP - MTP;
  - MSP - MCP
- **Structural Equivalences**
  - MCP; MTP; Advertisers
- **Structural Holes**
  - MNO - CP; MNO - Advertiser
  - MTP - CP; MTP - Advertiser.
  - DM - MCP; DM - MTP; DM - End User (for Content Offering)
- **Revenue streams**
  - Direct for MSP, DM (for Device Offering)
  - Indirect for MNO, MCP, MTP.

Dynamic assessment

- **Lock-In and Lock-out effects**
  - Relations between:
    - MSP - MNO
    - MSP - MTP
    - DM - MNO
- **Learning races**
  - MSP - MTP for technological competencies
  - MSP - CP for content creation.

**Figure 7. Full open garden configuration: static and dynamic assessment**

**Technology & Service Provider configuration**

The “Technology & Service Provider” configuration is alternative to the previous one, since it sees the rise of the MTP as the leading actor of the network; the MSP is no longer present, as its activities are taken on by the technology vendor. The configuration can be labelled as disruptive because it reduces the MNO’s control over the value system, and extends the MTP’s coverage to activities not entangled by its traditional core business – that is, the activities belonging to the Platform layer.

Being the network focal, the MTP directly relates with MCPs, Advertisers and end user, as well as to the MNO for exploiting its network infrastructure functionalities. The MTP benefits from direct revenue streams coming from the end customer, and partly redirects those streams to the MNO as a payoff for the transport, CBA and user management.
services. For all these reasons, it is evident that the actor incorporates the activities performed by the MSP, becoming a “Technology & Service Provider”.

Within the network originating from the rise of this actor, competitive attrition manifest itself among the different graphs centred on the dyads MTP-MNO, to which the peripheral firms are connected: the “relational space” thus created influences the firms’ performances and behaviour.

As it happened in Configuration 3, the network’s structural gaps are those separating the MNO from the peripheral firms – i.e. Advertisers and MCPs –. The critical network influence is the relationship between the MTP and the MNO, essential for the actual deployment of the rich media content and services to the end user.

The shared ownership of end customers between the MTP and the MNO could even result in a learning race for the internalization of data and information regarding the user profiles and the usage reports.

As a conclusion, in the final configuration the reach of the MTP is extended to an overall management of both the mobile digital content and the underlying platforms, thus creating competitive dynamics between the MTP and the MSP, that could result in the disappearance of the latter actor from the value ecosystem. However, the indications

![Figure 8. Technology & Service Provider configuration](image-url)
coming from the case studies allow to judge such configuration as the least likely to manifest on a large scale, since the existing network sections where the MTP is the “deepest embedded firm” are mostly resulting from market anomalies – e.g. contingent opportunities or long-lasting partnerships the technology vendors have exploited to profit in the short-medium term, rather than from a clear strategic long-term planning. The following figure synthesizes the static and dynamic characteristics of the proposed configuration.

**Figure 9. Technology & Service Provider configuration: static and dynamic assessment**

### Device Manufacturer-driven configuration

The “Device Manufacturer-driven” configuration is quite a recent alternative related to the recent and emerging “application store” phenomenon (e.g. Apple Store, Vodafone 360°), where the DM leverages on the Mobile device to challenge the incumbent’s leadership, bypassing its portal and CBA system.

Within such disruptive alternative, the DM take on a network focal role of content & service management, while the MNO withdraw from direct content management to some customer-related activities, whose value is however competed away by the presence of DM-owned alternatives (e.g. CBA provisioning vs. direct billing; Portal Provisioning vs. Store Provisioning).
From a structural perspective, the configuration’s critical network influences are those among the DM and MNOs, MCPs and MTPs (as the MSP is no longer present in the value network, being replaced by the DM itself); the emerging structural equivalences are related to the roles of MCP, MSP and Advertisers; the structural holes emerge among MNOs, MCPs and Advertisers; and the revenue streams are of a direct nature for DMs (Device Offering and Content Offering), while of an indirect one for MNOs, MTPs and MCPs.

From a dynamic view, lock-in and lock-out effects could be generated in the relationships between DMs and MNOs, MCPs and MTPs; also, learning races could rise as DMs and MNOs compete for customer relationship management, or DMs and MTPs compete for technological competencies.
Static or structural assessment

- Network Focal
  - DM
- Critical Network Influences
  - DM - MNO
  - DM - MCP
  - DM - MTP
- Structural Equivalences
  - MCP; MTP; Advertisers
- Structural Holes
  - MNO - MCP; MNO - Advertiser
- Revenue streams
  - Direct for DM (for Device Offering AND Content Offering)
  - Indirect for MNO, MTP

Dynamic assessment

- Lock-in and Lock-out effects
  Relations between:
  - DM - MNO
  - DM - MCP
  - DM - MTP
- Learning races
  - DM - MNO for customer relationship management
  - DM - MTP for technological competencies

Figure 11. Device Manufacturer-driven configuration: static and dynamic assessment

Conclusions and future works

The fast-evolving Mobile Content market results from the juxtaposition of several value chains: therefore, its value analysis requires the development of original models extending the existing literature.

The present research focused on the identification of the market’s key value adding activities, and on the further attribution of such activities to the incumbent players’ domains: five alternative value network configurations where hence proposed. The configurations were derived from a combination of a wide literature review and the case studies performed: though hybrid, in-between solution are still plausible, the presented alternatives were selected as the most significant and most likely to arise in network subparts or graphs.

The findings show how varying the set of value adding activities covered by the different actors shapes the network structure and inner dynamics, with significant impacts on the firms’ behaviour and strategic options at hand. Specifically, while the
first two configurations are characterized by a more “conservative” approach, being dominated by the MNO, the third, fourth and fifth alternatives represent a disruptive evolution of the current trend of growing openness towards third parties, even resulting in the substitution of the operator as the network focal.

The paper’s value for researchers can be brought back to the application of the Value Networks and Strategic Networks theories to a further context, where such theories’ core variables are found extremely useful to describe and assess the market’s feasible configurations, at both a static and a dynamic level.

Moreover, the study emphasizes the relevance of a Italian national market in a highly ICT and innovation-intense industry, thus contributing in turning the academics attention to the sometimes underrepresented European and Mediterranean region.

Value for practitioners lies in the creation of a reference model capable of providing a unified definition of the value adding activities the market is structured in, while depicting a set of noteworthy network configurations and underpinning the market’s main structural and dynamic characteristics, as well as their strategic implications.

The study represent a significant contribution to the development of Value Network theory, with specific reference to the Mobile Content market. Nevertheless, it mainly focuses on the limited, though relevant – especially in the European and Mediterranean landscape – Italian national market. Future research will have to address the issue of the generalization of results, through applying the same constructs of analysis to different markets and company samples.

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2.3 MOBILE CONTENT & SERVICE DELIVERY PLATFORMS: A QUALITATIVE TECHNOLOGY CLASSIFICATION MODEL

ABSTRACT

The growing complexity of mobile “rich media” digital content and services requires the integration of next generation middleware platform within Mobile Network.
Operators and Service Providers infrastructural architecture, for supporting the overall process of content creation, management and delivery. The purpose of the research is to design a technology classification model for Mobile Content & Services Delivery Platforms – MCSDPs –, the core of Mobile Middleware Technology Providers – MMTPs – value proposition. A three-steps theoretical framework – well grounded on existing literature and gathering information through adopting the multiple case studies research methodology – is provided, which identifies a functional architecture as well as a set of significant classification variables to support the platforms positioning analysis. Afterwards, the model is applied to map the current MCSDP offer presented by a sample of 40 companies, classified as MMTPs, so to test the framework validity and get a valuable insight on the actual “state of the art” for such solutions. The main findings show that existing platforms possess major strengths – e.g. wide content portfolio manageable, integration between mobile and web channels and frequent recourse to SOA and Web Service approach –, while some drawbacks – poor support to context aware and location-based services, verticality and low interoperability of some proprietary products, criticality of content adaptation etc. – are still limiting the solutions effectiveness.

Key Words: Mobile Communications, Mobile Content & Service Delivery Platform, Technology classification model, Multiple case studies, Quality Function Deployment

Introduction

In a recent past of the Mobile Content market, when content and services offered by Mobile Network Operators (MNOs) and the first Mobile Content & Service Providers (MCSPs) were quite simple – e.g. Short Message Services, monophonic ringtones etc. –, the administration activities were carried out through ad hoc “legacy” systems; delivery and billing of services were managed through operators’ SMSCs (Short Message Service Centres). The need of integrated platforms for managing the value added services portfolio was not strongly felt about (ABI, 2006[a], 2006 [b]). However, the growing complexity and cost of mobile “rich media” digital content, the rise of the off-portal environment, the problems of compatibility with different device models and the necessity of handling articulated billing models forced the MNOs to further develop their legacy systems, thus enhancing their functionalities. Nevertheless, such in-house developed “first generation” Service Delivery Platform proved
themselves unable to face the emerging market needs, since they were characterized by a limited number of content formats enabled, few functionalities, a poor management of demand peaks, interoperability with few mobile devices models, low support to application developers and content aggregators and a “vertical silos” approach for each content or service delivered (Karlich et al., 2004; Pavlovsky, Staes-Polet, 2005; Forrester, 2007).

Today, Mobile Content market has evolved to a degree of complexity requiring the introduction of “second generation” platforms. These solution, offered by Mobile Middleware Technology Providers (MMTPs), are here named “Mobile Content and Service Delivery Platforms” (MCSDPs), and can be defined as middleware platforms combining a wide set of functionalities – consistently aggregated into different modules –, and equipped with network-side and device-side interfaces, thus creating an integrated suite with the purpose of supporting some or each phase of the mobile digital content creation, management & delivery process. Unlike the previous solutions, next generation platforms possess the following characteristics: scalability and flexibility; adoption of open standard and of “best of breed” components; support to multiple relationships with developers and Content Providers (CP); capability of handling a large portfolio of content and services demanded by a wide range of mobile devices; common and reusable interfaces with Business Support Systems and Operation Support Systems (Ericsson, 2006; Forrester, 2007; IRC, 2007; iSuppli, 2007).

The introduction of a MCSDP within operators and service providers’ IT architecture allows to obtain a wide set of benefits, as argued by a vast literature (Sabat, 2002; HP, 2005; Pavlovsky, Staes-Polet, 2005; Brynjolfsson et al., 2006; Ericsson, 2006; Kuo, Yu, 2006; Nordmann, 2006; Peppard, Rylander, 2006; Sur et al., 2006; Forrester, 2007).

Concerning the creation, management and delivery of content and services, second generation platforms grant higher efficiency, higher control on the service lifecycle, lower development costs and shorter time to market; moreover, MCSDP adoption enables the widening of service portfolio, thus leveraging on the “long tail theory” (Anderson, 2004), and making possible to exploit scale and scope economies.

With regard to the operators and service providers technology infrastructure, MCSDP grant some major advantages: the unification of service creation, execution and management environments; the integration of multiple delivery channels; a simplification of interfacing with third parties; an higher architectural flexibility and
scalability; an increased interoperability with legacy systems; and an overall reduction of technological complexity.

Anyway, to grasp the previous benefits, MCSDPs shall be designed according to specific technical concepts and approaches, and shall possess certain key characteristics, that will be later discussed.

Taking from a vast literature review, and from a set of qualitative and quantitative information drawn through a sample of case studies, the purpose of this paper is to develop a reference model for classifying Mobile Content & Service Delivery Platforms, through the identification of a set of significant technology dimensions or classification variables. The model will have both a descriptive and a normative aim: firstly, it will serve to analyze and describe the MCSDP offer “state-of-the-art”; secondly, it will support the decision making process of platform providers – to drive their choices in terms of platform design and technology elements endowment – and platform customers or external stakeholders – to guide the process of selecting the most suitable product according to their needs –.

Afterwards, the model will be applied to map the current MCSDP offer represented by a sample of 40 companies, classified as MMTP, so to propose a first test to the framework’s validity and get a valuable insight on the actual state of the art for the analyzed solutions.

**Methodology**

The development of the original MCSDP qualitative technology classification model followed three main steps.
At first, taking from a wide literature analysis on the one hand, and from a set of 40 case studies on the other, a thorough MCSDP Functional Architecture was created. Such original architecture will allow to describe the platform’s structure in terms of its endowment of functionalities and capabilities, as well as to understand how these functionalities are organized and aggregated into modules.

The second step will employ the functional architecture model to assess the platform’s main purposes and objectives, determined by the different combinations of functionalities covered by the platform itself: such approach will lead to the identification of a set of Platform Categories – deducted by the range of functionalities possessed –, which will strongly affect the platform’s typology of use.

The third and last step is designed to pair and integrate the previous phases – mainly technology-focused – through the identification of a further set of noteworthy technology dimensions – to be later used as technology classification variables –, complementary and related to the platform functionalities, but directly influencing the platform’s performances in terms of benefits achievable by the players introducing the MCSDP within their IT infrastructure.

This fundamental stage addresses the core issue related to linking technology aspects or “Engineering Characteristics” (ECs) to customer desires or “Customer Attributes” (CAs), expressed by the achievable benefits, thus enhancing the model’s normative significance by entangling the “voice of the customer” among the dimensions considered, so to guide the Platform Providers towards ensuring customer satisfaction and the consequent product’s success on the market.

To integrate this critical stage within the overall classification model, while granting a rigorous approach, the study relies on a technique well grounded in both literature and business practices: the “Quality Function Deployment” (QFD) methodology.

First introduced in Japan in the late 1960s and rapidly adopted in many US industries from the early 1980s (Chan and Wu, 2002), QFD can be defined as “an overall concept that provides a means of translating customer requirements into the appropriate technical requirements for each stage of product development and production (i.e., marketing strategies, planning, product design and engineering, prototype evaluation, production process development, production, sales)” (Sullivan, 1986). Therefore, QFD
and the tools it proposes help establishing a clear relationship between marketwise and technology-wise elements.

The use of QFD for the Telecommunications, Electronics and Software Industries is diffused in literature (Haavind, 1989; Wasserman et al., 1989; Brown, 1991; Chang and Lin, 1991; Sharkey, 1991; Bosserman, 1992; Eriksson and McFadden, 1993; LaSalata, 1994; Nolle, 1993; Adiano and Roth, 1994; Brown and Harrington, 1994; Philips et al., 1994; Williams, 1994; Sarkis and Liles, 1995; Groenveld, 1997; Kim et al., 1997; Cohen, 1988; Eyob, 1998; Han et al., 1998; Tan et al., 1998; Rosas-Vegaand Vokurka, 2000). In the present study, QFD will be employed in the third step of the overall classification model to cross CAs to ECs through the use of a traditional and widely accepted tool: the “House of Quality” (Hauser, Clausing, 1988).

To identify the Customer Attributes representing the expected benefits, a wide literature review was carried out; such review was then integrated with the information gathered through a set of 102 one-to-one, qualitative interviews to platforms’ business customers or prospects, performed in a 4 months period (January - April, 2008). The companies sample was made of firms operating in the Mobile Content market or in neighboring areas, which already owned or were potentially interested in purchasing a MCSDP. The sample covered all the key actor categories whose business can require the adoption of a MCSDP. The main categories the interviewed firms belong to are the following: Mobile Network Operators; Mobile Service Providers; Mobile Content Providers; Media Companies; Web Companies; Web Editors; Device Manufacturers; Software Developers. The sample’s completeness and width, as well as the rigor of the process of CAs collection, which relied on a combination of literature analysis and qualitative interviews, grant the significance of the obtained results, dropping the risk of missing relevant attributes.

Though QFD often deals with attributes proposed by end customers, selecting business customers to declare their expected CAs is consistent with previous studies on the subject, since the concept of customer is to be referred to the actor typology who would benefit from the use of the proposed product (Haag et al., 1995), or hold some requirement or need concerning it (Hauser, Clausing, 1988).

One-to-one interviews were preferred to focus group as some evidence in literature (Griffin, Hauser, 1993) show the absence of group synergies expected from focus groups, while their “design cost” is significantly higher. The literature review served as a way to preliminary identify the main expected benefits, but the semi-structure nature
of the qualitative interviews allowed the informants to propose their own CAs, thus avoiding to constrain the answers and letting original elements emerge (Yin, 2003). The obtained CAs were then hierarchically ordered into Primary and Secondary attributes: the Primary level accounted for the macro-benefit expected, while the Secondary level expressed a more detailed version of the primary needs, closer to the customers’ own words used to describe them.

To collect both qualitative and quantitative information concerning MMTPs’ products, solutions and overall value proposition, meant to feed the first two steps of the model as well as the to support deducting the Engineering Characteristics or technology classification variables that are likely to affect one or more customer need in the third step, the multiple case studies research methodology was employed (Yin, 2003): from January to July, 2008, 40 in-depth case studies – based on 96 both face-to-face and phone semi-structured interviews – on Mobile Middleware Technology Providers were performed, focusing on the set of variables and dimensions identified through the literature analysis. Coherently to the research methodology employed (Pettigrew, 1988), firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data analysis. The main predetermined filters used to discriminate among firms were: the presence of a well-defined line of business – if not the core business – dedicated to the commercialization of Content and Service Delivery Platforms or MCSDP modules; and the presence of an offer directed to the Mobile Telecommunications market. The MMTPs sample can be further divided in International and Local companies, where the former are characterized by a strong cross-country presence, while the latter are prevalently operating in and generating a significant portion of their incomes from a local context (the Italian Mobile Telecommunications market).

The following table provides the full list of the analyzed companies.

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<th>Sample of MMTPs</th>
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A multiple case study approach reinforced the generalizability of results (Meredith, 1998), and allowed to perform a cross analysis on platform characteristics and their combinations – to see which variables changed and which remained constant –, due to the presence of extreme cases, polar types or niche situations within the theoretical sample (Meredith, 1998). 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), multiple sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings –. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

As a conclusion, since the technology classification model is developed with the purpose of supporting the classification of MCSDPs offered by MMTPs, an application of the model to the sample of 40 companies analyzed will be hence provided: the platforms will be classified in terms of the functionalities covered and the platform purpose, expressed by the platform category – step 1 and step 2 of the model –, as well as according to the choices made by the platform developers in terms of the further layer of ECs or technology classification variables impacting on the MCSDP performances directly perceived by their users.

**The MCSDP qualitative technology classification model**

**The MCSDP functional architecture**
The integrated assessment of the 40 case studies performed and an academic literature focusing on middleware platforms (Pahlavan, Levesque, 1995; Gaedke et al., 1998; Ma et al., 2000; Houssos et al., 2000; Kotsopoulos et al., 2001; Metso et al., 2002; Fouial et al., 2002; Chen et al., 2002; Zahariadis et al., 2002; Leavitt, 2003; Li et al., 2003; Moerdijk, Klostermann, 2003; Pailer et al., 2003; Lozinski, 2003; Benali et al., 2004; Karlich et al., 2004; Aioffi et al., 2004; Laakko, Hiltunen, 2005; Capp, Farley, 2005; Barsook, Freedman, 2005; Pavlovsky, Staes-Polet, 2005; Ballon, Van Bossuyt, 2006; Sur et al., 2006; Zhang, 2007; Karlich, 2007), of technical documents elaborated by MMTPs (HP, 2005; Ericsson, 2006; Alcatel, 2006) and of market research reports (ABI, 2006[a]; ABI, 2006[b]; iSuppli, 2007) made possible to build an architectural reference model for a MCSDP.

Such model identifies 7 modules, in turn entangling 48 functionalities or sub-modules, which grant the platform efficiency. In addition, 3 cross-module macro-functions are presented.

The 7 modules and the 48 architectural functionalities can be described as follows. The “Network adaptation” module handles the different activation channels and the main interfaces to different access networks. It is composed by 6 elements.

- **SMS Gateway.** Gateway to support the distribution of services based on Short Message Service (SMS) delivery technology.
- **MMS Gateway.** Gateway to support the distribution of services based on Multimedia Message Service (MMS) delivery technology.
- **WAP Gateway.** Gateway to support the distribution of services based Wireless Application Protocol (WAP).
- **HTTP Proxy.** Proxy to link the platform to IP networks based on hypertext languages.
- **Push Proxy Gateway.** Gateway to support the delivery of push services.
- **Streaming Proxy.** Gateway to support the delivery of streaming services.
The “Subscriber management” module supports the process of managing the customer base, containing information on preferences and device potentialities – representing the key inputs of content adaptation activities –. It is further divided into 5 components.

- **Authentication and Access Control.** Functionality enabling the user authentication and access control to the services published. It differs from the Access Management functionality found in the “Third Party Management” module as it is introduced to govern end user accesses to the platform.

- **Subscriber Database.** Archive where all generic information on the end user pool is stocke.

- **Personalization Profile.** User profiles, where information and data pertaining to expressed or unexpressed – that is, automatically collected – user preferences and usage data are contained.

- **Device Profile.** Device profiles, describing and collecting capabilities and characteristics of different end user device models, in order to orient the Content Adaptation phase.

- **Overt the air (OTA) Device Configuration.** Functionality enabling the remote configuration of end user devices, allowing the download of applications and updates.
The “Content adaptation” module performs the functionalities of content/services adaptation according to user profiles, device profiles and network capabilities. Content adaptation is widely recognized in literature as one of the key macro-functionalities performed by a MCSDP, so to allow the adaptive content delivery for heterogeneous networks, platforms and devices (Gaedke et al., 1998; Ma et al., 2000; Foiual et al., 2002, Chen et al., 2002; Metso et al., 2002; Laakko, Hiltunen, 2005; Zhang, 2007). The module is made of 7 functionalities or sub-modules.

- Adaptation Engine. Engine meant to perform the activity of selecting the proper adaptation algorithm on the basis of the content characteristics and of the device/user profiles, through the application of a set of pre-determined rules and criterion.
- Information Abstraction. Functionality performing the process of content abstraction and compression, whose goal is to reduce the content requirements in terms of scarce resources – e.g. bandwidth – through a data compression, though preserving the most valuable information for the end user.
- Modality Transform. Functionality performing the process of transforming the content media type – e.g. text-to-speech, video-to-image etc. – in order to enable its processing by a given receiver device.
- Data Transcoding. Functionality performing the process of converting data formats according to the receiver device capabilities, to allow a satisfactory content fruition notwithstanding the software or hardware device limitations.
- Data Prioritization. Functionality performing the process of attributing different delivery priorities to different parts of the service, privileging the most relevant information and delaying or deleting the least significant ones.
- Purpose Classification. Functionality aimed at enabling the process of classifying the various elements composing the whole service in terms of their purpose – e.g. advertising banners, links, logos, images etc. –, and consequently eliminating the redundant or useless elements so to increase the service delivery efficiency.
- Discovery Portal – Discovery Client. Functionality meant to identify the capabilities characterizing: the client installed on the user device; or the capabilities of the Portal the content is to be published on.

The “Content management” module is dedicated to the end to end handling of digital content published on the platform. It is further divided into 6 functionalities.

- Content Storage/Archival. Sub-module for content storage.
Metadata Management. Functionality for managing metadata, i.e. information detailing the content published on the platform in terms of content typology, content format, size etc.

Content Publishing. Functionality for enabling the content provisioning on the platform.

Content Download Server. Server for uploading and downloading the content, thus supporting Content Publishing.

Content Aggregation Tools. Tools supporting the content aggregation and bundling activities, so to create an integrated service.

Content Filtering. Functionality of content control, meant to restrict their accessibility and modification by the platform users.

Content Retirement. Functionality for retiring and or deleting obsolete or no longer available content. The content obsolescence can be due several reasons, e.g. its dependence from specific marketing campaigns, or the introduction of updated and substitutive versions; while the unavailability can be related to the expiry of a commercial relation with the Content Provider, which leads to the retirement of its digital products.

DRM/IPR Management. Sub-module for managing Digital Rights Management and Intellectual Property Rights policies; it allows to control the distribution and duplication of digital products protected by royalties or intellectual property.

The “Service management” module deals with the management of value added services – comprising a combination of digital content and/or other applications – offered. It is further composed by 8 functionalities.

Service Provisioning. Sub-module for supporting VAS provisioning to the end user, through the link to the “Content delivery layer” later described.

Service Creation Tools. Tools for integrating digital content and software applications in a service to sell to the end customer.

Service Testing. Functionalities for service testing, which come before the selling phase. Together with the tools supporting the creation of content and services on the one hand, and the launch workflow management on the other, this component has a positive impact on the fast introduction of innovative services, and consequently on their Time to Market (T2M).

Launch Workflow Management. Sub-module for managing the workflow related to the launch of new value added services.
- Alert Engine. Engine for enabling the delivery of relevant messages and alerts to the services’ subscribers.
- Advertising Management. According to the platform’s aim and potential, such sub-module is either able to bundle advertising messages externally produced by third parties to the services delivered, or to support the process of advertising content creation and integration as a whole. In the latter case, the platform owner also takes on the role of Mobile Advertising Service Provider (MASP), and handles the advertising creation system (Komulainen et al., 2004).
- Interactivity Management. Functionality for enabling and managing the interaction between the platform and the end user, it handles the two-way channels and grants the possibility for the end user to upload and publish “user-generated content” on the platform itself; these content can be either final products and therefore be published as such, or they can be enriched by other digital content coming from different sources, thus becoming part of a more complex service bundle.
- QoS Management. Sub-module for managing Quality of Service (QoS) and Quality of Experience (QoE) delivered to the end user. It interacts with SLAs contained in the “Settlement” sub-module, as well as with the user profiles memorized on the “Subscriber Management” module, so to grant the full respect of contractual terms, and of the preferences expressed – implicitly or explicitly – by the end customer. QoS is to be considered a noteworthy differentiation element for MCSDP owners, since ensuring a high QoS in dynamics and heterogeneous environments is far from being an easy task, as it requires the coordination of multiple aspects, such as network resources, content and services and user profiles (Koutsopoulou, 2001; Karlich et al., 2004). These considerations enhance the importance of QoS Management sub-module within the MCSDP architecture.

The “Business management” module encompasses the functionalities related to managing the activities of mobile digital content & services business as a whole. This is made of 5 functionalities:
- Charging Data Generation. Sub-module for processing the information related to service selling transactions and to the subsequent generation of charging reports; such reports are then dispatched towards the Mobile Network Operators’ billing systems, to determine the actual payment of the content or service bought by the end customer.
- **Usage Data Retrieval & Analysis.** Functionality of retrieval and analysis of content or service usage data. It produces the main input for Business Reporting, and proves itself extremely useful as a feedback to design the service offer.

- **Business Reporting.** Sub-module for managing business reporting to support the decisional process.

- **VAS Portfolio Management.** Sub-module for managing the overall portfolio of value added service created and delivered through the platform.

- **Campaign Management.** Sub-module for managing and monitoring content and services distribution campaigns.

- **CRM/Loyalty Management.** Sub-module providing capabilities for managing the relationship with the customer; it is based on and backed by the legacy Customer Relationship Management (CRM) system.

- **Subscription Management.** Sub-module for managing subscriptions to content or services.

The “**Third party management**” module supports the relationships with third parties – MNOs, MCSPs and CPs – cooperating with the platform owner. This is further divided in:

- **OSA/Parlay API.** Set of application interfaces allowing the connection to third parties (Content Providers and developers) systems.

- **Access Management.** Functionality supporting the platform authentication and access management from business partners in a safe and reliable way.

- **Capability Broker.** Sub-module for the intermediation and sharing of a set of platform functionalities with partners, according to the level of trust and the intensity of the business interaction.

- **Self Provisioning.** Functionality to allow partners to deliver themselves content and services created or published on the platform, to be used in other contexts.

- **Content Creation Tools.** Set of tools to support the content creation activity.

- **Throttling and Policy Management.** Sub-module meant to handle the allocation of the platform resources and associated capabilities – bandwidth etc. – to partners, as well as the policies and rules regulating the relationships established with third parties.

- **Settlement.** Sub-module related to all the contractual terms and rules with direct impact on content and service creation and distribution, such as the Service Level Agreements (SLAs) and the Service Quality Cards.
The 3 cross-module functions enable the creation of an integrated and common environment.

1. “Service orchestration console”, leveraging on the concepts of Service Oriented Architecture (SOA), Web Services and IP Multimedia Subsystem (IMS), allows to enhance the efficiency and effectiveness of service management, through the reuse of service components and applications etc.

2. “Platform management & capabilities connectors” handles the processes of service creation, execution and management, and coordinates the interconnections between the different modules, thus working as an integration layer of the platform’s core functionalities.

3. “Operations & maintenance” supports the platform efficiency and maintenance.

The MCSDPs are not operating as separate, monolithic entities, but are obviously part of an overall system. On their Third Party Management side, the platforms interfaces itself to Content Providers and to the wide community of mobile digital content developers; on the Network Adaptation side, the platform relates to the external fixed, mobile and IP network environment, to deliver the content or service to the end customer’s device. Moreover, the MCSDP is based on its owner’s legacy infrastructure, and interacts with the following key elements.

- Billing and Accounting Systems: they receive the charging reports generated by the platform, and in turn execute the Billing – invoicing and enablement of the actual payment of the digital good purchased by the end customer – and Accounting – division of the revenues generated from selling the digital goods among all the involved players, according to the revenue sharing models in place – activities.

- Customer Relationship Management Systems: they specifically support the integrated management of each and every customer-related activity.

- Enterprise Resource Planning Systems: they support the overall business management.

- Data Base and Data Warehouse: they store transactional or multidimensional information businesswise information.

Within the overall technology classification model, the above described functional architecture will serve as a first tool for providing a MCSDP classification in terms of modules and functionalities covered by the existing platforms: different combinations of functionalities endowments will give rise to a list of different platform categories.
**The MCSDP categories**

Within the overall technology classification model, the above described functional architecture will serve as a first tool for providing a MCSDP classification in terms of modules and functionalities covered by the existing platforms: different combinations of functionalities endowments will give rise to a list of different platform categories. As stated earlier, the second step of the MCSDP technology classification model seeks to employ the MCSDP functional architecture to discriminate between the platforms offered by the MMTPs under scrutiny in terms of their main purposes, starting from the assumption that such purposes can be inferred from an evaluation of the modules and functionalities covered – which, in fact, enable the execution of the platforms tasks –. According to the key functionalities offered, it was possible to identify 5 distinct MCSDP categories, characterized by different purposes.

1. **Content Creation platforms.** These MCSDPs’ main functionalities are prevalently related to the activities of concept, development and production of the digital content or service. They offer tools for service creation, workflow management, service testing, as well as for aggregation of internally produced and third parties uploaded content.

2. **Content Management platforms.** Such platforms mainly cover the activities spanning from content publishing to content delivery, offering several functionalities: content storage, publishing, aggregation, filtering, retirement; metadata management; digital rights and intellectual propriety rights management; content adaptation; authentication and access control; user & device profiles management; over-the-air configuration; third parties relationship management.

3. **Business Management platforms.** The platforms are meant to handle digital content in a wider business perspective, ensuring the integration between the specific VAS business and legacy systems – e.g. BSS/OSS, database and data warehouse, Customer Relationship Management, Enterprise Resource Planning, billing & accounting system. The key functionalities are related to service orchestration, reporting, portfolio and campaigns management, subscribers management.

4. **Transactional platforms.** These solutions are interconnected to MNOs’ systems, and support the activities related to the so called “CBA process”: content charging, content billing, and revenues accounting among the involved parties. These
MCSDPs commonly possess some functionalities of SMS/MMS/WAP-based service delivery.

5. **Transversal platforms.** Such MCSDPs show cross coverage of modules and functionalities, that makes it difficult to identify a prevalent purpose, thus making them multi-purpose platforms.

**The identification of the model’s technology classification variables**

The third and last step of the model concerns the identification of a further layer of MCSDP technology dimensions or classification variables that directly influence the platform’s performances, in turn strictly related to the benefits achievable from the platform adoption. The identification of such key technology variables or dimensions is essential to provide the basis for the MCSDP classification and benchmarking processes, as it makes possible to discriminate the technical origins of different platform performances.

Basically, the *rationale* followed to judge a dimension’s significance was its impact on the achievable benefits. A technology concept is relevant if its presence or absence influences, to some or to a large extent, the attainability of expected benefits deriving from the MCSDP introduction, constituting a plus or a drawback for the platform itself – conditions being equal in terms of functionalities endowment –.

In order to grant the rigor of this stage, a classical tool borrowed from Quality Function Deployment literature will be employed: the so called “House of Quality”.

This model allows to cross a product’s Customer Attributes – representing the expected benefits – to a set of Engineering Characteristics – or technology dimensions – which are likely to affect one or more of the CAs (Hauser, Clausing, 1988).

As widely explained in the methodology section, the MCSDP CAs were derived from a combination of a literature review and of qualitative interviews to platform’s business customers. As a whole, the customer requirements were brought back to 2 primary levels:

- the Economics level, aggregating all the economics-wise and financial-wise benefits;
- the Technology level, considering all the technology-wise benefits related to the player’s technological infrastructure.

In turn, the economics benefits could be further disaggregated into 7 second-level benefits or requirements: Value Added Services revenues increase; Value Added
Services lifecycle management savings; scale and scope economies; Value Added Services offer differentiability; Value Added Services Time to Market reduction; customer pool width increase; Value Added Services portfolio width.

At the same time, the benefits bundled in the Technology primary level could be detailed in 5 second-level requirements: third party relationship simplification; technology complexity reduction; technological architecture scalability; interoperability with legacy systems; technological flexibility and modularity.

![Figure 3 – The 2 levels of CAs bundle for a MCSDP](image)

After the CAs were identified, in order to build the House, the Engineering Characteristics influencing the CAs synthesizing the expected benefits from the MCSDP introduction needed to be listed. Taking into account these adoption benefits pinpointed through the qualitative interviews, and leveraging on a wide technical literature integrated with the data gathered through the 40 case studies, a set of 12 ECs to be used as technology classification dimensions was identified.

1. **Delivery channels available.** Through the “Network adaptation” modules and external network elements like Media Gateways, Media Switch and Media Routers (Li et al., 2003; Aioffi et al., 2004), MCSDP are able to deliver content on multiple channels: fixed, mobile, mobile broadcast (DVBH), IP, wireless, satellite, digital terrestrial tv. The availability of a wide range of delivery channels allows to reach a larger customer base, thus increasing the content selling revenues; moreover, it
reduces technology complexity thanks to the unified delivery environment, and makes possible to exploit scale and scope economies in distribution.

2. **Content types treated.** The main rich media digital content categories the platform can manage are: mobile games; video; music; infotainment – micro-browsing, SMS, MMS –; Personalization – logos, wallpapers, ringtones, ring-back tones – (Bertelè et al., 2008). The platform capability of treating the lifecycle of different content types impacts on several benefits, like the enhancement of services management efficacy and efficiency, the widening of service portfolio and potential customers and the increase of revenues coming from Mobile Content.

3. **Media types and formats supported.** Strictly related to the “content types” variable, this dimension assumes great relevance because of the growing multimediality of content, embedding audio, video, images, graphics and messaging (MEIC, 2003). Though the support to multiple media types and formats increases the platform complexity, it positively impacts on the width of the content & services portfolio.

4. **Proprietary vs. Open Source technology employed.** The trade-off here presented is between vertical, end to end proprietary platforms and open standards-based solutions. While the former option is related unique products, hardly replicable by competitors and potentially generating lock-in effects as regard to customers – MNOs and MCSPs –, the latter option makes the platform more flexible and easily interoperable with legacy and third parties systems (Blind, 2005).

5. **Service Oriented Architecture and Web Services adoption.** The introduction of SOA allows to depart from a point-style approach in platform design, ensuring a full connection between BSS/OSS and the platform itself, also allowing the integration of different applications and the reusability of service components, through transversal orchestration functions (Gartner, 2002; Forrester, 2005; IRC, 2007). In addition to this, Web Services grant interoperability between distributed applicative components, representing a service layer the SOA leverages on to access to different content and services and to combine them so to create new applications (Capp, Farley, 2005; Pavlovsky, Staes-Polet, 2005; Sur et al., 2006). Therefore, the adoption of a pervasive SOA and Web services approach impacts on several potential benefits: the increase of efficiency and automation of value added services (VAS) lifecycle management; the services time to market reduction; the widening of offer portfolio; the ability of exploiting scale and scope economies; the reduction of technology complexity, and the architectural flexibility and scalability.
6. **IP Multimedia Subsystem adoption.** IMS can constitute the standard on which to create dedicated architectures for IP multimedia services distribution to end customers (3GPP, 2006). The IMS key concepts are close to those proposed by the SOA and Web Services approach (Sur et al., 2006), pushing towards the reuse of applicative components and the creation of a common “control layer” to centralize the management of services published on the MCSDP. This increases efficacy and efficiency in the VAS portfolio management, making the architectural solution more flexible and scalable.

7. **OSA/Parlay Interfaces integration.** OSA/Parlay Application Program Interfaces offer an abstraction of core network functionalities, supporting the interfacing between the platform and third parties systems (Zahariadis et al., 2002; Moerdijk, Klostermann, 2003; ETSI, 2005[a]; Karlich, 2007). Specifically, API Parlay X leverage on Web Services technologies, letting the emergent developers community to easily access network functions and capabilities (ETSI, 2005[b]). Therefore, API influence new services’ time to market reduction and the simplification of the relationships with business partners.

8. **Interactivity and two-way channels availability.** Making interactivity and two-way communication available to end users can increase the service perceived “quality of experience”, also allowing the appealing upload of “user generated content” on the platform – thus making the end customer become a content provider of his own (Pavlosky, Staes-Polet, 2005). This can differentiate the platform from competitors’ offers.

9. **Context aware & location-based services enablement.** The possibility of delivering forefront services based on the context of fruition – determined by network capabilities, device profile and user profile – and on the end user geo-spatial location rests on the platform equipment of technologies for “network discovery”, user & device profiles storing and GPS localization (GSMA, 2003). This all enhances the innovativity of the offer, with a potential positive influence on revenues generated – depending on the services uptake. –

10. **Out of the box vs. taylor made solution.** As Porter (2001) asserted, strongly standardized and poorly customizable products bring down both the technology complexity and the offer differentiability; on the contrary, taylor made solutions imply higher development costs, but grant offer uniqueness.
11. **Application Development Platforms supported.** Concerning software technologies allowing the creation and consequent fruition of mobile applications – Sun Microsystems’ J2ME, Qualcomm’s Brew, Macromedia’s Flash Lite, W3C’s SVG, Streamezzo’s Laser etc. (Barsook, Freedman, 2005) –, it can be argued that supporting a wide range of ADPs positively impacts on the range of content deliverable; however, the proprietary nature of some ADP solutions can make interoperability and third parties relationships more complex.

12. **Mark-up languages supported.** Within the MCSDPs perimeter, mark-up programming languages belonging to the HTML family (IETF, 1995) – XML, XHTML, XSL, SGML, WSDL, PML, SMIL, VXML, SALT, SAML – have two main purposes: first, they represent the codes used for platform development, and ensure the overall technology infrastructure governability; second, they support the creation of multimedia applications. Relying on such languages increases the efficiency in the VAS lifecycle management, making the architectural solution more flexible, scalable and interoperable.

At this stage, the 12 secondary CAs were to be crossed to the 14 ECs – proprietary technology and open source technology were considered as two separate technology characteristics, since their impact on the achievable benefits is dual; the same approach was taken when considering the ECs of out-of-the-box and taylor made solutions – in order to develop the “relationship matrix”, where each and every existing relationship between customer attributes and engineering characteristics are made explicit, and the strength of these relationship is also addressed.

As shown in Figure 9, a “green” crossing of a CA and a EC indicates a positive relationship between the two, implying that the adoption of the technology variable under consideration makes it easier to obtain a given performance: for instance, on the economics benefit side, the availability of many delivery channels allows to reach a wider customer pool, thus gaining higher revenues and benefiting from scale and scope economies on VAS delivery; on the technology side, a Service Oriented Architecture and Web Service based approach grants higher flexibility, scalability, modularity and interoperability with the legacy environment. On the contrary, a “red” crossing stands for a negative relationship, as the technology dimension has a negative influence on that specific customer perceived benefits’ attainability: for instance, an open source-based platform will not catalyze the VAS offer differentiability, as it will become imitable by competitor more easily than a proprietary solution. In some cases, the relationship
between CAs and ECs can also be conflicting – represented by a “yellow” crossing –, as the technology dimension affects both positively and negatively the given attribute, therefore making it hard to claim which of the two effects is stronger: this is the case of the variable ADPs supported, when considered in relation to third party relationship simplification and interoperability with legacy.

The House of Quality also serves as a powerful tool to analyze the existing relationships and trade-offs between ECs: the “roof matrix” on top of the relationship matrix allows to highlight how the ECs collaterally affect each other. Again, positive, negative or conflicting relationships are evidenced through green, red and yellow points respectfully. For example, adopting the interactivity dimension is positively related to the platform’s technological capability of delivering innovative context-aware and location based services, while usually it is negatively associated to the development of simple, generic out-of-the-box solutions.

As a whole, the third and last step of the model, through the use of a rigorous QFD tool – the House of Quality – allowed to identify a further set of technology variables or ECs, directly influencing the achievable benefits, to be used as an additional layer for enabling the MCSDP classification.
The overall MCSDP Technology Classification model

The overall MCSDP Technology Classification model is synthesized Figure 10. Ontologically, the 3 model’s building blocks are strongly connected. In the first stage, a general model of a MCSDP Functional Architecture is provided, portraying the platform endowment in terms of functionalities. The second stage, whose goal is to offer a classification in terms of the platform purposes, directly descends from the first one, as the creation of the 5 key platform categories emerges from a combination of the previously identified architectural functionalities: the platform purpose depends heavily on the functionalities it covers, which allow to operationally perform the required tasks. In the third stage, through the adoption of the House of Quality tool borrowed from QFD theory, the main Customer Attributes expressing the voice of MCSDP customers were employed to define a further set of Engineering Characteristics or technology classification variables: such ECs represent a sub-layer of platform design levers directly affecting the platform’s performances in terms of customer’s attainable benefits – again, conditions being equal in terms of functionalities endowment –.

After having provided an in-depth description of the model’s constitutive building block and core stages, the original framework created will be employed to classify MCSDP
solutions, as shown in the next section, concerning the model’s application to the MMTPs sample.

![Diagram of the overall MCSDP Qualitative Technology Classification Model]

**Figure 5 – The overall MCSDP Qualitative Technology Classification Model.**

**The model application to the companies sample**

In order to prove the model’s validity and descriptive effectiveness, also accomplishing the a major research objective, i.e. to provide a classification of the current MCSDP offer presented by MMTPs, the theoretical model developed will be applied to a real context, represented by the sample of firms analyzed through case studies.

The functional architecture and the platform categories of stages 1 and 2 will serve to categorize the existing MMTP solutions in terms of their main purposes; consequently, the platforms offer will be mapped with reference to the additional sub-layer of technology dimensions, so to assess its coverage of these CAs-impacting variables.

**The offer distribution on the five MCSDP categories**

Through the analysis of the solutions repartition in the 5 platform categories according to their prevailing purpose – in turn expressed by their architectural design, as stated in
section 3.2 –, some considerations can be made concerning the emerging clusters and the players populating them.

Table 2. The application of Step 1 and 2 to the MMTPs sample

<table>
<thead>
<tr>
<th>CONTENT CREATION PLATFORMS</th>
<th>CONTENT MANAGEMENT PLATFORMS</th>
<th>BUSINESS MANAGEMENT PLATFORMS</th>
<th>TRANSACTION PLATFORMS</th>
<th>TRANSVERSAL PLATFORMS</th>
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<tbody>
<tr>
<td>2. OPENWAVE</td>
<td>7. BEEWEB</td>
<td>21. BEA SYSTEMS</td>
<td>29. SYBASE 365</td>
<td>31. BUONGIORNO</td>
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<td>3. SPB</td>
<td>8. DRUTT</td>
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</table>

Within the theoretical sample of companies analyzed through case studies, only 2 platforms on 40 – 5% of the overall sample – under consideration are Transactional platforms: such platforms, whose core task is to support the Charging – Billing – Accounting process, need their providers to create a net of both contractual relationships and infrastructural connections with MNOs’ system. This element makes them hard to replicate, but also to develop: therefore, only a few players operate globally on the transactional services business area.

The second less-populated cluster is the Content Creation one, containing 5 solutions – representing the 12.5% of the overall sample –: these solutions are mainly implemented by players internalizing the content creation core business, like CPs.

In the companies sample, 8 – 20% of the overall sample – solutions could be labeled as business management platforms: these platforms are mainly offered by big companies coming from System Integration – e.g. Logica CMG –, IT Platforms provisioning – e.g. IBM, Microsoft – or Network Equipment provisioning – e.g. Alcatel Lucent, Ericsson – markets, who leveraged on their core resources and assets like technology know-how, products portfolio, competitive positioning and financial solidity, to penetrate the MCSDP segment.

The Transversal platform category is populated by 11 solutions – 27,5% of the overall sample –: these all-purpose, end-to-end platforms are provided by Mobile incumbent
players – e.g. Buongiorno, Comverse, Dylogic – or other quite heterogeneous companies attempting to diversify their IT offer – e.g. HP, Qualcomm, Reitek, Txt Polymedia –.

The most populated cluster is the one grouping Content Management platforms: 14 solutions on 40 – 35% – are classified as focused on content management: again, these products, covering the core module related to managing rich media digital content, are commercialized by quite a diverse range of players, encompassing: pure MMTPs, like Beeweeb, Nokia-Siemens Networks, Nec, Polarix and Xiam Technologies; Mobile incumbent companies that pair their MCSDP offer to the commercialization of content and services published on the platform, like Jamba and Jet Multimedia; MASPs focusing on Campaign Management and Mobile Advertising, like Amobee, ScreenTonic and Third Screen Media; and providers of “best of breed” products covering specific platform modules, e.g. Drutt for content lifecycle management, Neodata for business intelligence and reporting, and Unipier for DRM and IPR.

**The MMTPs choices concerning the technology classification variables**

The last step of the model’s application consists in mapping the MCSDPs offered by the analyzed players in terms of their adoption of the technological design dimensions previously identified through the House of Quality. Through such analysis, it will be possible to conclude the platform classification, thus supporting the technical benchmarking of the solutions currently available on the market, pinning down and interpreting their main positive and negative elements, and in the end drawing insightful conclusions on the offer state of the art.

The Table below shows, for each of the 40 analyzed players, the adoption choices made at the transversal technological design dimensions level. A heavy adoption – i.e. a strong implementation of the given technology element – is evidenced in green, while a low adoption is evidenced in yellow; the absence of the given technology lever in the solution under scrutiny is conveyed by a red cell in the table.

Analyzing each line of the table, one can grasp a single player’s overall positioning, while a column analysis shows a technology dimension’s pervasiveness throughout the companies sample.

**Table 3 The application of Step 3 to the MMTPs sample**
<table>
<thead>
<tr>
<th>Delivery Channels</th>
<th>Content Types</th>
<th>Media Types &amp; formats</th>
<th>Proprietary Technology</th>
<th>Open Source Technology</th>
<th>SOA &amp; Web Services</th>
<th>IMS</th>
<th>OSA/Parlay API</th>
<th>Interactivity</th>
<th>Context-aware &amp; LBS</th>
<th>Out of the Box</th>
<th>Taylor Made</th>
<th>AR</th>
<th>Markup languages</th>
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By observing the MCSDPs positioning, the prevalence of platforms capable of delivering a wide range of content clearly emerges. Moreover, it is possible to argue that the multichannel option is followed exclusively by platforms offering a large content portfolio: this finding can be explained by considering that the investments required for the integration of different delivery channels are only justifiable if high revenues coming from a wide VAS offer are expected. The interactivity feature is also quite diffused in the sample, being present on 27 platforms out of 24, while context-aware and LBS are not so common yet, being supported by only 15 platforms.

When addressing the correlation between open or proprietary technologies, multiple channels, SOA and IMS, other intriguing elements emerge. The SOA approach is adopted in 24 products out of 40, demonstrating the validity of this architectural paradigm coming from the IT enterprise platforms environment, and quickly diffusing in the Telecommunications context. IMS is employed by approximately half of the of products – 21 solutions –, testifying the service layer evolutions towards an “all IP” approach. Proprietary technologies are preferred to open source ones – 27 vs. 13 solutions –, as MMTPs struggle to make their offers unique, and potentially lock in their business customers.

The products distribution in the table shows that while SOA approach is more common along the open source axis – proving the positive correlation existing between the two elements, as evidenced in the “roof” of the House of Quality –, the IMS adoption is frequent in the multichannel alternatives – again, consistently with the considerations made when crossing the two ECs in the House –, regardless of the “technology”
variable, in the light of the growing significance of IP in the process of integrating different delivery technologies

Considering the combined effect of the dimensions mostly impacting on the platform interoperability with legacy or third parties systems – i.e. technology employed; customizability level; OSA/Parlay API availability; mark-up languages support; ADP support, ranging from narrow to wide support –, a consistent fragmentation becomes evident. APIs are widely used, as well as mark-up languages; on the other hand, the support to different ADPs is still narrow, because of some “standard wars” between proprietary technologies the regulators or the international consortiums will be asked to settle. Concerning customizability, in 20 cases the MCSDPs are standard, out-of-the-box products, with little or no personalization or parameterization features; in 11 cases, however, standardization and customizability coexist, and the platforms are characterized by some degrees of flexibility in terms of design and implementation.

The picture obtained through this technology classification allows to make insightful inferences on the MMTPs offer state of the art, in terms of both strengths and weaknesses.

The main pluses characterizing the offer can be synthesized as follows:
- wide portfolio of content and services deliverable;
- widespread support to interactivity;
- integration between mobile and web channels;
- wide support to media types and formats;
- frequent SOA and IMS adoption;
- significant modularity, flexibility and scalability;
- frequent OSA/Parlay API adoption;
- common use of mark-up languages.

On the other side of the coin, the current MCSDP offer is characterized by some significant drawbacks:
- scarce support to context aware and location-based services;
- verticality and poor interoperability of some proprietary products;
- criticality of content adaptation processes;
- low products customizability;
- limited horizontal support to ADP.

Conclusions
The research provided an original reference model for supporting a technology classification of mobile Content & Service Delivery Platforms. Such original framework was built on two pillars: a literature analysis well grounded on the existing body of knowledge concerning middleware platforms and IT systems, and an empirical analysis based on case studies on 40 Mobile Middleware Technology Providers, the platform vendors. Quality Function Deployment methodology also played an important role within the reference model: the House of Quality tool was employed for translating the platform customers’ expected benefits in engineering characteristics. Integrating QFD methodology has a number of relevant positive effects on the model developed. First, it creates a strong link between the company and the “outer world” represented by the market, as it forces to clearly identify the product’s benefits – i.e. the customer requirements – and establish a direct, structured and quantifiable relationship to design and manufacturing characteristics, thus making the engineers meet the customers voice. Second, it potentially enhances the internal relationship and communication among the company’s departments, as CAs should be evaluated and analyzed by inter-functional teams so to individuate the right ECs to match them, without losing important information. Third, it strengthens the normative role of the model, supporting core activities of the decision making process, such as: product strategic positioning assessment; competitors benchmarking; strategic opportunities discovery; and target setting.

The model was hence applied to the sample of platforms currently marketed by MMTPs, so to test its validity, and obtain a valuable insight on the MCSDP offer state of the art. The findings show the real world offer of middleware platforms possesses some interesting features – ranging from the width of service offered and delivery channels supported, to the adoption of SOA and IMS approaches –; nevertheless, other significant drawbacks – e.g. insufficient support to context aware and location-based services, poor coverage to application development platforms etc. – are limiting the solutions effectiveness. Short term market trends will most likely see the coexistence of end-to-end transversal platforms, and of niche solutions focused on few modules or functionalities.

Concerning the model’s properties, internal validity is ensured, for the platform positioning – dependent variable – is perfectly explained by the identified dimensions of
classification – independent variables –; in terms of external validity, the model can be
generalized to different populations, thanks to the width and significance of the sample
under scrutiny; moreover, the rigorous qualitative research methodology employed
should grant the reliability and replicability of the model’s results. A limitation that
needs to be addressed is that of tautological validity of the obtained results, since the
model is applied to the very same sample of companies analyzed to gather the
information employed to create it. However, the approach followed does not affect in
any way the methodological soundness proper of the model development process, and it
may exclusively impact on the relevance of the conclusions on the MCSDP offer state
of the art drawn in section 4: nonetheless, the significant number of case studies
performed, and the fact that the model’s variables are also derived from a wide literature
review which pairs the empirical analysis, contribute in attenuating this limitation.
Future research will need to apply the model to a different sample of MMTPs, in order
to test its validity outside the first sample which originated it, so to definitely solve the
issue of tautological validity the model’ conclusions may be burdened with.
The paper’s value for researchers can be brought back to the creation of a reference
framework capable of rigorously modeling the emergent phenomenon related to the rise
of middleware platform providers within the Mobile Content market. The paper also
contributes to extending the existing QFD literature, since it demonstrates the House of
Quality tool’s usefulness in a new context of application.
The value for practitioners lies in the provisioning of a tool with powerful descriptive
and normative value.
On the descriptive side, the model can be used for mapping existing and future MCSDP
offer, in terms of technological strengths and weaknesses. On the normative side, it
supports the decision making process of a wide set of stakeholders. Customer firms
attempting to find out what they should look for in middleware solutions and what they
should implement according to their needs can employ it to set guidelines for platform
adoption. Platform vendors themselves can look at the model to guide their offer
positioning at a functionalities endowment level, and thanks to the creation of strong
ties between platform capabilities and associated benefits, to drive the choices made at a
technological design dimensions level, which heavily affects the MCSDP market
attractiveness
Though representing a significant step towards the study of MMTPs through the
evaluation of the core element of their value proposition, the research does not
specifically assess the strategic and competitive implications of choosing a given MCSDP technology positioning. The framework essentially constitutes an interesting technology-based support for internal strategic analysis: future research will need to focus on integrating the present model within a thorough external strategy analysis framework for mobile middleware platform providers.

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2.4 BUSINESS MODELS AND STRATEGIC PLANNING: A PROPOSAL FOR A UNIFIED FRAMEWORK AND THE APPLICATION TO THE MOBILE TELECOMMUNICATIONS INDUSTRY

Executive summary

1) Research topic and encountered open issues
The business model concept is perceived more and more important by managers and academics, however it is often used as a buzzword meaning everything and nothing about the “new economy”. The authors dealing with the topic try to describe the concept in terms of its components or building elements but the resulting parameters seem to be strongly dependent on the author’s field of work. Indeed, even if there are some work of reference, there is not a definition that is recognized by all. This is in part due to the complex evolution that the business model has undergone, characterized by overlapping researches facing different business model domains ranging from definition to components and taxonomies, from design representation to change methodologies and evaluation models. In fact the analysis of these studies shows a weak chronological evolution of the concept, leaving space for intertwined research blocks rather than a linearly developed literature.

The business model issue is often wrongly associated to a mere revenue model problem because the economic aspect of the company is yet the master within the business world and this reflects the widespread focus on the quantifiable concept of cost and revenue rather than value. However the theme of value is recurrent in the business model literature, showing a multiple nature due to the necessity of improving relationships between three different business participants: the company, the customer, and the business network. It thus represents the business model foundation and the liaison element of all business model components.

The discussion on business model comprehends the idea of innovation of the company that, by changing it, transmits the willingness to challenge its sources of value and economic mechanisms in order to experiment a better combination that enforces its competitive situation. For this reason the concept seems to have a close relationship with the strategic one, anyway the conceptual boundaries between the two terms are so rarely defined that they are usually used to explain each other creating a sort of confusion. Even if business model and strategy are not perceived as the same thing, the lack of a deep analysis related to their relationship makes it difficult to define concrete differences between them, which of the two has to be defined first, and which are their domain of interests.

Other open issues identified in the study of business model literature are related to a lack of a precise place of business model innovation and experimentation within the company processes and of a recognised role of managerial leadership to drive the business model change. Furthermore it is very rare to find practical examples of
business model principles application to real world cases, thus the main idea of this work is to show how the theoretical framework built on the basis of the literature analysis can be adapted to real business players – in particular, the Mobile is consider as the market of reference and the players to which the concept is applied are Mobile Network Operators and Device Manufacturers – .

The work, entitled “Business Models and Strategic Planning: a proposal for a unified framework and the application to Mobile Telecommunications Industry” is composed by the following sections:

Section 1 – Business Models Research Literature – provides an overview of the literature and period considered in order to build the basis for further argumentations, defining the literature streams to which the discussions on business model concept belongs, its origins and evolutions, and its different domains.

Section 2 – Literature Critical Analysis – proposes a classification scheme aimed at facilitating the comparison of comprehensive business model literature identified and provides detailed discussions about the most significant topics: business model definitions, components, taxonomies, relationship with strategy and innovation. This analysis leads to the revisiting of traditional strategic macro-process in order to include the business model design as a phase of the process itself. Furthermore the reasons for the importance of business model concept within the Mobile context are introduced and Mobile specific literature is summarized.

Section 3 – Business Model Unified Framework – presents the results of literature analysis proposing an original model, its main components and related building elements, and its conceptual boundaries.

Section 4 – Framework Application – illustrates the reasons for the choice of Mobile business as context of framework validation, the methodological approach adopted, and the value range analysis applied to Mobile Network Operators and Device Manufacturers for the identification of extreme cases related to each business model parameter.

II) Objectives
The main reasons underling this study are related to the individuation of a conceptual gap in the current academic business model literature, characterized by many pieces of work contributing to the discussion rather than presenting a unified view of the concept. This is enforced by a recognized necessity of revisiting companies’ actual business models on the basis of increasing competition. For these motivations the objectives underlying the study are the following:

1) To investigate the business model literature with particular attention to the search of a unified definition of the term taking into account different authors’ thinking and to the analysis of the components of the identified model;
2) To clarify the discussions concerning the business model and strategy relationship in order to fill the existing gap related to strategy operationalization;
3) To develop the recent concept of business model innovation and experimentation, since the theme related to the necessity of a dynamic and flexible model is becoming more and more relevant.

These preliminary objectives are followed by others more specific, whose argumentation is developed in the part related to the empirical analysis:

4) To adapt the most critical choices made at a business modelling level identified by the unified business model framework to specific Mobile players, like Mobile Network Operators and Device Manufacturers;
5) To understand which is the Value Range that these parameters can assume;
6) To delineate what are the most significant business implications derived from the adoption of different choices related to the Value Range.

III) Literature analysis

The project relied on a vast literature analysis. On one hand the business model concept is built on precise foundations that are collected in the business model antecedents category of literature and on the other it depends on specific fields of analysis, in particular four sub-categories are identified and called E-commerce, Strategic, Innovation, and Mobile. Here the list of literature streams and related authors:

- **Antecedents to business model concept:**
  
  Strategic planning (Ansoff 1980; Mintzberg 1994); Strategic positioning (Porter 1980); Value chain (Porter 1985); Resource based theory (Penrose 1959;
Wernerfelt 1984; Barney 1991; Prahalad and Hamel 1990); Strategic network theory (Gulati, Nohria and Zaheer 2000); Transaction cost economics (Williamson 1979); Organizational design (Nadler and Tushman 1997); Strategy execution processes (Kaplan and Norton 2000; Hrebiniak 2005).

- Business model literature:
  - E-Commerce: Timmers (1998); Mahadevan (2000); Gordijn (2000); Amit and Zott (2001); Papakirikopoulos et al. (2001); Petrovic et al. (2001); Alt and Zimmerman (2001); Applegate (2001); Gordijn et al. (2000, 2001); Rappa (2001); Weill and Vitale (2001); Yu (2001); Afuah and Tucci (2001, 2003); Lam and Harrison-Walker (2003); Pateli and Giaglis (2003); Mansfield (2005); Lambert (2006); Osterwalder (2002, 2004); Osterwalder et al. (2005); Hedman and Kalling (2002); Hsu et al. (2008).
  - Strategic: Linder and Cantrell (2000); Tapscott et al. (2000); Magretta (2002); Chesbrough and Rosenbloom (2002); Mansfield and Fourie (2003); Seddon and Lewis (2003); Yip (2004); Shafer et al. (2005); Morris et al. (2005); Richardson (2005); Tikkaten et al. (2005); Amit and Zott (2006); Lai et al. (2006); Keen and Quareshi (2006); Makinen and Sepanen (2006, 2007); Ballon (2007); Rasmussen (2007); Verstraete and Jouison-Laffitte (2007, 2009); Casadesus-Masanell and Ricart (2007, 2009); Goethals (2009); Gunzel and Wilker (2009); Johnson et al. (2009); Itami and Nishino (2010); Baden-Fuller and Morgan (2010).
  - Innovation: Hamel (2000); Tucker (2001); Mitchell and Coles (2003); Lemann-Ortega and Schoettl (2005); Leung (2007); Chesbrough (2007, 2010); Johnson and Christensen (2009); Teece (2009); Lindgardt (2009); Zott and Amit (2009); Demil and Lacoq (2010); Doz and Kosonen (2010); Smith et al. (2010); McGrath (2010).
  - Mobile: Pigneur (2002); Faber et al. (2003); Camponovo and Pigneur (2003); van de Kar et al. (2003); Vassilopoulou et al. (2003); Leem et al. (2004); Haaker et al. (2004, 2005); Kijl et al. (2005); Kim et al. (2005); Maitland et al. (2005); Ballon and Van Bossuyt (2006); Methlie and Pedersen (2007); Al-Debei and Avison (2008); De Reuver et al. (2009); Ghezzi (2009); Ghezzi, Balocco, and Rangone (2010).
The above mentioned business model literature constitutes the core part of this work. The research of the corresponding articles was carried out by key words, thanks to research engines of scientific online libraries and publishing groups (Wiley Online Library; Science Direct; Elsevier; Google scholar; Google books; Emerald; Springer; IEEExplore digital library; InderScience publishers). This allowed to collect more than 200 works within which, after a careful reading, a sample of 82 was selected. Some articles have been discarded because they do not provide significant contributions to previous literature considered or because they provide business model definitions and components explanations that are specific to a certain industry thus they lose their importance because it is not possible to generalize them. Furthermore the impact factor has been considered both for the article and the journal itself.

The analysis was conducted on the basis of a scheme that is reported in the Annex 1 and aims to facilitate the comparison of authors’ reasoning about business models. The scheme builds the foundations for further work of elaboration of discussed topics and for business model unified framework formation. It is divided in the following sections:

- **Research question:**
  synthesis of research objectives in terms of open questions to be addressed;

- **Literature background:**
  literature studies on which the author under analysis relies during his research work;

- **Methodology:**
  type of research conducted in order to collect empirical data;

- **Business Model definition:**
  authors’ definition of the term “business model”;

- **Business Model construct:**
  list of the business model components (also called functions, pillars, building blocks, design parameters…), their definitions and explanation of their relationships;

- **Business Model – Strategy relationship:**
  differences and theoretical connections between business model and strategy concepts;

- **Relationship between Business Model and other theories/constructs:**
concepts other than strategy are taken into account (i.e. innovation, experimentation, organizational leadership, imitation, and integration);

- **Arguments and conclusions:**

  brief summary of the key concepts of the authors’ work or reference to new concepts (e.g. open issues, future research studies).

The above mentioned scheme facilitated the identification of more than 60 business model definitions and more than 200 related components. These different contributions reflect multiple points of view about the topic, this is the reason why the study calls for a necessity of clarifying the concept. The method applied for this scope is based on an evaluation of proposed elements frequency and significance in order to demonstrate that often they refer to the same element but simply call it differently. This procedure allowed to conclude that only 12 components (Table I) are considered in at least 4 different constructs, thus constituting relevant information for the original business model framework formulation. However the components accounting for fewer references are not excluded from being part of the business model concept. They may represent higher level of analysis – thus being included in other components – or just referring to similar concepts but using different words.

**Table I: Top cited components**

<table>
<thead>
<tr>
<th>Component</th>
<th># of references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value proposition</td>
<td>13</td>
</tr>
<tr>
<td>Revenue (model, stream)</td>
<td>8</td>
</tr>
<tr>
<td>Customer value</td>
<td>6</td>
</tr>
<tr>
<td>Customers</td>
<td>6</td>
</tr>
<tr>
<td>Costs and cost structure</td>
<td>6</td>
</tr>
<tr>
<td>Value network</td>
<td>5</td>
</tr>
<tr>
<td>Activities (connected, key)</td>
<td>5</td>
</tr>
<tr>
<td>Strategy (core, competitive)</td>
<td>4</td>
</tr>
<tr>
<td>Resources (strategic, key, model)</td>
<td>4</td>
</tr>
<tr>
<td>Organization (form, structure, architecture)</td>
<td>4</td>
</tr>
<tr>
<td>Capability</td>
<td>4</td>
</tr>
<tr>
<td>Offering (value, model, factors)</td>
<td>4</td>
</tr>
</tbody>
</table>
In general the term “value” appears 50 times thus representing the core concept of the business model and it is associated with different terms – proposition, network, chain, stream, offering, exchange, configuration, creation, capturing, architecture, and many others -.

Strategy – is it core or competitive – accounts for the eighth position underling a strong relationship with the business model but also opening space for theoretical discussion related to the difference between the two concepts. The literature analysis addressing this specific issue allows to denote that a lot of authors agree in considering the business model as a framework for strategy execution. This induces to consider the business model design process as a missing step in the traditional strategic macro-process. It places between planning and operational processes as a link between the strategy formulation and its implementation.

Since its main characteristics are identified in the power of experimentation, in order to define in detail the business model design process, it is first necessary to combine the study on business model and strategy with that on business model innovation. What results is that companies have to implement a continuous business model innovation program because it allows to test different business model options related to strategic alternatives chosen in the planning phase and to understand which is the best option to adopt and then implement (Figure I).

Figure I: Strategic macro-process considering business model design
According to this reasoning, experimenting phase plays a central role because it allows to identify discontinuities in business model parameters values and thus, by combining its anomalies detection nature and the process of anticipation of the change, the company can improve its ability in understanding the right moment for reactivating the planning process.

IV) Business model framework

According to these findings, the business model is defined in this work as a synthetic representation of the logic that the company adopt in order to execute its strategy. It describes the value model (i.e. what value means for the company, its business network, and the customer), the creation and delivery of that value, and the value capturing (i.e. how the firm internalize a share of that value).

The main features of the business model concept are identified in the focus on value, its customer-centric nature, its role in strategy operationalization, and the importance of its visual representation that facilitates an immediate and clear communication with
internal workers, partners and shareholders. On the basis of this explanation, resulting from a comprehensive literature analysis, it is also possible to define a further level of decomposition, dividing the business model three components into nine building elements. In particular the value model is characterized by the target segments, the customer value, and the value propositions; the value creation and delivery is composed by the organization, the value chain, and the value network; and the value capturing is divided in revenue model, cost structure, and financial aspects (Figure II).

Other concepts like technology, strategy, resources and competencies, and external environment, that were often considered as part of the business model, are defined as separate even if strongly influencing it and interacting with it.

V) Framework application: context, methodology and results

The business model framework is applied to the Mobile context in order to verify its adaptability to a real-world case. The choice of Mobile is related to different reasons:

- the necessity for Mobile players of revising their current business model is identified as a priority by most part of the professionals and academics working in the context. This necessity arises from the higher and higher competition
characterising that market, which call for new sustainability programs and
defensive measures that Mobile companies have to take in order to protect
themselves respect to new entrants.

- the convergence of Mobile, Internet and Media contexts offers an opportunity of
gaining customers and offering new products and services to computer and
software manufactures (e.g. Apple, Microsoft) and traditional Internet giants
(e.g. Google, YouTube). Thus this constitutes a relevant threat for Mobile actors
also because Internet world is characterized by the Free logic that instead is
absolutely unsuitable in the case of Mobile that has the necessity to capitalize on
its investments.

- Mobile market is a clear example of how some business model foundations, in
particular the value creation logic and the importance of the value network, are
moving away from traditional strategic model in order to include more
innovative views. This is the case of extension of the traditional value chain
model to value networks and of application of open innovation principles that
gain a greater importance when associated to the Mobile business calling for the
necessity of increased coordination and communication mechanisms with
partners and even collaboration with competitors.

In particular a qualitative analysis is conducted and the choice of the methodological
approach refers to case studies as the literature suggests (Yin, 1989, 1993, 1994; Feagin
et al., 1991; Ragin and Becker, 1992; Stake, 1995; Tellis, 1997 [a], 1997 [b]; Flyvbjerg,
2006).

Mobile players that take part to the framework validation are Mobile Network Operators
and Device Manufacturers (Table II). The formers own the 3G (UMTS) license and
network, are responsible for the provisioning of its functionalities, and control other
market’s essential facilities and assets. The latters focus on the manufacturing of
Mobile/Wireless devices employed by End-users to get access to Content and Services
(e.g. cell phones, smart phones, PDAs, …).

Table II: Case studies

<table>
<thead>
<tr>
<th>Type of Mobile players</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Operators</td>
<td>H3G, TIM, Vodafone, Wind</td>
</tr>
<tr>
<td>Device Manufacturers</td>
<td>Nokia, Sony Ericsson, RIM, Samsung</td>
</tr>
</tbody>
</table>
The methodological approach is based on Value Range logic. This means that each business model building element constituting the framework is considered, the extreme values that the variables can assume are identified, and related business implications are explained. This analysis allows to underline pros and cons of each extreme case and is easily adaptable to companies operating in different markets.

Tables III and IV report the results obtained by applying the Value Range logic respectively to Mobile Network Operators and Device Manufacturers.

### Table III: MNOs’ business model framework

<table>
<thead>
<tr>
<th>Value Model</th>
<th>BM building elements</th>
<th>Value Range</th>
<th>Business Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target segments</td>
<td>Concentrated (consumer or business customers; national reach)</td>
<td>Homogeneous market. Lower managerial complexity. Narrower range of business opportunities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distributed (consumer and business customers; international reach)</td>
<td>Heterogeneous market. Wider range of business opportunities. Increased managerial complexity.</td>
<td></td>
</tr>
<tr>
<td>Customer value</td>
<td>Price sensitive</td>
<td>Standardization. Lower flexibility. Competition on prices.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High quality, Personalized</td>
<td>Higher flexibility (customized offer, services bundles). Differentiation. Higher costs of personalization.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Innovative (Media Application + Mobile Internet)</td>
<td>Media Company approach. High innovation but also managerial complexity.</td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td>Vertical (Function-based)</td>
<td>Efficiency-oriented. Stronger control over specific resources and competencies. Lower coordination and flexibility, lower responsiveness.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horizontal (Project-based)</td>
<td>Effectiveness-oriented. Focus on project objectives and results. Market responsiveness. Risk of loss of competencies and complexity due to less control.</td>
<td></td>
</tr>
<tr>
<td>Value chain</td>
<td>Full integration</td>
<td>End-to-end coverage of operational activities on the Network Layer and the Content &amp; Service Layer. Higher costs, absence of cooperation, competition with MCSP, WC and DM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hollow corporation</td>
<td>Focus on coordination/intermediation activities with MCSP, WC and DM. Operational activities restricted to the Network Layer. Higher relationship complexity and coordination problems.</td>
<td></td>
</tr>
<tr>
<td>Value network</td>
<td>Stand alone</td>
<td>Buyer-seller network relationships, internal sources of value and innovation. Higher internal complexity.</td>
<td></td>
</tr>
<tr>
<td>Revenue model</td>
<td>Cooperatives</td>
<td>Central role in the Value Network. Higher control of revenue streams and revenue sharing agreements. Conflict with other value network players (e.g. Internet Companies, Device Manufacturer, Media Companies).</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Direct (paid by customer)</td>
<td>Intermediated role in the Value Network. Openness to third parties. Risk of losing control over the end customer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect (paid by third parties, e.g. MCSP, advertiser)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost structure</td>
<td>Concentrated</td>
<td>Increased independence. Increased risk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distributed</td>
<td>Risk sharing. Increased dependence on partners.</td>
<td></td>
</tr>
<tr>
<td>Financial aspects</td>
<td>Investment driven</td>
<td>Risk taker on investments (trial and error approach). More innovation opportunities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Money maker</td>
<td>Cash generation oriented. Lower risk of wasting money on experimenting unsuccessful investments. Lower chance of discovering innovation opportunities.</td>
<td></td>
</tr>
</tbody>
</table>

**Table IV: DMs’ business model framework**

<table>
<thead>
<tr>
<th>BM</th>
<th>BM building elements</th>
<th>Value Range</th>
<th>Business Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Model</td>
<td>Target segments</td>
<td>Total coverage (different products for different markets)</td>
<td>Wider market reachable. Wider product range, and higher managerial complexity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Niche market (specific products for market specialization)</td>
<td>Competing on specific customer needs. Narrower product range, Limited market reachable.</td>
</tr>
<tr>
<td></td>
<td>Customer value</td>
<td>Easiness of use</td>
<td>Focus on simple, direct functionalities. Standard technological resources and competencies required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experimentation</td>
<td>Focus on quality of experience. Advanced technological resources and competencies required.</td>
</tr>
<tr>
<td></td>
<td>Value propositions</td>
<td>Basic functions phones (SMS, calls)</td>
<td>Traditional “product-based” proposal. Lower strategic interrelationship management complexity. Lower range of opportunities. Average Margins.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value added functions phones (application stores, internet access)</td>
<td>Innovative “service-based” proposal. Higher complexity, higher range of opportunities. Higher Margins. Risks related to innovative services uptake.</td>
</tr>
<tr>
<td>Value Creation and Delivery</td>
<td>Organization</td>
<td>Functional (competence-based)</td>
<td>Focus on know how development and interaction among experts. Slow response time to environmental changes, lack of innovation, limited view of organizational goals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divisional (product/output-based)</td>
<td>Focus on integration and coordination of activities. Market responsiveness, faster and decentralized decision-making. Reduced economies of scale, poor coordination across product lines, lack of in-depth competence and technical specialization.</td>
</tr>
<tr>
<td></td>
<td>Value chain</td>
<td>Full integration positioning</td>
<td>Expansion towards the Content &amp; Service Layer. Higher opportunities. Competition with MNOs, MCSPs and WCs. Risk of “business inexperience”.</td>
</tr>
<tr>
<td>Value Capturing</td>
<td>Traditional positioning</td>
<td>Operational activities restricted on the Device Layer. Dependence on MNOs, MCSPs and WCs. Strong competitive positioning. Lower opportunities.</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Value network</td>
<td>Stand alone</td>
<td>Buyer-seller network relationships, focus on internal R&amp;D. Higher internal costs and time to market.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooperative</td>
<td>Partnerships network relationships, focus on risk and innovation sharing. Higher relationship and integration complexity.</td>
<td></td>
</tr>
<tr>
<td>Revenue model</td>
<td>Device – based</td>
<td>Dependent on device sale (to either MNOs or to end customers). Higher fixed revenues.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Added services – based</td>
<td>Dependent on bundle offer sale: device + content + applications (to either MNOs or to end customers). Lower fixed revenues, customer lock-in through service stickiness and switching costs.</td>
<td></td>
</tr>
<tr>
<td>Cost structure</td>
<td>Concentrated</td>
<td>Increased control over decisions. Increased risk of failure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distributed</td>
<td>Risk sharing among partners. Loss of control over decisions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Money maker</td>
<td>Reactive approach. Lower exposure to market uncertainties. Lower innovation opportunities.</td>
<td></td>
</tr>
</tbody>
</table>
Section 1

1) BUSINESS MODELS RESEARCH LITERATURE

1.1) Introduction

The discussion related to the concept of business model is quite recent. Indeed the first classification was found in 1998 when Paul Timmers published his article “Business Models for Electronic Markets” on The Report on Electronic Commerce underlying that “the literature about Internet electronic commerce is not consistent in the usage of the term business model”.

In the article “Rethinking strategy in a networked world (or why Micheal Porter is wrong about the Internet)” (2001), Don Tapscott explained that “historically, strategists weren’t particularly concerned with business models, because each industry had a standard model, and strategists assumed the model in that industry.”

Tapscott’s article was a provocation to professor Micheal Porter who previously wrote “Strategy and the Internet” (2001) stating that “instead of talking in terms of strategy and competitive advantage, dot-coms and other Internet players talk about business models […] The business model approach to management becomes an invitation for faulty thinking and self-delusion”.

Now, even though some years have passed and a consistent number of scholars have discussed about the topic, there is not yet an agreed definition and construct of business model. Still in 2009, Teece denoted that “business model concept lacks of theoretical grounding in economics or in business studies” and he is followed by Johnson et al. (2009) denouncing a lack of a standard definition and that “very little formal study has been done into the dynamics and processes of business models development”.

This gap has to be added to the lack of consensus related to the fact that a lot of definitions of business model have been born during the years but none appear to be generally accepted as stated by Shafer, Smith and Linder (2005). The same authors counted for 12 different definitions and 42 different components of a business model. They attributed these inequalities to the fact that the concept of business model interests a wide range of disciplines.
The aim of this section is to present an overview of business model literature considered, a summary of business model underpinnings and evolutions, and a first sight to an empirical context which can be taken into account for the theory building and testing on business model design: the Mobile telecommunications industry.

1.2) Literature sources and period considered

As already said, the literature range taken into account, although full of pieces of work on the subject, is quite short. This is just because the business model debate is a young phenomenon. It starts from Timmers argumentations dated 1998 and ends approximately with the special issue on business models dedicated by the Long Range Planning (2010).

In order to make a sort of clarity into this consistent literature background, it may be useful to classify the papers under analysis according to four different categories: E-Commerce, Strategic, Innovation, and Mobile.

- **E-Commerce**: the concept of business model starts to be important with the spread of Internet and its new way of making money. The theme becomes prominent also in Information Systems and Computer Science studies. Authors belonging to this category of research are: Timmers (1998); Mahadevan (2000); Gordijn (2000); Amit and Zott (2001); Papakirikopoulos et al. (2001); Petrovic et al. (2001); Alt and Zimmerman (2001); Applegate (2001); Gordijn et al. (2000, 2001); Rappa (2001); Weill and Vitale (2001); Yu (2001); Afuah and Tucci (2001, 2003); Lam and Harrison-Walker (2003); Pateli and Giaglis (2003); Mansfield (2005); Lambert (2006); Osterwalder (2002, 2004); Osterwalder et al. (2005); Hedman and Kalling (2002); Hsu et al. (2008).

- **Strategic**: as it could be obvious, this is the most populous category since it includes papers which attempt to introduce the business model concept in the already established strategic theories or discussing directly the differences between strategy and business models or exploring the firm sources of value creation. Authors adopting this perspective of discussion are: Linder and Cantrell (2000); Tapscott et al. (2000); Magretta (2002); Chesbrough and Rosenbloom (2002); Mansfield and Fourie (2003); Seddon and Lewis (2003); Yip (2004); Shafer et al. (2005); Morris et al. (2005); Richardson (2005);
Tikkaten et al. (2005); Amit and Zott (2006); Lai et al. (2006); Keen and Quareshi (2006); Makinen and Sepanen (2006, 2007); Ballon (2007); Rasmussen (2007); Verstraete and Jouison-Laffitte (2007, 2009); Casadesus-Masanell and Ricart (2007, 2009); Goethals (2009); Gunzel and Wilker (2009); Johnson et al. (2009); Itami and Nishino (2010); Baden-Fuller and Morgan (2010).

- **Innovation**: this category has a strong linkage with the strategic one but it is preferable to consider it as separate because it has a more recent interest and deals with the importance of renovating the company’s business model in order to survive in the competition. Authors that concentrated their research on this topic are: Hamel (2000); Tucker (2001); Mitchell and Coles (2003); Lemann-Ortega and Schoettl (2005); Leung (2007); Chesbrough (2007, 2010); Johnson and Christensen (2009); Teece (2009); Lindgardt (2009); Zott and Amit (2009); Demil and Lacoq (2010); Doz and Kosonen (2010); Smith et al. (2010); McGrath (2010).

- **Mobile**: this last category is related to our field of interest, where our model will be applied and verified. Authors that applied business model concept to this specific field are: Pigneur (2002); Faber et al. (2003); Camponovo and Pigneur (2003); van de Kar et al. (2003); Vassilopoulou et al. (2003); Leem et al. (2004); Haaker et al. (2004, 2005); Kijl et al. (2005); Kim et al. (2005); Maitland et al. (2005); Ballon and Van Bossuyt (2006); Methlie and Pedersen (2007); Al-Debei and Avison (2008); De Reuver et al. (2009); Ghezzi (2009); Ghezzi, Balocco, and Rangone (2010).

E-Commerce, Strategic, and Innovation business model literature will equally contribute to put the basis for the final framework proposed (see Section 3), that will be applied to the Mobile context taking also into account the Mobile literature analyzed. Anyway it is necessary to underline that there are some authors that are considered as a point of reference for the discussion. Thanks to a Google scholar research, it is possible to identify most cited studies as reported by the histogram (Figure 1.1).

*Figure 1.1: Top 10 studies on business model concept*
According to the research engine, major studies ordered by number of citations are:

1) Amit and Zott (2001): Value creation in e-business;
2) Hamel (2000): Leading the revolution;
5) Chesbrough and Rosenbloom (2002): The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies;
8) Weill and Vitale (2001): Place to space: Migrating to eBusiness Models;

Not surprisingly, nine over ten studies belong to the E-commerce (5) or Strategic (4) field of research while only one (Chesbrough, 2006) is part of the Innovation category and no one to the Mobile, since they constitute more recent and underexplored topics.

1.3) Origins and evolutions of Business Model concept
Business model roots can be traced back earlier than 1998. When defining business model, Magretta (2002) refers to Peter Drucker (1954) questions “who is the customer? And what does the customer value? How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?” Other theoretical foundations of the concept can be found in Bellman et al. (“On the construction of a multi-stage, multi-person business game”, 1957) and Jones (“Educators, Electrons and Business Models: A Problem in Synthesis”, 1960).

Anyway, significant discussion about business model origins is firstly present in Amit and Zott (2001). In the paper “Value Creation in E-Business” the authors present the business model theoretical underpinnings as built upon five strategic theories that are identified as main sources of value creation. These analyzed perspectives are the Value Chain, the Schumpeterian innovation, Resource-based view, Strategic networks, and Transaction cost economics.

- **Porter’s Value Chain** analysis (1985) concentrates on the primary activities having a direct impact on value creation, and support activities affecting value only through their impact on performance of the primary activity. According to Porter, value can be created by differentiation along every step of the value chain, through activities resulting in products and services that lower buyers’ costs or raise buyers’ performance. Drivers of product differentiation that contribute to value creation are policy choices, linkages, timing, location, sharing of activities among business units, learning, integration, scale and institutional factors.

- **Schumpeterian innovation** (1934) views technological development as discontinuous change and disequilibrium resulting from innovation. The authors identify the following sources of innovation that lead to value creation: introduction of new goods or new production methods, the creation of new markets, the discovery of new supply sources, and the reorganization of industries.

- **Resource-based view** of the firm (Penrose 1959; Wernerfelt 1984; Barney 1991; Prahalad and Hamel 1990) views the firm as a collection of resources and capabilities which, adequately marshalled and combined, can create value.
• **Strategic networks** (Gulati, Nohria and Zaheer 2000) are stable inter-organizational ties which are strategically important to participating firms and may take the form of strategic alliances, joint ventures, long-term buyer-supplier partnerships. The appearance of these networks has significantly enhanced the range of possible organizational arrangements for value creation.

• **Transaction costs economics** (Williamson 1979) addresses the question of why firms internalize transactions that might be conducted in markets. According to Williamson, there are some conditions under which transactional inefficiencies may arise. They are bounded rationality, uncertainty and complexity, asymmetric information, and opportunism. Value creation can derive from the attenuation of these constraints and costs reduced by transactions efficiency.

These theories have a strong influence on business model discussion; indeed most of the concepts will be renewed in business model definition or even will be considered as primary business model components. In fact, although the business model literature is diversified, there is one concept on which the authors agree: business models function as important source of value creation.

Anyway, when reasoning about business model, the authors do not always agree on the real contribution of strategic literature. As we have seen, Amit and Zott (2001) recognize the importance of the resource-based theory that is, on the contrary, criticized by others because resources are viewed as static stocks hence unsuitable to explain the dynamic nature of business model. Anyway, as explained by Teece et al. (1997), the criticism on the resource-based view as too a static concept, unable to explain heterogeneous performance has led to the development of the dynamic capabilities view to complement it. Dynamic capabilities explicitly consider the dynamical aspect of resource exploitation. This interpretation does not convince McGrath (2010), who in her “Business Models: A Discovery Driven Approach”, strongly criticizes not only the *dynamic capability* view but also the *industry positioning* view (Porter 1980), previously considered as important business model antecedents (Mansfield and Fourie 2003). She states that the “positioning school has long proposed that what firms need to do to succeed is to find a truly differentiated and defensible position within an industry and execute relentlessly against that position” and regarding the capability school, she adds that it “argues that the advantage stems from having difficult-to copy resources that are often built up over long periods of time”. The problem is thus translated in these
terms: “having selected a position in an industry, it is hard to pluck a firm out and move it to some other position; similarly, after a firm has spent time and effort assembling a compelling resource endowment, order of magnitude shifts are quite difficult”. The argumentation begins here from the observation that business model analysis give a sense of firm in action so the idea moves to a new appreciation of the dynamism of competitive advantage: “we see firms competing to achieve what we might think of as a ‘temporary’ advantage, which they exploit until competition has caught up or markets have changed, at which point, the hunt is on for a new advantage. The business model construct encourages conversations which might help us discern possible early warnings of model weakness and prompt the search for new ones”. Another critic position is taken by McGrath (2010) on the respect of strategic planning (Ansoff 1980; Mintzberg 1994), saying that “as business models themselves evolve and mature, adopting the notion suggests a developing understanding that strategy itself is quite frequently discovery driven rather than planning oriented”.

Other business model antecedents are identified by Richardson (2005). He intends business model as “a conceptual framework that helps to link the firm’s strategy, or theory of how to compete, to its activities, or execution of the strategy” and, in order to improve the understanding of strategy execution, he mentions the studies about organizational design (Nadler and Tushman 1997) and strategy execution processes (Kaplan and Norton 2000, Hrebiniak 2005). In particular the Balanced Scorecard (Kaplan and Norton 2000), thanks to its four perspectives (financial, customer, internal business processes, learning and growth), provides an overall view of the company and facilitates the translation of the business strategy in short-term objectives.

Starting from the above mentioned theoretical background, it is possible to note that the business model concept has benefited from a sort of evolution and it is taking shape the possibility of individuating specific phases. An interesting representation of business models evolution is presented by Pateli and Giaglis (2003) (Figure 1.2). They categorize research on business models in six research sub-domains: Definitions, Components, Taxonomies, Representations, Change Methodologies, and Evaluation Models. These sub-domains are then classified according to integration, that is “the degree to which each sub-domain builds upon research conducted in other domains of the business model area”, and timeliness, that “differentiates between relatively more mature and well-researched sub-domains (Low Timeliness) and those sub-domains that
have emerged more recently and are still perceived by the research community to constitute significant challenges in business model research (High Timeliness)”. This timeliness can be considered as a concept similar to evolution.

Figure 1.2: A Framework for Structuring Business Model Research Sub-Domains

In the Figure 1.2 grey arrows mean that “Change Methodologies are based on: specification of business model Components in order to identify those that are more liable to change; specification of Representation tools that will be used for representing both the current and the new business model, thus indicating the changes made; and identification of the general Taxonomy to which the business model belongs, since this categorization may help identifying changes that are mainly affecting a specific group of business models”. In the same way Components rely on Definitions; Taxonomies on Components, and so on.

In the conclusion of their paper, Pateli and Giaglis (2003) state that they “expect the majority of future research in the area of business models to move towards the upper-right quadrant of the framework”.

In 2005, Osterwalder et al. wrote “Clarifying Business Models: origins, present and future of the concept” proposing five phases in the evolution of business model literature (Table 1.1). As explained by these authors, “during the first phase, when the term business model started to become prominent, a number of authors suggested
business model definitions and classifications. In the second phase, authors started to complete the definitions by proposing what elements belong to a business model. At first, these propositions were simple "shopping lists", just mentioning the components. Only in the third phase did detailed descriptions of these components become available. In a fourth phase, researchers started to model the components conceptually proposing business model meta-models in the form of reference models and ontologies. In this phase models also started to be evaluated or tested more rigorously. Finally, in the ongoing fifth phase, the reference models are being applied in management and IS applications”.

**Table 1.1: Evolution of Business Model concept**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Outcome</th>
<th>Authors</th>
<th>Definitions and taxonomies</th>
<th>“Shopping list” of components</th>
<th>Components as building blocks</th>
<th>Reference models and ontologies</th>
<th>Applications and conceptual tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of BM components</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe BM elements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model BM elements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply BM concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Elaboration from Osterwalder, Pigneur and Tucci, 2005)

The Table 1.1 shows that the authors leave space for further research indeed the column “Applications and conceptual tools” is empty.

Later in 2009, the classification of business model literature is faced by Günzel and Wilker that wrote “Patterns in Business Models: A Case Survey” and defined eight sub-domains:

- **Definition**: concerns defining the purpose, scope, and primary elements of a business model.
- **Components**: concerns with analyzing the business model concept to further decompose it into its fundamental constructs.

- **Taxonomies**: relates to possible categorizations of business models into a number of typologies based on various criteria.

- **Conceptual models**: focus on identifying and describing the relationship between these elements in an abstract but rational way.

- **Design methods**: propose possible instruments or representational formalisms for visualizing the components of a business model and their interrelationships.

- **Adoption factors**: involve research on factors that affect the organizational adoption of business models, as well as research on socio-economic implications of business model innovation.

- **Change Methodologies**: include research efforts that focus on formulating guidelines, describing steps, and specifying actions to be taken for changing business models.

- **Evaluation Models**: concern with identifying criteria for either assessing the feasibility and profitability of business models or assessing a business model against alternative or best practice cases.

It is interesting to note that none of the authors takes into account the discussion related to business models and strategy relationship as a domain of business model literature. This subject plays instead a central role in this work and will be described in details. Furthermore, it is possible to observe that the evolution of business model concept only partially follows a chronological evolution, indeed the definition and classification of business models, the list of business model components and the description of business models elements are overlapping and cyclic activities that is not possible to order. As observed by many authors, “researchers do not rely on each others work and findings extensively” (Osterwalder et al. 2005) and “there is no work that manages to synthesize all sub domains into a thorough and comprehensive analysis of business models.” (Günzel and Wilker 2009).

This is the reason why it seems useful to represent business model evolution by taking into account research blocks rather than specific domains in a chronological order (Figure 1.3).

*Figure 1.3: The Business Model Evolution*
BM underpinnings:
- Value chain/systems
- Resource based theory
- Strategic network theory
- Transaction cost economics
- Organizational design
- Strategy execution processes

BM literature:
- Definitions
- Components and constructs
- Taxonomies
- Reference models and ontologies
- Design methods

BM open issues:
- Relationship with strategy
- Change methodologies
- Evaluation models
- Innovation and experimentation
- Managerial role

(Source: original elaboration)
Section 2

2) LITERATURE CRITICAL ANALYSIS

The core part of this work is constituted by a comprehensive literature analysis. The research of documents potentially suitable for being analyzed was carried out by key words on Internet research engines.

Here a list of key words used:

- “business models”
- “business model evolution”
- “business model antecedents”
- “business model underpinnings”
- “business model and strategy”
- “business models and processes”
- “business model innovation”
- “business model change”
- “business model experimentation”
- “business model components”
- “business model and sources of value”
- “business model critical choices”
- “modelling choices”
- “business model design”
- “business model design parameters”
- “business model taxonomies”
- “open business model”
- “business model lifecycle”
- “business model and entrepreneurship”
- “business model and managerial leadership”
- “business model mistakes”
- “Mobile business models”
- “revisiting Mobile business models”
- “business model and Mobile operators strategic moves”

The above mentioned key words were inserted in the research engine of different websites, in particular scientific online libraries and publishing groups. They provide a direct access to: journals of management, economics, electronics, and telecommunications; business or consulting articles; works of thesis; and books. The list of main sources used is the following:

- Wiley Online Library (onlinelibrary.wiley.com)
- Science Direct (www.sciencedirect.com)
- Elsevier (www.elsevier.com)
- Google scholar (scholar.google.com)
- Google books (books.google.com)
- Emerald (www.emeraldinsight.com)
This research allowed to collect more than 200 works within which, after a careful reading, a sample of 82 was selected. The main criteria adopted in order to reject the works are opposite: first there is a group of articles that have been discarded because they do not provide significant contributions to previous literature considered in the sense that they were already included in other most comprehensive studies or they limited themselves to comment others’ discussions without providing something new. Second there are some papers that provide business model definitions and components explanations that are specific to a certain industry thus they loose their importance because it is not possible to generalize them. Furthermore the impact factor, reflecting the average number of citations to articles published in science and journals, has been considered both for the article and the journal itself in order to take into account the most relevant ones with a focus on most cited on one hand and most recent on the other.

The analysis of the 82 selected works is reported in the Annex 1. It has been conducted on the basis of a scheme that aims to facilitate the comparison of authors’ reasoning about business models. The scheme builds the foundations for further work of elaboration of discussed topics and for business model unified framework formation.

The factors taken into account by the classification scheme are the following:

1) **Research question**: the starting point of every article, where the author synthesizes the research objectives in terms of open questions to be addressed. It could be expressed either by one or more questions to which the article aims to answer or by an explicit sentence.

2) **Literature background**: the part that makes reference to literature studies previous than that of the author under analysis. It could be composed by the list of the authors taken into account in the article (ex: BM definitions: Timmers 1998, Eriksson and Magnus 2000, Scott Morton 1991…), the more general managerial theme to which the discussion makes reference (ex: value chain analysis, Schumpeterian innovation, resource-based view…) or simply by some consideration about the current state of the debate (ex: the literature is not
consistent because…, there are a lot of different definitions of BM but none appear to be generally accepted…).

3) **Methodology**: it refers to the type of research conducted in order to collect empirical data, which could be just qualitative (conceptual paper) or be supported also by quantitative analysis on real world companies. In any case, references to case studies and real world examples are mentioned.

4) **Business Model definition**: the block that reports the author’s definition of the term “business model”. It could include a synthetic sentence or a deeper explanation of the concept. It’s not common to all scholars first to define the concept of business model and then reasoning about it, this is why some definitions are missing (sometimes this happens because the scholar relies on previous definitions). 2.1 will be a section entirely dedicated to this topic that is central to the work and deserves a careful discussion.

5) **Business Model construct**: the part that defines the list of the business model components (also called functions, pillars, building blocks, design parameters…), their definitions and, according to the author, it could also include an explanation of their relationships. Some considerations related to the steps necessary to build the business model and, where no construct is presented, the existing types of business models (taxonomy) as intended by the writer are also reported. As in the case of business model definition, also this topic is fundamental to the work thus section 2.2 will be dedicated to exploring business model components and their significance.

6) **Business Model – Strategy relationship**: answers to the questions “which are the differences between business model and strategy?”, and “how are business model and strategy theoretically and operationally connected?”. Such relationship could be explicitly presented and listed or being implicitly inserted in a broader discussion. The two concept are closely intertwined because they both deals with creating and capturing value but from different perspectives. This is the reason why they are not complete per se but complementary. Anyway this theme appears to be central because some authors consider it as an open issue and this is the reason why it will be deeply treated in section 2.4.
7) **Relationship between Business Model and other theories/constructs:** here concepts other than strategy are taken into account in order to find specific relationships with the business model and its sustainability. Most common theories discussed by the authors are: innovation, experimentation, organizational leadership, imitation, and integration. Since their importance is underlined several times, the issue will be part of a dedicated section (2.5).

8) **Arguments and conclusions:** this wrap-up part has two alternative functions: if every interesting part of the article under analysis has been classified, it reports a brief summary of the key concepts; if something has to be mentioned yet, it adds the new concepts (often they are related to future research study or open discussions).

### 2.1) Business Model Definitions

Defining business models is one of the main objectives of this work and is also a priority because of the growing popularity that the term is enjoying not only in common speech but also in strategic and economic press. The concept is even associated to adjectives like “trendy” (Goethals, 2009) and “fashionable” (Gunzel, 2009) so there is a real risk that the confusion about the term takes over. This paragraph aims to underline the most important and recognized business models definitions, while a complete and exhaustive overview of all the definitions analyzed is presented in the classification scheme (Annex1, Table A.2). The definitions are here grouped according to the four categories illustrated in the Section 1.2. It will be possible to observe that not all the authors give a precise definition of what a business model is (i.e. a conceptual tool, an architecture, a method, a representation...), rather they often define it according to its components (e.g. “A business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”, as found in Amit and Zott, 2001).

As regards the *E-commerce* literature category, first it is fundamental to mention Timmers’ (1998) view of business models that is defined as: “An architecture for the product, service and information flow, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; and a description of the sources of revenues”. Even if this definition is quite abstract and focused on business actor and network aspects, it is the first significant contribution to clarify the concept. Timmers adds to this definition the necessity for a
marketing model in regards to the process of building competitive advantage in the networked economy. The components are not described in detail but, as will be illustrated in the section dedicated to taxonomies (2.3), the author prefers to focus on proposing an e-business model classification.

Another definition included in this category is presented by Rappa in 2001: “A business model is the method of doing business by which a company can sustain itself, that is generate revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain”. Here the financial element is dominant; even if the value chain component is mentioned; the business model is reduced to a mere revenue and profit model. Also in this case, business model classification is the primary aim of the author that does not provide a description of which elements compose the model.

A more complete definition belongs to Osterwalder (2004), that in his work of thesis explains that: “A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company’s logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams”. The author discusses also the business model elements in a detailed dissertation, providing the so called Business Model Ontology that is reported in the Figure 2.1:

*Figure 2.1: Business Model Ontology*

(Source: Osterwalder, 2004)
Concerning the category called Strategic, an interesting study has been conducted by Hamel (2000). According to the author “a business model is simply a business concept that has been put into practice”. He identifies four main business model components that range from core strategy, strategic resources over value network to customer interface. These components are related to each other thanks to bridges (customer benefits, configuration, and company boundaries) and are decomposed into different sub-elements as the Figure 2.2 shows. The main contribution of this methodology is a view of the overall picture of a firm.

*Figure 2.2: Business model components*

One of the most representative definitions is provided by Magretta (2002): “Business models are heart stories that explain how enterprises work. They answer to Peter Drucker’s age-old questions: Who is the customer? What does the customer value? How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?”.

In this context is impossible not to mention Chesbrough and Rosenbloom (2002) idea of the business model that, together with the explanation of business model functions, is one of the most quoted by other authors: “Business model provides a coherent framework that takes technological characteristics and potentials as inputs, and converts them through customers and markets into economic outputs. It is thus conceived as a focusing device that mediates between technology development and economic value creation.” The functions of the model, as intended by the author, are:

- to articulate the *value proposition*;
- to identify a *market segment*;
- to define the structure of the *value chain* within the firm;
to estimate the cost structure and profit potential of producing the offering;
• to describe the position of the firm within the value network linking suppliers and customers;
• to formulate the competitive strategy.

According to the authors the business model is a cognitive map across two domains: the technical domain as input and the economic domain as output. (Figure 2.3):

*Figure 2.3: Business model as a cognitive map across technical and economic domains*

![Diagram of business model as a cognitive map across technical and economic domains]

(Source: Chesbrough, 2003)

Another definition belonging to the strategic category of business model literature is proposed by Shafer, Smith, and Linder (2005) stating that: “The business model is a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network.” In this definition core logic is the key term and suggests that a properly crafted business model helps articulate and make explicit key assumptions about cause-and-effect relationships and the internal consistency of strategic choices. The terms creating and capturing value reflect two fundamental functions that all organizations must perform to remain viable over an extended period of time. Successful firms create substantial value by doing things in ways that differentiate them from the competition.

If we move to the Innovation section, we find Teece’s (2009) discussion stating that: “Business model describes the design or architecture of the value creation, delivery, and capture mechanisms it employs. The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.” According to his
idea, in order to create value for customers, entice payments, and convert payments to profit, it is necessary to develop specific business model design elements.

In the issue dedicated to the business models by the Long Range Planning, Smith, Binns and Tushman (2010) write about complex business model and strategic paradoxes, defining the former in the following way: “business model means the design by which an organization converts a given set of strategic choices - about markets, customers, value propositions - into value, and uses a particular organizational architecture - of people, competencies, processes, culture and measurement systems - in order to create and capture this value.”

Their colleagues, Demil and Lecocq (2010), associate business model to the search of dynamic consistency and specifies that “The concept of business model refers to the description of the articulation between different components or ‘building blocks’ to produce a proposition that can generate value for consumers and thus for the organization.” Their view takes influences from the Penrosian view of the firm (Penrose, 1959), indeed they represent the business model as an adaptation of RCOV model – resources, competencies, organization, and value proposition – (Figure 2.4).

Figure 2.4: RCOV framework

(Source: Demil and Lecocq, 2010)
They add that the concept can be used at different levels, which are equally important. At an abstract and conceptual level, the business model refers to generic representations that can be applied in multiple sectors. But the business model concept can also refer to real world instances and to the study of the models implemented by concrete organizations. At the individual level of analysis, each organization’s own specific business model is linked to a more generic business model. Furthermore the authors conceive of the business model as the way an organization operates to ensure its sustainability.

As regards the forth category defined in the business model research literature section, i.e. the Mobile, a comprehensive critical analysis of definitions is presented later in the section 2.7.3.

2.2) Business Model Components

As it is evident from the previous section, though different definitions exist, there are recurrent elements in business model. The concepts of value proposition, value creating and capturing, and business networks are identified by most of authors as part of the business model construct. Anyway, thanks to the consistent literature that constitutes the basis of this work, it is possible to have an overview of all terms indicated as business model components during the years. The scope consists here in evaluating item frequency and significance in order to build the foundations and draw considerations that are essential for the future work of business model framework unification. It will be also possible to show that, since the authors consider different level of details, they often refer to the same element but simply call it differently.

A similar work of clarification has been done by Shafer et al. (2005) in “The power of business models”, where they identified 12 definitions and related 42 different business model components as shown by the Table 2.1:

Table 2.1: Components of a business model
They developed an affinity diagram (Pyzdek 2003) to categorize those that were cited twice or more. Repetition elimination is a necessary step in order to have a simplified and clearer view, and thus to begin the process of framework definition. Anyway in our case, having more than 100 business model elements, is unfairly complex to draw a crossed table similar to Shafer et al. (2005). What is feasible is to list all business model components as indicated by the authors and to order them on the basis of the frequency. Significance is instead evaluated by considering macro components rather than subcomponents. Table 2.2 reports the different business model constructs and specifies the literature category to which the author belongs (E-commerce, Strategic, or Innovation).

**Table 2.2: Business model components analysis**

<table>
<thead>
<tr>
<th>Authors and year</th>
<th>#</th>
<th>Components</th>
<th>Literature category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well and Vitalle (2001)</td>
<td>X</td>
<td>E-Business</td>
<td>Strategy</td>
</tr>
<tr>
<td>Dubosson-Turley et al. (2002)</td>
<td>X</td>
<td>E-Business</td>
<td>Strategy</td>
</tr>
<tr>
<td>Magnette et al. (2002)</td>
<td>X</td>
<td>E-Business</td>
<td>Strategy</td>
</tr>
<tr>
<td>Van Der Vorst et al. (2002)</td>
<td>X</td>
<td>E-Business</td>
<td>Strategy</td>
</tr>
</tbody>
</table>

(Source: Shafer et al., 2005)
<table>
<thead>
<tr>
<th>Authors and year</th>
<th>#</th>
<th>Components</th>
<th>Literature category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timmers (1998)</td>
<td>4</td>
<td>Product, service and information flows&lt;br&gt;Business actors and roles&lt;br&gt;Actors potential benefits&lt;br&gt;Revenues sources</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Hamel (2000)</td>
<td>4</td>
<td>Customer interface&lt;br&gt;Core strategy&lt;br&gt;Strategic resource&lt;br&gt;Value network</td>
<td>Innovation</td>
</tr>
<tr>
<td>Linder &amp; Cantrell (2000)</td>
<td>7</td>
<td>Pricing model&lt;br&gt;Revenue model&lt;br&gt;Channel model&lt;br&gt;Commerce process model&lt;br&gt;Internet-enabled commerce relationship&lt;br&gt;Organizational form&lt;br&gt;Value proposition</td>
<td>Strategic</td>
</tr>
<tr>
<td>Mahadevan (2000)</td>
<td>3</td>
<td>Value stream&lt;br&gt;Revenue stream&lt;br&gt;Logistical stream</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Amit &amp; Zott (2001)</td>
<td>3</td>
<td>Transaction content&lt;br&gt;Transaction structure&lt;br&gt;Transaction governance</td>
<td>Strategic</td>
</tr>
<tr>
<td>Papakirikopoulos et al. (2001)</td>
<td>4</td>
<td>Coordination&lt;br&gt;Cooperation&lt;br&gt;Customer value&lt;br&gt;Core competence</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Petrovic et al. (2001)</td>
<td>7</td>
<td>Value model&lt;br&gt;Resource model&lt;br&gt;Production model&lt;br&gt;Customer relations model&lt;br&gt;Revenue model&lt;br&gt;Capital model&lt;br&gt;Market model</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Alt &amp; Zimmerman (2001)</td>
<td>6</td>
<td>Mission&lt;br&gt;Structure&lt;br&gt;Processes&lt;br&gt;Revenues&lt;br&gt;Legal issues&lt;br&gt;Technology</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Authors and year</td>
<td>#</td>
<td>Components</td>
<td>Literature category</td>
</tr>
<tr>
<td>-----------------</td>
<td>----</td>
<td>------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Weill &amp; Vitale (2001)</td>
<td>4</td>
<td>Strategic objectives and value proposition, Sources of revenues, Critical success factors, Core competencies</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Afuah &amp; Tucci (2001)</td>
<td>8</td>
<td>Customer value, Scope, Pricing, Revenue sources, Connected activities, Implementation, Capabilities, Sustainability</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Yu (2001)</td>
<td>15</td>
<td>Markets, Customers, Products, Services, Assets, Costs, Prices, Promotion, Distribution, Revenues, Profits, Market share, Economic scale, Marketing strategies, Competitive advantage</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Gordijn et al. (2001)</td>
<td>9</td>
<td>Actor, Value object, Value port, Value interface, Value exchange, Value offering, Market segment, Composite actor, Value activity</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Magretta (2002)</td>
<td>5</td>
<td>Who is the customer? What does the customer value? How do we make money in this business? What is the underlying economic logic? How to deliver value at an appropriate cost?</td>
<td>Strategic</td>
</tr>
<tr>
<td>Authors and year</td>
<td>#</td>
<td>Components</td>
<td>Literature category</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Chesbrough &amp; Rosenbloom</td>
<td>6</td>
<td>Value proposition, Market segment, Value chain, Cost structure and profit potential, Value network, Competitive strategy</td>
<td>Innovation</td>
</tr>
<tr>
<td>(2002)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osterwalder (2002)</td>
<td>9</td>
<td>Value proposition, Target customer, Distribution channel, Relationship, Value configuration, Capability, Partnership, Cost structure, Revenue model</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Osterwalder (2004)</td>
<td>9</td>
<td>Value proposition, Target customer, Distribution channel, Customer interface, Value configuration, Capability, Partnership, Cost structure, Profit potential</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Authors and year</td>
<td>#</td>
<td>Components</td>
<td>Literature category</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Yip (2004)</td>
<td>9</td>
<td>Value proposition, Nature of inputs, How to transform inputs (incl. technology), Nature of outputs, Vertical scope, Horizontal scope, Geographic scope, Nature of customers, How to organise</td>
<td>Strategic</td>
</tr>
<tr>
<td>Shafer et al. (2005)</td>
<td>4</td>
<td>Strategic choices, Value network, Create value, Capture value</td>
<td>Strategic</td>
</tr>
<tr>
<td>Richardson (2005)</td>
<td>3</td>
<td>Value proposition, Value creation and delivery system, Value capture</td>
<td>Strategic</td>
</tr>
<tr>
<td>Tikkaten et al. (2005)</td>
<td>4</td>
<td>Strategy and structure, Business network, Operations, Finance and accounting</td>
<td>Strategic</td>
</tr>
<tr>
<td>Mansfield (2005)</td>
<td>7</td>
<td>Economic innovativeness, Macroeconomic positioning, Value creation potential, Market exploitability, Customer centricity, Intermediation, Technology infrastructure management</td>
<td>E-commerce</td>
</tr>
<tr>
<td>Morris et al. (2005)</td>
<td>6</td>
<td>Offering factors, Market factors, Internal capability factors, Competitive strategy, Economic factors, Personal/investor factors</td>
<td>Strategic</td>
</tr>
<tr>
<td>Lehmann-Ortega &amp; Schoettl (2005)</td>
<td>3</td>
<td>Value proposition, Value architecture, Revenue model</td>
<td>Innovation</td>
</tr>
<tr>
<td>Rasmussen (2007)</td>
<td>5</td>
<td>Who are the customers, What do they value, How that value can be delivered, Which is the appropriate cost, How the business deploys its assets</td>
<td>Strategic</td>
</tr>
<tr>
<td>Authors and year</td>
<td>#</td>
<td>Components</td>
<td>Literature category</td>
</tr>
<tr>
<td>-----------------</td>
<td>---</td>
<td>------------</td>
<td>---------------------</td>
</tr>
</tbody>
</table>
| Verstraete & Jouison-Laffitte (2007) | 3 | Value generation  
Value remuneration  
Value division | Strategic |
| Teece (2009) | 3 | Value creation  
Value delivery  
Value capture | Innovation |
| Casadesus-Masanell & Ricart (2009) | 2 | Choices  
Consequences | Strategic |
| Zott & Amit (2009) | 4 | Trans content, structure and governance  
Set of activities  
Technological inputs and economic outputs  
Value chain | Strategic |
| Johnson & Christensen (2009) | 4 | Customer value proposition  
Profit formula  
Key resources  
Key processes | Strategic |
| Goethals (2009) | 6 | Execution model  
Control model  
Offering model  
Compensation model  
Customer relations model  
Inter-organizational model | Strategic |
| Ghezzi (2009) | 3 | Value proposition  
Value network  
Financial configuration | Strategic |
| Lindgardt et al. (2009) | 2 | Value proposition  
Operating model | Innovation |
| Gunzel & Wilker (2009) | 3 | Transaction content  
Transaction structure  
Transaction governance | Strategic |
| Itami & Nishino (2010) | 2 | Business system  
Profit model | Strategic |
| Smith et al. (2010) | 3 | Strategic choices  
Value  
Organizational architecture | Innovation |
| McGrath (2010) | 2 | Unit of business  
Process or operational advantages | Innovation |
The number of components of the 40 constructs analyzed vary from a minimum of two (10% of cases) to a maximum of 15 (2.5% of cases). All the cases ranging from two and fifteen components (horizontal axis) are reported by the histogram (Figure 2.5). As it shows, there is a pick on three components (27.5% of the total cases) and also four accounts for a significant 20% followed by six (12.5%), nine (10%), and two (10%).

*Figure 2.5: Frequency of number of components in the constructs analyzed*
The aim is now to investigate which are the most and the least mentioned elements in order to have an idea of priority identified by the authors in the process of business modelling (Table 2.3).

Table 2.3: Business model components ordered by # of references

<table>
<thead>
<tr>
<th>Component</th>
<th># of references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value proposition</td>
<td>13</td>
</tr>
<tr>
<td>Revenue (model, stream)</td>
<td>8</td>
</tr>
<tr>
<td>Customer value</td>
<td>6</td>
</tr>
<tr>
<td>Customers</td>
<td>6</td>
</tr>
<tr>
<td>Costs and cost structure</td>
<td>6</td>
</tr>
<tr>
<td>Value network</td>
<td>5</td>
</tr>
<tr>
<td>Activities (connected, key)</td>
<td>5</td>
</tr>
<tr>
<td>Strategy (core, competitive)</td>
<td>4</td>
</tr>
<tr>
<td>Resources (strategic, key, model)</td>
<td>4</td>
</tr>
<tr>
<td>Organization (form, structure, architecture)</td>
<td>4</td>
</tr>
<tr>
<td>Capability</td>
<td>4</td>
</tr>
<tr>
<td>Offering (value, model, factors)</td>
<td>4</td>
</tr>
<tr>
<td>Channel (model, distribution)</td>
<td>3</td>
</tr>
<tr>
<td>Transaction content</td>
<td>3</td>
</tr>
<tr>
<td>Transaction structure</td>
<td>3</td>
</tr>
<tr>
<td>Transaction governance</td>
<td>3</td>
</tr>
<tr>
<td>Competencies</td>
<td>3</td>
</tr>
<tr>
<td>Technology</td>
<td>3</td>
</tr>
<tr>
<td>Sources of revenues</td>
<td>3</td>
</tr>
<tr>
<td>Market model</td>
<td>2</td>
</tr>
<tr>
<td>Product</td>
<td>2</td>
</tr>
<tr>
<td>Service</td>
<td>2</td>
</tr>
<tr>
<td>Customer interface</td>
<td>2</td>
</tr>
<tr>
<td>Pricing and pricing model</td>
<td>2</td>
</tr>
<tr>
<td>Relationship</td>
<td>2</td>
</tr>
<tr>
<td>Customer relations model</td>
<td>2</td>
</tr>
<tr>
<td>Mission</td>
<td>2</td>
</tr>
<tr>
<td>Structure</td>
<td>2</td>
</tr>
<tr>
<td>Processes</td>
<td>2</td>
</tr>
<tr>
<td>What does the customer value?</td>
<td>2</td>
</tr>
<tr>
<td>Value chain</td>
<td>2</td>
</tr>
<tr>
<td>Value configuration</td>
<td>2</td>
</tr>
<tr>
<td>Strategic choices</td>
<td>2</td>
</tr>
<tr>
<td>Value creation</td>
<td>2</td>
</tr>
<tr>
<td>Value capture</td>
<td>2</td>
</tr>
<tr>
<td>Value delivery</td>
<td>2</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Market segment</td>
<td>2</td>
</tr>
<tr>
<td>Information</td>
<td>1</td>
</tr>
<tr>
<td>Business actors</td>
<td>1</td>
</tr>
<tr>
<td>actors potential benefits</td>
<td>1</td>
</tr>
<tr>
<td>Commerce process model</td>
<td>1</td>
</tr>
<tr>
<td>Value stream</td>
<td>1</td>
</tr>
<tr>
<td>Logistical stream</td>
<td>1</td>
</tr>
<tr>
<td>Coordination</td>
<td>1</td>
</tr>
<tr>
<td>Cooperation</td>
<td>1</td>
</tr>
<tr>
<td>Value model</td>
<td>1</td>
</tr>
<tr>
<td>Production model</td>
<td>1</td>
</tr>
<tr>
<td>Capital model</td>
<td>1</td>
</tr>
<tr>
<td>Legal issues</td>
<td>1</td>
</tr>
<tr>
<td>Strategic objectives</td>
<td>1</td>
</tr>
<tr>
<td>Critical success factors</td>
<td>1</td>
</tr>
<tr>
<td>Scope</td>
<td>1</td>
</tr>
<tr>
<td>Implementation</td>
<td>1</td>
</tr>
<tr>
<td>Sustainability</td>
<td>1</td>
</tr>
<tr>
<td>Assets</td>
<td>1</td>
</tr>
<tr>
<td>Promotion</td>
<td>1</td>
</tr>
<tr>
<td>Market share</td>
<td>1</td>
</tr>
<tr>
<td>Economic scale</td>
<td>1</td>
</tr>
<tr>
<td>Marketing strategies</td>
<td>1</td>
</tr>
<tr>
<td>Competitive advantage</td>
<td>1</td>
</tr>
<tr>
<td>Value object</td>
<td>1</td>
</tr>
<tr>
<td>Value port</td>
<td>1</td>
</tr>
<tr>
<td>Value interface</td>
<td>1</td>
</tr>
<tr>
<td>Value exchange</td>
<td>1</td>
</tr>
<tr>
<td>How do we make money in this business?</td>
<td>1</td>
</tr>
<tr>
<td>What is the underlying economic logic?</td>
<td>1</td>
</tr>
<tr>
<td>Competitors</td>
<td>1</td>
</tr>
<tr>
<td>Suppliers</td>
<td>1</td>
</tr>
<tr>
<td>Nature of inputs</td>
<td>1</td>
</tr>
<tr>
<td>Nature of outputs</td>
<td>1</td>
</tr>
<tr>
<td>Vertical scope</td>
<td>1</td>
</tr>
<tr>
<td>Horizontal scope</td>
<td>1</td>
</tr>
<tr>
<td>Geographic scope</td>
<td>1</td>
</tr>
<tr>
<td>Operations</td>
<td>1</td>
</tr>
<tr>
<td>Finance and accounting</td>
<td>1</td>
</tr>
<tr>
<td>Economic innovativeness</td>
<td>1</td>
</tr>
<tr>
<td>Macroeconomic positioning</td>
<td>1</td>
</tr>
<tr>
<td>Intermediation</td>
<td>1</td>
</tr>
</tbody>
</table>
The Table 2.3 allows to draw some observations:

- Only 19 of the almost 100 components have a certain degree of frequency, which is considered a proxy of significance (number of references more or equal to three).

- The analysis confirms the importance given to the Value Proposition and Revenues – referring both to revenue models and streams –. The former constitutes the mean by which the company offers its proposal to the target customers and the latter attests the necessity to capitalize the value created and delivered.

- Customer and customer value are positioned as third and fourth witnessing the customer-centricity that characterize the business model.
From position six to eleven (except from strategy) we find the elements that contribute to value creation, that are value network, activities, resources, organization, and capabilities.

The fact that the Revenues account for the second position while the elements of value creation are positioned after, could be also considered as a countersense because in reality the company procedure expects to plan how value is created/delivered and only after how it is translated into turnover. However, this reflect the widespread focus on the quantifiable concept of cost and revenue rather than value.

In general, the term Value appears 50 times and is associated with different terms – proposition, network, chain, stream, offering, exchange, configuration, creation, capturing, architecture, and many others -. For this reason it represents the core concept of the business model and will be investigated better in the next paragraph (2.2.1).

Strategy – is it core or competitive – places eighth underling a strong relationship with the business model. It is also often used as an attribute (e.g. strategic resources/choices/objectives). The issue will be treated in detail in the section 2.4.

Elements that account only for 1 or 2 references (more that 52% of the total components) are not excluded from being part of the business model concept. They may represent higher level of analysis – thus being included in other components – or just referring to similar concept but using different words. This observation will be on the basis of the unified framework presented in section 3.

2.2.1) From dual nature to different meanings of Value

The activity of a company is based on economic exchanges with company stakeholders. These exchanges must result in the parties involved receiving an “incremental utility”. Hence, there must be a transmission (exchange) of value. This exchange becomes a (positive or negative) variation of economic value for the company. For these reason the value shows a dual nature and the economic exchange is bidirectional (Figure 2.6):
- the company supplies the customer with a value, through its own product/service;
- the customer contributes toward increasing a company’s economic value.

**Figure 2.6: Duality of value**

| Company | Value | Customer |

On the basis of this simplified view of the company-customer relationship, it is possible to demonstrate that value assumes very different meanings according to its function and this will be reflected by the business model construct.

The systemic view of the company is enjoying more and more importance with the development of the digital economy (Busacca 2004). In 1999 Sawhney already represented this concept (Figure 2.7) including in the value perspective a third element that is the partner network and identifying six different value meanings: value proposition, value communication, value creation, value sharing, value increasing, and value distribution.

**Figure 2.7: Value meanings**

(Source: adapted from Sawhney, 1999)

Even if the above representation adopts a Marketing perspective, it clearly depicts the different faces of Value. Another comprehensive representation, also based on a Marketing view, is provided by Kotler et al. (2002) (Figure 2.8).

**Figure 2.8: Formulating a market renewal strategy**
It identifies three activities related to value:

1) *Value exploration*: how can a company identify new value opportunities?

2) *Value creation*: how can a company efficiently create more promising new value offerings?

3) *Value delivery*: how can a company use its capabilities and infrastructure to deliver the new value offerings more efficiently?

On the basis of these representations it is possible to conclude that Value represents a transversal concept embracing the three main participants to business system: the company, the customer, and the business network. For each of them, it addresses specific issues, i.e. customer value, value proposition and offering for the customer; economic value, value model, value capturing mechanisms, and value division for the company; value creation, sharing, and delivery for the business network.

### 2.3) Business Model Taxonomies

During the years many authors provide a number of taxonomies, or business models classification, where they describe business models according to common characteristics. It is important to take into account these taxonomies because they contributed to business model design evolution theory, by representing concretizations of business model concept, where the effort aims to “simplifying” rather than
“abstracting” the concepts. Taxonomies show that in most of the cases the business model concept can be associated to electronic commerce, so they will be useful when applying and testing the work to Mobile market, that is a form of Internet commerce. Furthermore, as explained by Lambert (2006) in her “Do We Need a ‘Real’ Taxonomy of e-Business Models?”, the classification of objects within the research domain has a recognized importance in all forms of scientific research, because it organises objects according to their place within the problem domain and depicts the relationships existing between them.

The best known classification of electronic business models belongs to Timmers (1998) that not only distinguishes between eleven generic e-business models (Table 2.4).

Table 2.4: Timmers’ architecture of business models (1998)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Shops</td>
<td>Stands for the Web marketing and promotion of a company or a shop and increasingly includes the possibility to order and to pay.</td>
</tr>
<tr>
<td>e-Procurement</td>
<td>Describes electronic tendering and procurement of goods and services.</td>
</tr>
<tr>
<td>e-Malls</td>
<td>Stands for the electronic implementation of the bidding mechanism also known from traditional auctions.</td>
</tr>
<tr>
<td>e-Auctions</td>
<td>Consists of a collection of e-shops, usually enhanced by a common umbrella, for example a well-known brand.</td>
</tr>
<tr>
<td>Virtual Communities</td>
<td>This model brings together virtual communities that contribute value in a basic environment provided by the virtual community operator. Membership fees and advertising generate revenues. It can also be found as an add-on to other marketing operations for customer feedback or loyalty building.</td>
</tr>
<tr>
<td>Collaboration platforms</td>
<td>Companies of this group provide a set of tools and information environment for collaboration between enterprises.</td>
</tr>
<tr>
<td>Third-party marketplaces</td>
<td>A model that is suitable when a company wishes to leave the Web marketing to a 3rd party (possibly as an add-on to their other channels). Third-party marketplaces offer a user interface to the supplier's product catalogue.</td>
</tr>
<tr>
<td>Value chain integrators</td>
<td>Represents the companies that focus on integrating multiple steps of the value chain, with the potential to exploit the information flow between those steps as further added value.</td>
</tr>
<tr>
<td>Value chain service providers</td>
<td>Stands for companies that specialize on a specific function for the value chain, such as electronic payment or logistics.</td>
</tr>
</tbody>
</table>
Information brokers Embraces a whole range of new information services that are emerging to add value to the huge amounts of data available on the open networks or coming from integrated business operations.

Trust and other services Stands for trust services, such as certification authorities and electronic notaries and other trusted third parties.

He also classifies them according to the degree of innovation, ranging from lower to higher, and the degree of integration, ranging from single function to multiple functions/integrated (Figure 2.9).

E-Shop and Value Chain Integrator business models represent the two extreme situations.

Figure 2.9: Classification scheme

Another taxonomy was proposed by Bambury in 1998, that identified 2 macro-categories and 15 subcategories. First one is called Translated real-world business models and includes mail-order, advertising-based, subscription, free trial, direct marketing, real estate, incentive scheme, B2B, and combinations of these models. Second category is Native Internet business models and contains library, freeware,
information barter, digital products and digital delivery, access provision, Website hosting and other models.

A similar research work did Tapscott et al. (2000) that proposed a network- and value-centered taxonomy that distinguishes between five types of value networks, called business webs (b-webs) (Table 2.5) and classified them according to the degree of economic control, ranging from hierarchical to self-organizing, and value integration, ranging from low to high (Figure 2.10).

Table 2.5: Tapscott et al.'s taxonomy of b-webs (2000)

<table>
<thead>
<tr>
<th>Type of b-web</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agora</td>
<td>Applies to markets where buyers and sellers meet to freely negotiate and assign value to goods. An Agora facilitates exchange between buyers and sellers, who jointly &quot;discover&quot; a price. Because sellers may offer a wide and often unpredictable variety or quantity of goods, value integration is low.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>In Aggregation b-webs there is a leader that takes responsibility for selecting products and services, targeting market segments, setting prices, and ensuring fulfilment. This leader typically sets prices in advance and offers a diverse variety of products and services, with zero to limited value integration.</td>
</tr>
<tr>
<td>Value Chain</td>
<td>In a Value Chain, the so-called context provider structures and directs a b-web network to produce a highly integrated value proposition. The seller has the final say in pricing.</td>
</tr>
<tr>
<td>Alliance</td>
<td>An Alliance strives for high value integration without hierarchical control. Its participants design goods or services, create knowledge, or simply produces dynamic, shared experiences. Alliances typically depend on rules and standards that govern interaction, acceptable participant behaviour, and the determination of value.</td>
</tr>
<tr>
<td>Distributive Network</td>
<td>Distributive Networks are b-webs that keep the economy alive and mobile. They play a vital role in ensuring the healthy balance of the systems that they support. Distributive Networks service the other types of b-webs by allocating and delivering goods.</td>
</tr>
</tbody>
</table>

Figure 2.10: b-webs classification
Later in 2001, Applegate classifies digital business models in four categories and provide examples for each one:

*Table 2.6: Applegate’s business model categories (2001)*

<table>
<thead>
<tr>
<th>Business model category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focused distributor models</strong></td>
<td>Retailer, Marketplace, Aggregator, Infomediary, Exchange</td>
</tr>
<tr>
<td><strong>Portal models</strong></td>
<td>Horizontal Portals, Vertical Portals, Affinity Portals</td>
</tr>
<tr>
<td><strong>Producer models</strong></td>
<td>Manufacturer, Service Provider, Educator, Advisor, Information and news services, Custom Supplier</td>
</tr>
<tr>
<td><strong>Infrastructure provider models</strong></td>
<td>Infrastructure portals</td>
</tr>
</tbody>
</table>

Rappa (2001) classifies business models observable on the webs according to nine basic categories and related subgroups. The author specifies that “the proposed taxonomy is not meant to be exhaustive or definitive. Internet business models continue to evolve. New and interesting variations can be expected in the future.”

*Table 2.7: Rappa’s nine categories of web business models (2001)*

<table>
<thead>
<tr>
<th>Type of model</th>
<th>Sub-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-organizing</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hierarchical</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
</tr>
<tr>
<td><strong>VALUE INTEGRATION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Tapscott, 2000)
<table>
<thead>
<tr>
<th>Model Type</th>
<th>Key Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brokerage model</td>
<td>Marketplace Exchange, Buy/Sell Fulfilment, Demand Collection System, Auction Broker, Transaction Broker, Distributor, Search Agent, Virtual Marketplace.</td>
<td>They bring buyers and sellers together and facilitate transactions. Usually, a broker charges a fee or commission for each transaction it enables.</td>
</tr>
<tr>
<td>Advertising model</td>
<td>Portal Classifieds, User Registration, Query-based Paid Placement, Contextual Advertising / Behavioural Marketing, Content-Targeted Advertising, Intromercials, Ultramercials.</td>
<td>The broadcaster, in this case a web site, provides content (usually for free) and services (like email, chat, forums) mixed with advertising messages in the form of banner ads. The banner ads may be the major or sole source of revenue for the broadcaster. The broadcaster may be a content creator or a distributor of content created elsewhere.</td>
</tr>
<tr>
<td>Infomediary model</td>
<td>Metamediary, Audience Measurement Services, Incentive Marketing, Advertising Networks.</td>
<td>Some firms function as infomediaries (information intermediaries) by either collecting data about consumers or collecting data about producers and their products.</td>
</tr>
<tr>
<td>Merchant model</td>
<td>Bit Vendor, Catalog Merchant, Click and Mortar, Virtual Merchant.</td>
<td>Wholesalers and retailers of goods and services.</td>
</tr>
<tr>
<td>Manufacturer model</td>
<td>Brand Integrated Content, Lease, License, Purchase.</td>
<td>Manufacturers can reach buyers directly and thereby compress the distribution channel.</td>
</tr>
<tr>
<td>Affiliate model</td>
<td>Revenue Sharing, Pay-per-click, Banner Exchange.</td>
<td>The affiliate model provides purchase opportunities wherever people may be surfing. It does this by offering financial incentives (in the form of a percentage of revenue) to affiliated partner sites. The affiliates provide purchase-point click-through to the merchant via their web sites.</td>
</tr>
<tr>
<td>Community model</td>
<td>Social Networking Services, Open Content, Public Broadcasting, Open Source.</td>
<td>The community model is based on user loyalty. Users have a high investment in time and emotion in the site. In some cases, users are regular contributors of content and/or money.</td>
</tr>
<tr>
<td>Subscription model</td>
<td>Internet Services Providers, Person-to-Person Networking Services, Trust Services, Content Services.</td>
<td>Users are charged a periodic – daily, monthly or annual – fee to subscribe to a service.</td>
</tr>
</tbody>
</table>
The utility model is based on metering usage, or a pay as you go approach. Unlike subscriber services, metered services are based on actual usage rates.


### Table 2.8: Weill and Vitale's atomic business models (2001)

<table>
<thead>
<tr>
<th>Atomic business model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content provider</td>
<td>Firms that create and provide content (information, products, or services) in digital form to customers via third parties.</td>
</tr>
<tr>
<td>Direct to customer</td>
<td>The buyer and seller interact directly often bypassing traditional channel members.</td>
</tr>
<tr>
<td>Full-service provider</td>
<td>Firms that provide total coverage of customer needs in a particular domain, consolidated via a single point of contact. Domains cover any area where customer needs cover multiple products and services, such as financial services or health care.</td>
</tr>
<tr>
<td>Intermediary</td>
<td>It links multiple buyers and sellers. Usually the sellers pay the intermediary listing fees and selling commissions and it is possible that the buyer may also pay a purchase or membership fee. Advertisers also provide revenue for intermediaries. There are six major classes of intermediaries, namely electronic mall, shopping agents, specialty auctions, portals, electronic auctions and electronic markets.</td>
</tr>
<tr>
<td>Shared infrastructure</td>
<td>Firm provides infrastructure shared by its owners. The shared infrastructure generally offers a service that is not already available in the marketplace, and it may also be a defensive move to thwart potential domination by another major player.</td>
</tr>
<tr>
<td>Value net integrator</td>
<td>It coordinates product flows from suppliers to allies and customers. He strives to own the customer relationship with the other participants in the model, thus knowing more about their operations than any other player. His main role is coordinating the value chain.</td>
</tr>
<tr>
<td>Virtual community</td>
<td>The firm is in the centre, positioned between members of the community and suppliers. Fundamental to the success of this model is that members are able to communicate with each other directly.</td>
</tr>
<tr>
<td>Whole-of enterprise/government</td>
<td>The single point of contact for the e-business customer is the essence of the whole-of-enterprise atomic business model. This model plays an important role in public-sector organizations but also applies to the private sector.</td>
</tr>
</tbody>
</table>
Eisenmann (2002) proposes a classification scheme of eight Generic Internet business models. His categories are: Internet access providers, Online portals, Online content providers, Online retailers, Online brokers, Online market makers, Networked utility providers, Application service providers.

Apart from pure taxonomy creation, there are also some authors that focused on creating a sort of order within the numerous proposal for business models classification. This is the case of L.W. Lam and L.J. Harrison-Walker (2003) that wrote an article aiming at identifying an objective-based typology of e-business models. After having collected a list of 33 popular models, they proposed a typology based on two axes: relational objectives (divided into direct access, network development and corporate communication) and value-based objectives (divided into financial improvement and product/channel enrichment). The result is composed by six cells: (1) Internet merchants and portals; (2) Virtual product differentiation; (3) Brokerage, purchase assistance, and retail networks; (4) Interactive networks; (5) Internet promoters; (6) Image building.

A similar work has been conducted in 2008 by four Asian authors (T. S. Hsu, S. P. Chuang, C. L. Yang, C. J. Hsu) that wrote a paper called “Study on Business Models for Electronic Commerce” to investigate about e-commerce business models and, apart from already described taxonomies of Timmers (1998), Weill an Vitale (2001) and Rappa (2001), they presented also new ones (Table X).

Table 2.9: internet business model taxonomies (2008)

<table>
<thead>
<tr>
<th>Author 1</th>
<th>Author 2</th>
</tr>
</thead>
</table>
Their study follows with a classification of these e-commerce business models into three roles:

- **supplier-oriented**, that makes money via selling goods, services, and information on the Internet. Models within this category: content provider, e-tailer, manufacturing;
- **user-oriented**, that makes money via spontaneous consumers’ interactions on the Internet. Models: community, user creating;
- **supporter oriented**, that makes money via supporting the transactions on the Internet smoothly. Models: affiliate, brokerage, trust intermediary.

They conducted a quantitative research by analyzing 70 websites and, according to the adoptive rate, they achieved the conclusion that supporter-oriented is the most common role with affiliate model accounting for a rate of 80% and followed by community model (75%) belonging to user-oriented role. On the other hand, the supplier-oriented one is the less attractive because “is like the concept of mass manufacturing. Providing service by user perspective and techniques by value-added perspective has become popular business ideas in e-commerce”.

It seems, so far, that the concept of business models taxonomies is strictly connected to the e-commerce. Actually there are also authors that categorize business models independently from the web. Linder and Cantrell (2000) presents an overview of operating business models classified according to two main dimensions: a model's core, profit-making activity, and its relative position on the price/value continuum.

<table>
<thead>
<tr>
<th>Business Model Category</th>
<th>Business Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price Models</strong></td>
<td>Buying club, One-stop low price shopping, Under the umbrella pricing, Free for advertising, Razor and blade.</td>
</tr>
<tr>
<td><strong>Convenience Models</strong></td>
<td>One-stop convenient shopping, instant gratification, comprehensive offering.</td>
</tr>
</tbody>
</table>

*Table 2.10: Linder and Cantrell’s operating business models (2000)*
<table>
<thead>
<tr>
<th>Commodity-Plus Models</th>
<th>Low-price reliable commodity, Reliable commodity operations, Branded reliable commodity, Mass-customized commodity, Service-wrapped commodity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience Models</td>
<td>Experience selling, Experience destination, Cool brands.</td>
</tr>
<tr>
<td>Channel Models</td>
<td>Channel maximization, Cat-daddy selling, Quality selling, Value-added reseller.</td>
</tr>
<tr>
<td>Intermediary Models</td>
<td>Market aggregation, Multi-party market aggregation, Open market-making, Exclusive market-making, Transaction service and exchange intermediation.</td>
</tr>
<tr>
<td>Trust Models</td>
<td>Trusted operations, Trusted solution, Trusted advisor, Trusted product leadership, De facto Standard, Trusted service leadership.</td>
</tr>
<tr>
<td>Innovation Models</td>
<td>Incomparable products, Incomparable service, Breakthrough markets.</td>
</tr>
</tbody>
</table>

Generic business models are identified also by Betz (2002) that writes about the following six categories: strategic finance, strategic enterprise, strategic response, strategic learning, strategic innovation, and strategic firms.

In their “What are Business Models, and how are they built?” (2009), Johnson and Christensen indicate three types of business models:

1) Solution Shops: institutions whose resources and processes are structured to diagnose and recommend solutions for complicated problems (e.g. consulting firms, advertising agencies, research and development organizations);

2) Value-Adding Process Businesses: models that bring things in that are incomplete or broken, add value to them, and then ship them out, repaired or more complete (e.g. retailing, restaurants, automobile manufacturing, petroleum refining, educational institutions);

3) Facilitated Networks: institutions in which the same people buy and sell, and deliver and receive things from each other (e.g. insurance companies, telecommunications company).

2.4) Business model and Strategy relationship

Even if some authors have tried to clarify the difference between business model and strategy, the relationship between the two concepts is yet considered an open issue.

In their article published by the Long Range planning in 2010, Baden-Fuller and
Morgan state that “when people are asked ‘what is strategy?’ most give an answer that includes the words business model. The ubiquity of the term and the plethora of its uses suggest that business models are profoundly important to the world of work; yet management academics rarely put the concept center stage, preferring their established stresses on such concepts as competitive advantage, core capabilities, routines and resources.” The literature gap was firstly identified by Applegate (2000) writing that “the distinction between business model and strategy is not clear” and had later been denounced by Amit and Zott (2006) and Ballon (2007), with the former asking fundamental questions such as “how does business model design contribute to the competitive advantage of firms? How does it interact with firm strategies, such as product market positioning?” and the latter observing that “several authors have stated that there is a strong theoretical deficit in the business modeling literature regarding the operationalization of its concepts and the link with established strategy, management and economic theory (Porter, 2001; Lambert, 2006)”. Even in 2009, Goethals in “The unified business model framework” reminds that “strategy considerations are often omitted in business models literature.”

However, even if in common speech business model and strategy are often used as synonymous, all authors discussing about the topic agree in defining them as separate concepts. So far, this work has investigated what a business model is and which are its components. Now, in order to understand which is the relation between business model and strategy, it is necessary first to define the latter. Table 2.11 reports some strategy definitions:

<table>
<thead>
<tr>
<th>Author/school, year</th>
<th>Strategy is…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mintzberg (1994)</td>
<td>A coherent, unitary, and integrated “pattern” of decisions.</td>
</tr>
<tr>
<td>Chandler (1975)</td>
<td>A modality to establish company’s purposes (goals → objectives → means).</td>
</tr>
<tr>
<td>Harvard Business School</td>
<td>A definition of competitive environment (product/market areas in which to operate).</td>
</tr>
<tr>
<td>Lorange (1980)</td>
<td>A managerial tasks differentiation at corporate, business and operational level.</td>
</tr>
<tr>
<td>Ansoff (1985)</td>
<td>A definition of economic and not contribution that the company wants to give to its stakeholders.</td>
</tr>
</tbody>
</table>
Inevitably strategy explanation also refers to Michael Porter’s works (1980, 1985, 1996, 2001) that identifies its characteristics in:

- Defining a company’s long-term position in the marketplace;
- Making the hard trade-offs about what the company will and will not do to provide value to customers;
- Forging hard-to-replicate fit among parts of the “activity system” the firm constructs to deliver value to customers;
- Making a superior return on investment.

Strategy is also defined as an integrated, comprehensive plan which identifies the scope and the direction of the organization, aimed at obtaining long term performance superior than competitors, and integrates a coherent set of strategic decisions.

Within his works, Porter suggested some graphic techniques to represent company strategy: the activity system maps (1996), the five forces model (2001), and the value chain model (2001). The activity system maps (Figure 2.11) are considered very similar to what a business model could be (Seddon and Lewis 2003; Richardson 2005).

*Figure 2.11: Examples of activity system of Discount Airline*

![Activity System Map](image)

(Source: adapted from Porter, 1996)

As regards the environment in which the companies operate, Porter (2001) holds that it is characterized by an enlarged competition that is composed by five forces: the internal rivalry, the suppliers, the buyers, the potential entrants and the substitute products...
(Figure 2.12). There is an inverse relationship between this enlarged competition and the profitability of the sector: the strongest are these five forces, the lowest is the profitability.

*Figure 2.12: Porter’s five forces*

(Source: Porter, 2001)

In the same year (2001), Porter presented the value chain model, that is built on the conception that “every firm is a collection of activities that are performed to design, produce, market, deliver, and support its product”. The Figure 2.13 illustrates the chain: primary activities are inbound logistics, operations, outbound logistics, marketing and sales, and service. Support activities include firm infrastructure, human resource management, technology development, and procurement. Porter demonstrates that a firm may develop a competitive advantage in any one of these areas.

*Figure 2.13: Value chain model*

(Source: Porter, 2001)
As we have seen in the section focused on business model components (2.2), in some cases strategy is considered as an element of business model, both alone or used as an attribute – e.g. strategic choices, strategic objectives, and strategic resources - (Hamel 2000; Weill and Vitale 2001; Chesbrough and Rosenbloom 2002; Shafer et al. 2005; Tikkaten et al. 2005; Morris et al. 2005; Goethals 2009; Smith et al. 2010). Similarly, but dually, the book “L’impresa” (Azzone and Bertelè 2003) defines the business model as the *strategic positioning* chosen by the company within the economy on the basis of the business idea with which it aims to create value. These differences in business model and strategy relation call for a review of literature addressing this specific issue, so that it will be possible to conclude if the strategy is a business model element or if is the strategy that contains the business model concept.

Initial contributions to business model and strategy discussion were provided by Papakirkopoulos et al. (2001) that identifies company problems in reconfiguring their strategy in the loss of a holistic and universal perspective that instead a business model could offer. They hold that the strategy of the organization is characterized by strong introversion elements (to survive within rivalry, to reduce costs, and to gain competitive advantage) while a macroscopic view is necessary for the creation of a new business model and a better understanding of the strategy. In 2002, Magretta clarifies that “a business model isn’t the same thing as a strategy, it describes a system, how the pieces of business fit together”, while dealing with competition is a strategy’s job. Chesbrough and Rosenbloom (2002) are the first discussing of business models and strategy differences, however their thinking doesn’t find further support in the literature that follows. They state that value capture and sustainability is the realm of strategy and that financial dimensions are often left out of the business model, but, as we have seen in the section on business model components, it is not always the case. George Yip (2004) directly addresses the problem in his “Using strategy to change your business model”, where he distinguishes between *routine strategies* that allow to achieve reasonable improvement but do not change the underlying business model, and *radical strategies* that are needed to change the business model and to reach more drastic ambitions, such as doubling or tripling market share. Tikkaten et al. (2005) explain that the function of strategy is to give meaning and direction to the development of the company’s business model and it doesn’t concentrate on any particular aspect, but on the totality constituted by the components of the business model.
Significant argumentations related to the business model and strategy relationship are provided by Mansfield and Fourie (2003) in their “Strategy and business models – strange bedfellows? A case for convergence and its evolution into strategic architecture”. They state that “just as strategy is concerned with futurity, so business models have an undisguised passion for customer centricity as the source of value creation.” They go on saying that “characterised by innovation, functional integration and alliances, economic innovativeness and the ability to leverage value from its value chain, the distinguishing characteristics of business models appear different from those of strategy, but are equally important contributors to effective web-enabled performance.” And that “business models, per se, are not complete. Certain explicit considerations are absent from the business model concept. Not readily identifiable are the factors of strategic intent, sustainable competitive advantage, objective setting, environmental analysis and industry positioning, all of which are favoured by informed strategy.”

Mansfield (2005) adds some important issues in his work of thesis, where he draws a table that summaries differences between strategy and business model (Table 2.12) and he concludes that “the fusion of strategy with an effective business model forms the strategic architecture of a firm and that becomes the fundamental condition sine qua non for success”.

Table 2.12: Strategy vs Business model (Elaboration from Mansfield, 2005)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Strategy</th>
<th>Business model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad theoretical arena</td>
<td>Strategic intent</td>
<td>Value creation</td>
</tr>
<tr>
<td>Primary theoretical question</td>
<td>How to manage the fit between firm and environment</td>
<td>How to profit by leveraging relationships</td>
</tr>
<tr>
<td>Primary purpose</td>
<td>Sustainable competitive advantage</td>
<td>Creating and sustaining value</td>
</tr>
<tr>
<td>Primary domain of interest</td>
<td>Industry position and resource conversion</td>
<td>Alliances</td>
</tr>
<tr>
<td>Primary focus analysis</td>
<td>Strategy design and implementation</td>
<td>Value network</td>
</tr>
<tr>
<td>Primary emphasis</td>
<td>Strategy process and content</td>
<td>Revenue</td>
</tr>
<tr>
<td>Result</td>
<td>Sustainable profit</td>
<td>Value delivery and profit</td>
</tr>
</tbody>
</table>
Seddon and Lewis provide other suggestions in their article “Strategy and Business Models: What’s the difference?” (2003) considering business model as “an abstract representation of some aspect of a firm’s strategy.” They go in detail saying that “if each business model captures an essential insight of some way of creating economic value, business models may then be combined to create more complex models, and ultimately strategies.”

Osterwalder (2002) defines the business model as “the translation of a company’s strategy into a blueprint of the company’s logic of earning money.” He explains that “strategy, business model and process models address similar problems on different business layers.”

Casadesus-Masanell and Ricart (2009) explain that “a strategy is a contingent plan of action as to what business model to use. The available actions for strategy are choices (policies, assets, or governance structures) that constitute the raw material of business models. Thus, strategy entails designing business models (and redesigning them as contingencies occur) to allow the organization to reach its goals. Business models are reflections of the realized strategy. Similar to strategy, tactics are also plans of action. Tactics are courses of action that take place within the bounds drawn by the firm’s business model.”

The figures A, B, and C report the three frameworks described above. They present common elements and divergences. First, the concept of abstraction (A) can be associated to the idea of different layers (B) and to the representation of a single strategy.
with different business models options (C). However, on the one hand Seddon and Lewis (2003) state that “business model comes first” and the same thinking is held by Casadesus-Masanell and Ricart (2009) that define strategy as “a contingent plan of action to what business model to use depending on the resolution of contingences”, leaving to intend that business model has to be defined before. While, on the other hand, according to Osterwalder (2002), since “business model is the conceptual and architectural implementation of a business strategy”, it is supposed that a business strategy already exists.

Anyway, it seems not to be useful to reduce the problem to “who comes first, and who comes second”; rather the investigation related to “which is the place of business model and strategy in the business logic of the company” is much more interesting.

In order to clarify the above mentioned concepts, let’s first consider some relevant insights underlined by the authors in their papers:

- Combinations of business models could be used for “designing” strategy (Seddon and Lewis 2003).
- Strategy aims for sustainable competitive advantage, business models are said to be the sine qua non of value creation […] just as strategy is concerned with futurity, so business models have an undisguised passion for customer centricity (Mansfield and Fourie 2003).
- The business model is the “what” of business innovation and strategy the “how” […] the separation of business model from strategy has far-reaching impacts […] the logic of value-generation is the core of a business model; the details of how to realize that value are the domain of strategy (Keen and Quareshi 2006).
Business models are observable, while strategies are not fully observable […] every organization has some business models, not every organization has a strategy (Casadesus-Masanell and Ricart 2009).

Coupling strategy analysis with business model analysis is necessary in order to protect whatever competitive advantage results from the design and implementation of a new business model (Teece 2009).

The literature analysis conducted so far demonstrates that the view of relationship between business model and strategy is diversified. Indeed it is interesting to note that some studies consider the strategy as a part of the business model, thus one of its subset, while others hold exactly the contrary, that is the business model is a specification of the strategy.

For instance Verstraete and Jouison-Laffitte 2009 belong to this second category because they state that “the business model is, to some extent, a simplified and partial version of strategy, it is more accessible than the latter for the entrepreneurs which, consequently, are able to communicate it more easily”. As regards the latter authors, they provide a singular interpretation of the business model concept and relate it to strategic vision and business plan (Figure 2.14). They explain that “the entrepreneur must find a business idea which he develops and, if possible, he protects (ex: patent). He evaluates the capacity of this idea to meet a market and, thus, to become an opportunity. He works out his business model, then his strategic vision which he formalizes in a business plan. The business model takes place in the middle of the process because it is difficult to conceive it without having approached the market. It is strongly related to the strategic vision of which it is the main component but it evacuates some aspects that the strategy cannot elude. The business plan is the written version of this vision. It is not only words laid down on paper because it establishes all the activity undertaken before the entrepreneur upholds it, i.e. all the work carried out on each phase, and the business plan presents why and how, concretely, the events will be consistent with the forecasts, partly quantified. But to understand these forecasts, it is necessary beforehand to seize the heart of the business, the business model”.

*Figure 2.14: From the Idea to the Business Plan*
According to Makinen and Seppanen (2007), strategy is more concerned with value capturing and its sustainability, while a business model should be concerned with integrating sustainable value creation with capturing and appropriation. Frank Goethals (2009) instead underlines that strategy is the “why” element in the business model framework. It gives direction on why to choose some option in the other boxes – what, how, where, who, and when – and helps aligning all the decisions.

As regards the special issue dedicated to business models by the Long Range Planning Journal (2010), the argumentations related to business model and strategy relation move to more complex approaches. Smith et al. (2010) introduce the concept of paradoxical strategies, stating that they thrive within complex business models. The latter are designed to attend to the tensions of paradoxical strategies and long-term success depends on adopting and then being able to manage them simultaneously.

Doz and Kosonen (2010) concentrates on strategic agility, concluding that successful business model renewal and transformation are the main outcome of strategic agility that is composed by: strategic sensitivity that allows firms to identify opportunities for new business models and to be sensitive to the timely need for the renewal and transformation of their existing business models; new adaptive leadership work and team unity that are essential to enable shifts in business models; resource fluidity that is called for to allow firms to redeploy and reallocate their resources to new opportunities or activities in a transformed activity system.

McGrath (2010) builds her article on the discovery driven approach, suggesting that business model concept offers four ideas: (1) business models promote an outside-in focus, (2) they cannot be fully anticipated in advance - centrality of experimentation -, (3) they encourage a new appreciation of the dynamism of competitive advantage, (4) as
they evolve and mature, adopting the notion suggests a developing understanding that strategy itself is quite frequently discovery driven rather than planning oriented.

2.4.1) Business model as strategy execution

After a comprehensive review of business model and strategy relationship literature, it is possible to achieve a clarified view of the two concepts and to have an idea of “which is the place of business model and strategy in the business logic of the company”. As we have seen, the authors suggest very different opinions but there is a convergence related to the concept of execution defined as “how the firm’s strategy should be translated into action” (Richardson 2005) and also called operationalization, or implementation. As regard this issue, important conclusions provided by the authors are reported in the following table:

Table 2.13: Business model and strategy operationalization literature

<table>
<thead>
<tr>
<th>Authors, Title, Year</th>
<th>Business model and strategy operationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Seddon and Geoffrey Lewis, <em>Strategy and Business Models: What’s the difference?</em>, 2003</td>
<td>Business models may be thought of as known successful building blocks for <em>conceptualizing and building</em> strategy. By developing taxonomies and/or defining atomic and molecular business models, it will be possible to combine these to identify and evaluate new and potentially attractive strategies.</td>
</tr>
<tr>
<td>James Richardson, <em>The Business Model: an Integrative Framework for Strategy Execution</em>, 2005</td>
<td>Frameworks for understanding how firms compete effectively are useful in strategy formulation but incomplete and fragmented for the execution. […] Business model is a conceptual framework that helps to link the firm’s strategy, or theory of how to compete, to its activities or <em>execution</em> of the strategy.</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Alexander Osterwalder, Yves Pigneur and Christopher L. Tucci</td>
<td>Clarifying business model: origins, present and future of the concept</td>
</tr>
<tr>
<td>L. Lehmann-Ortega and J.-M. Schoettl</td>
<td>From buzzword to managerial tool: the role of business models in strategic innovation</td>
</tr>
<tr>
<td>Saku Makinen and Marko Seppanen</td>
<td>Strategic Management of Exploiting Technological Opportunities: Integrating Strategy to Operations with Business Model Concept</td>
</tr>
<tr>
<td>Rita Gunther McGrath</td>
<td>Business Models: A Discovery Driven Approach</td>
</tr>
</tbody>
</table>

Strategy includes execution and implementation, while the business model is more about how a business works as a system. Business model implementation or execution is a widely neglected issue. [...] Business model is the translation of strategic issues and strategic goals into a conceptual model that explicitly states how the business functions.

The business model concept builds a bridge between the strategy and the organisational, commercial and financial aspects of the firm. It forms the link between the (business and corporate) strategy of a company and its operational translation into financial, structural and commercial terms. Part of the alchemy of strategy choices and their operational translation (into revenues) seems more easily understood when seen through the prism of the business model. The way the concept of the business model has been taken up proves the necessity of intermediate concepts to make strategies operational.

Strategy process and its related routines are tying together explicitly business model elements and strategy elements. However, strategy implementation needs to be facilitated at the operational level and therefore business model concept needs also to be tied into these operational processes. These business processes are therefore the operationalizing devices for the strategy elements that have been identified and tied into business model elements.

Business model suggests a change to the way that strategies are conceived, created and executed against. Modelling, therefore, is a useful approach to figuring out a strategy, as it suggests experimentation, prototyping and a job that is never quite finished.

(Source: personal elaboration)

The argumentations reported in the table demonstrate that authors agree in considering the business model as the missing element between strategies and operations/processes.
The “bridge”, as defined by Lehmann-Ortega and Schoettl (2005), represents an immediate and clear idea of the concept. According to these findings and contrary to authors identifying strategy as a business model component, it is now possible to conclude that the business model is part of the strategic macro-process and precisely it places between planning and operational processes (Figure 2.15).

*Figure 2.15: Strategic macro-process considering the business model design element*

Each different step of Planning, Design, and Operating has a strong relation with strategy and produce a specific strategic output. In the first case it refers to Formulation, in the second Execution, and in the third Implementation. Figure 2.15 reports also other characteristics of each process: the planning phase is built on internal and external analysis, the design phase exploits the experimentation potential of business model as sources of innovation, and the operating phase is in charge of control in order to provide feedback to the process.

For a better understanding of the whole strategic macro-process, it is necessary to introduce a further section (2.5) that addresses the topic of business model and innovation. Then the model will be discussed in detail in the section 2.6 where it will be exploded in all its components.
2.5) Business Model Innovation

The studies on business model often associate the concept to that of innovation underlying the necessity for the company to renovate it in order to strengthen its competitive position. Different types of innovation exist (product vs process, technological vs market vs design, architectural vs component) but most common differentiation is between *incremental* and *radical* innovation, where the former implies that the additional value created is due to small improvements in the product/service, process, or model while the latter refers to a consistent shift in the company performance in a relative small range of time. Incremental innovation is often associated with *competence enhancing* whilst radical innovation is related to *competence destroying*, this is why it is usually referred to has disruptive innovation. Anyway implementing a radical/disruptive innovation is not a simple and immediate step, rather it requires a specific process characterized by significant effort in understanding the state of the system and implement the change in time. Indeed, if on one hand innovation allows the company to stay up to date and eventually reduce costs, on the other it strongly depends on competitors’ moves because being anticipated means loosing the first mover advantages that guarantee the protection against potential entrants and uncertain market dynamics. This is the reason why increasing timeliness and reducing imitatibility, that in the case of business models can be translated in the difficulty for competitor of replicating the model, are fundamental for the success of innovation. Due to the complexity and the dynamism of the process a key role is played by discovery, experimentation, adaptation, and learning. Furthermore, to be effective, innovation has to be supported by internal leadership, indeed only if the process is guided by the top management level it assumes the rightful importance and authority in order to succeed and involve everyone in the organization.

When dealing with innovation, and especially on the basis of this work, it is necessary to distinguish business model innovation from product, service or technology innovations (Lindgardt et al. 2009), they belongs to the same research stream but they address different problems. As regards business model innovation, in 2000 Hamel stated that “the end of the era of continuous progress has given way to an era of imagination and revolution. […] Radical innovation requires a complete and coherent business model to be constructed”. He goes on explaining that “concept innovation is the capacity to create business models which are very different, both from previous practices and from those of competitors”.
Tapscott (2001) identifies three core areas for business model innovation: better and unique products, sustainable operational efficiencies, and stronger personal customer service and relationships. This is possible thanks to the profound changing that the Net is precipitating to the structure and culture of successful businesses and these changes enable companies to compete better. The association between the concepts of competition and innovation is present also in Mitchell and Coles (2003), in fact the authors hold that “continuing business model innovation provides a parallel way to outperform competition”, this means that “when you improve your business model by redirecting its focus, some competitors will continue to follow the old direction, and will be left chocking in your dust as you speed off in a better direction”. The concept of continuing business model innovation derives from other definitions: first there is the business model improvement that means changing a single business model element (according to the authors they are: “who”, “what”, “when”, “why”, “where”, “how”, and “how much”) in a way that substantially enhances a company’s on-going performance versus the competition in sales, profits and cash flow. Second there is the business model replacement that entails improving at least four business model elements versus the competition. Then, when a company makes business model replacements that provide product or service offering to customers that were not previously available, it is called business model innovation. Finally when a company pursues an on-going process of developing and installing business model improvements, replacements, and innovations, it refers to as continuing business model innovation.

Another comprehensive study of business model innovation is provided by Lemann-Ortega and Schoettl (2005), according to which the business model can help achieve a more global take on innovation. It is called strategic innovation and refers to various contributions (Table 2.14).

Table 2.14: Strategic innovation definitions

<table>
<thead>
<tr>
<th><strong>Strategy innovation</strong> is the capacity to reconceive the existing industry model in ways that create new value for customers, wrong-foot competitors, and produce new wealth for all stakeholders. (Hamel 1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic innovation</strong> is a fundamental reconceptualization of what the business is all about, which, in turn, leads to a dramatically different way of playing the game in an existing business. (Markides 1999)</td>
</tr>
</tbody>
</table>
**Value innovation** makes the competition irrelevant by offering fundamentally new and superior buyer value in existing markets and by enabling a quantum leap in buyer value to create new markets. (Kim and Mauborgne 1999)

**Strategic innovation** is (about) changing the rules of the game. (…) When one consistent business model is converted into another internally consistent business model, the rules of the game are changed. (Govindarajan and Trimble 2001)

**Strategic innovation** means an innovation in one’s business model that leads to a new way of playing the game. (Charitou and Markides 2003)

**Strategic innovation** is the fundamental reconceptualization of the business model and the reshaping of existing markets (by breaking the rules and changing the nature of competition) to achieve value improvements for customers and high growth for companies. (Schlegelmilch et al. 2003)

(Source: Lemann-Ortega and Schoettl, 2005)

They conclude that “the business model can be perceived as a useful instrument for developing a strategic innovation. It indeed structures thinking to focus on the strategy with the customer at its centre, but without neglecting the operational and profit aspects of the business’s economic equation.”

Main contributions to business model and innovation relationship are provided by Amit and Zott (2001, 2006, 2009) that describe the *novelty-centred business model design* as “the conceptualization and adoption of new ways of conducting economic exchanges, which can be achieved, for example, by connecting previously unconnected parties, by linking transaction participants in new ways, or by designing new transaction mechanisms”. This argumentation traces back its origins to the Schumpeterian logic of innovation (1934) and Drucker’s definition of innovation (1985) which refers to the specific instrument of entrepreneurship and the act that endows resources with a new capacity to create wealth. Amit and Zott’s study shows that firms are not only able to innovate by recombining the resources they control, but also by harnessing those of the partners, suppliers, and customers who participate in their business model. Furthermore they demonstrate that novelty centred business model design interact with efficiency centred one and the research results indicate that attempting to emphasize both efficiency and novelty in the design of a business model may be costly and could adversely affect performance.

Teece (2009) directly addresses the problem of finding connection between the business model and innovation management. Without a well-developed business model, innovators will fail to either deliver or to capture value from their innovations, it is thus
necessary that they understand business design options as well as customer needs and technological trajectories. Anyway technological innovation does not guarantee business success: new product development efforts should be coupled with a business model defining their “go to market” and “capturing value” strategies.

Johnson and Christensen (2009) differently from previous authors, investigate the role of business model in the process of disruptive innovation because they observe that the “negligence or failure in business model innovation is the primary reason why the leading incumbent firms in most industries typically fail when confronted by disruptive attackers”. They identify three enabling elements to each disruption (reported by Figure 2.16):

1) *Technological innovation*, that transform the fundamental technological problem in an industry from a complex one that only a few, highly expert people could design to something that is so simple that people with much less training can do it well;
2) *Disruptive business models*, which embed the simplifying technology and whose resources, processes, and profit formula enable it to deliver the simple, affordable solution to the customer in a cost-effective way;
3) *New value network*, that is an ecosystem within which the disruptive business model is embedded.

*Figure 2.16: Business model innovation and the process disruption*
Lingardt et al. (2009) argue that innovation becomes business model innovation when two or more elements of a business model (according to the authors they are: target segments, product/service offering, revenue model, value chain, cost model, and organization) are reinvented to deliver value in a new way. Since it involves a multidimensional and orchestrated set of activities, business model innovation is both challenging to execute and difficult to imitate. Furthermore business model innovation can take many forms, reported by Table 2.16 that shows examples of innovations related to the value proposition, to the operating model, and to the business system architecture that is how the innovation is integrated into the surrounding business network.

Table 2.15: Forms of business model innovation

<table>
<thead>
<tr>
<th>Value proposition</th>
<th>Operating model</th>
<th>Business system architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product as a service and outcome</td>
<td>Deconstruction</td>
<td>Open</td>
</tr>
<tr>
<td>General Electric</td>
<td>Li &amp; Fung Limited</td>
<td>Facebook</td>
</tr>
<tr>
<td>The product as an experience</td>
<td>Integration/acceleration of the supply chain</td>
<td>Person to person</td>
</tr>
<tr>
<td>Apple</td>
<td>Zara</td>
<td>PayPal</td>
</tr>
<tr>
<td>Trust premium</td>
<td>Low cost</td>
<td>Adjacency</td>
</tr>
<tr>
<td>Whole Foods</td>
<td>Tata Motors</td>
<td>Ikea’s Mega Mail division</td>
</tr>
<tr>
<td>Free (or nearly free)</td>
<td>Direct distribution</td>
<td>Serial</td>
</tr>
<tr>
<td>Google, Vellò, JC Decaux</td>
<td>Nestlé Nespresso</td>
<td>Virgin Group</td>
</tr>
</tbody>
</table>

(Source: Lindgardt et al., 2009)

In their “Business Models as Models”, Baden-Fuller and Morgan (2010) associate the concept of business model to that of recipes, stating that “the idea of the recipe suggests how the chef, within broad constraints of the principles of cooking and the kind of dish chosen, may create variations and innovations. If business models play the same role, they too are not open ended but constrained, and involve ingredients that must be arranged and combined according to the recipe (i.e., to some generic business model), but yet have many possibilities for innovation. Just as the creative chef will innovate to produce a new recipe for a successful dish, the creative entrepreneur or manager may innovate to build a new business model, a new recipe for firm behaviour. […] Innovation, clearly, can take the form of variation to suit changing situations” (Baden-Fuller and Morgan, 2010).
2.5.1) Open business model

The most comprehensive study related to business model and innovation has been conducted by Chesbrough which reported his findings in the book “Open business models” (2006). His reasoning is based on a previous publication called “Open innovation” (2003) that aims to present a new paradigm called open innovation defined as “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation”. It assumes that external ideas can be taken to market through internal channels, but also internal ideas can be taken to market through external channels to generate additional value (Chesbrough et al., 2006). This concept is compared with the opposite paradigm called closed innovation that instead refers to firms that use only internal ideas and internal paths to market in order to advance their technology. External intellectual property is regarded as suspect, unreliable, and something to be avoided (Chesbrough, 2006). The differences between the two paradigms is represented by the Figures 2.17 and 2.18.

*Figure 2.17: Current Paradigm: A Closed Innovation System*

*Figure 2.18: Open innovation paradigm*
It should be noticed that, in the second case the boundary between the company and its surrounding environment is porous; this enables innovations to move more easily between (Chesbrough, 2003).

The centrality of the business model is one of the main differences between the two paradigms. In the closed innovation paradigm, firms paid little or no attention to the business model in organizing for innovation. These firms focus on securing the best and the brightest people and funding their best researchers, hoping that they will come up with valuable new innovations that will somehow find a path to market. On the contrary, open innovation explicitly incorporates the business model as the source of both value creation and value capture. In addition, open innovation firms actively seek smart people from both inside and outside the firm to provide fuel for the business model. Ideas or technologies that don’t fit in the current business model, can still find their path to market through a variety of channels, such as licensing, spin-off and so on. This business model will enable the organization to sustain its positions in the industry value chain over time (Chesbrough et al., 2006). The Table 2.17 summarizes the contrasting principle of closed and open innovation:

**Table 2.16: Closed and Open innovation principles**

<table>
<thead>
<tr>
<th>Closed innovation principles</th>
<th>Open innovation principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>The smart people in our field work for us.</td>
<td>Not all the smart people work for us so we must find and tap into the knowledge and expertise of bright individuals outside our company.</td>
</tr>
<tr>
<td>To profit from R&amp;D, we must discover,</td>
<td>External R&amp;D can create significant value;</td>
</tr>
</tbody>
</table>
develop and ship it ourselves. internal R&D is needed to claim some portion of that value.

If we discover it ourselves, we will get it to market first. We don’t have to originate the research in order to profit from it.

If we are the first to commercialize an innovation, we will win. Building a better business model is better than getting to market first.

If we create the most and best ideas in the industry, we will win. If we make the best use of internal and external ideas, we will win.

We should control our intellectual property so that our competitor’s don’t profit from our ideas. We should profit from others use of our IP, and we should buy others IP whenever it advances our own business model.

(Source: Chesbrough, 2003)

Chesbrough (2006) argues that the open business model utilizes both external and internal ideas to create value, while defining internal mechanisms to claim a portion of the captured value. The open innovation changes hands (through selling, buying, licensing, or else) at least once in their journey to the market. The open business model can offer lower costs to innovation, faster times to market, and the chance to share risks with others because the innovation labour is divided to another party. However, many business models are closed and make little use of external ideas and technologies.

Business models differ in openness. In order to classify the openness of business models and to determine their maturity stages, Chesbrough (2006) introduced a business model framework (BMF). The classification system sequences possible business models from very basic models to far more advanced models and is presented in the Table 2.18 below together with some examples. Using BMF, companies can assess where their current business model stands in relation to its potential and then define appropriate next steps for the further advancement of that model.

Table 2.17: Six types of business models

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undifferentiated business model</td>
<td>It competes on price and availability, and serves customers who buy on those criteria. These firms sell commodities, and are doing so in ways that are no different from many, many other firms. They often are caught in the “commodity trap”.</td>
<td>Most restaurants</td>
</tr>
<tr>
<td>Business Model</td>
<td>Description</td>
<td>Examples</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td><strong>Differentiated business model</strong></td>
<td>The company has created some degree of differentiation, allowing targeting a performance-oriented customer. These companies may lack the resources and staying power to invest in the supporting innovations to sustain its different position. This give rise to the pattern called “one hit wonders”, where a company or inventor has a successful first product, but is unable to follow up this success with additional products of similar success (many start-ups).</td>
<td>Most technology start-ups</td>
</tr>
<tr>
<td><strong>Segmented business model</strong></td>
<td>The company now can compete in different segments simultaneously. More of the market is thus served, and more profit is extracted from the market as well. The price sensitive segment provides the volume base for high volume, low cost production. The performance segment supplies high margins for the business. The firm BM is more distinctive and profitable, which supports the firm’s ability to plan for its future via product and technology roadmaps. Firm remains vulnerable to any major new technical shift beyond the scope of their current business and innovation activities, and also to major shifts in the market.</td>
<td>Many industrial firms; Xerox</td>
</tr>
<tr>
<td><strong>Externally aware business model</strong></td>
<td>The company has started to open itself to external ideas and technologies in the development and execution of the business, this unlocks greater set of resources available to such company. The roadmaps provide a shopping list of needs within the firm for external ideas and technologies. Relationships with outsiders help identify external projects that fulfil some of these needs. This reduces the cost of serving the business and the time it takes to get new offerings to market, and shares the risks of new products and processes. It allows suppliers and customers to plan their own activities in concert with the innovative activities of the firm.</td>
<td>SAP R/3; Big Pharma</td>
</tr>
<tr>
<td><strong>Integrated business model</strong></td>
<td>The company’s BM now plays a key integrative role within the company. Suppliers and customers enjoy formalized institutional access to the firm’s innovation process, and this access is now reciprocated by the suppliers and customers, that share their own roadmaps with the company, giving the company much better visibility into the customers’ future requirements. Companies begin to experiment more directly with the BM itself. They take time to understand the supply chain and also invest substantial resources to study “the customer’s customer”. Some experimentation is conducted on alternative distribution channels, and upon alternative configurations of BM.</td>
<td>Millennium, other biotech’s; IBM Global Services</td>
</tr>
</tbody>
</table>
This ability to adapt requires a commitment to experimentation with one or more BM variants. Some companies utilize corporate venture capital as means to explore alternative BM in small start-ups. Some utilize spin-offs and joint ventures as means to commercialize technologies outside of their own current BM. Some have created internal incubators to cultivate promising ideas that are not yet ready for high volume commercialization. Key suppliers and customers become business partners. The BM of suppliers are integrated into the planning processes of the company, which has integrated its BM into the BM of its key customers. An important capability that enables this integration of BM throughout a value chain is the ability of the company to establish its technologies as the basis for a platform of innovation for that value chain.

(Source: Chesbrough, 2007)

2.5.2) Business model evolution

As mentioned many times across this work, the business model is not a static concept. The dynamism is one of its main characteristics and is confirmed by the necessity of experimentation, adaptation, and learning underlined by many authors. A consequence of this business model feature is found in its evolving nature that brings back the idea of lifecycle. According to Lindgardt et al. (2009) the greater frequency of disruption and dislocation in many industries is shortening business model lifecycles. On the basis of the literature analysis conducted it will be possible to draw a business model lifecycle that range from the initial phases of discovery and experimentation, and ends with reformulation passing through prototyping, adaptation, implementation and maturity, this cycle is strongly dependent from the level of innovation required in order to beat the competition and provide economic benefits to the company.

In 2007 Rasmussen explains that the development of the business model is not static but a dynamic process subject to change through learning and adaptation. For instance the process of deriving value from a technology based offering requires a learning process of developing and adapting the technology to meet market requirements. Accordingly it may be necessary to adopt an iterative process between adjustments to product and the market segment to align the product with the cost of production.

observes that “designing a new business model requires creativity, insight, and a good deal of customer, competitor and supplier information and intelligence. There may be a significant tacit component. An entrepreneur may be able to intuit a new model but not be able to rationalize and articulate it fully; so experimentation and learning is likely to be required. As mentioned earlier, the evolving reality impacting customers, society, and the cost structure of the business must be understood. It is often the case that the right business model may not be apparent up front, and learning and adjustments will be necessary: new business models represent provisional solutions to user/customer needs proposed by represent entrepreneurs/managers”. He also adds “A helpful analytic approach for management is likely to involve systematic deconstruction/unpacking of existing business models, and an evaluation of each element with an idea toward refinement or replacement. The elements of a business model must be designed with reference to each other, and to the business/customer environment and the trajectory of technological development in the industry”. Furthermore “A provisional business model must be evaluated against the current state of the business ecosystem, and also against how it might evolve”.

Recently Chesbrough wrote “Business Model innovation: Opportunities and Barriers” (2010) stating that companies must adopt an effectual attitude toward business model experimentation. With discovery driven planning (McGrath and Macmillan, 1995) companies can model the uncertainties and update their financial projections as their experiments create new data. Thanks to effectuation (Sarasvathy, 2008) they can create actions based on the initial results of experiments, generating new data which may point towards previously latent opportunity.

The concept of business model evolution and the importance of the above mentioned concepts of discovery, experimentation, learning, and adaptation conduct to the idea of business model life cycle. According to Morris et al. (2005), it is possible to envision a business model life cycle that consists on an initial period during which the model is fairly informal or implicit. It is followed by a process of trial and error, and a number of core decisions are made that delimit the directions in which the firm can evolve. At some point, a fairly definitive, formal model is in place. Subsequently, adjustments are made and on-going experiments are undertaken.

The Table 2.19 describe the different phases of the business model lifecycle and associate each of them to a level of effectiveness that means the ability of the model to execute strategic objectives.
### Table 2.18: Phases of business model lifecycle

<table>
<thead>
<tr>
<th>Phases</th>
<th>Description</th>
<th>Level of BM effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) <em>Discovery</em></td>
<td>New opportunities to modify the current business model take shape. Each component of the business model is investigated in order to find valid alternatives.</td>
<td>Very low</td>
</tr>
<tr>
<td>2) <em>Experimentation</em></td>
<td>New models are tested and simulated in order to evaluate their impact on company performances. “Value Ranges” of performance for each and every business model parameters are identified. One model is chosen to be implemented.</td>
<td>Low but increasing fast</td>
</tr>
<tr>
<td>3) <em>Adaptation</em></td>
<td>The model is put in practise but the different company’s layers have to become familiar with the new configuration.</td>
<td>Growing positive</td>
</tr>
<tr>
<td>4) <em>Maturity</em></td>
<td>The model is well established in the company culture and allows to maintain a competitive position in the market.</td>
<td>High and stable</td>
</tr>
<tr>
<td>5) <em>Reformulation</em></td>
<td>The necessity of rethinking to the model is taking place. Signals of weak performances are detected, or unexpected performance values for the business model parameters emerge (thus triggering an overall strategic reformulation).</td>
<td>Medium but decreasing</td>
</tr>
</tbody>
</table>

(Source: personal elaboration)

The business model lifecycle can thus be represented in the following way (Figure 2.19):

*Figure 2.19: Business model lifecycle*
The innovative firm has to continuously apply the business model lifecycle concept in order to obtain a process that facilitates a shift towards growing performances (Figure 2.20).

*Figure 2.20: Business model lifecycle as a continuing process*
2.5.3) Managerial leadership and business model change

As in all processes that imply a change, also in the case of the business model the commitment by the top management is a necessary input for the business model innovation to be effective. If it is true that new ideas and opportunity discover can arise from every part of the company, it is also proved that without the right authority mobilized for the change, it will not takes place. In relation to this argument, Hamel (2000) explains that “the innovator must find a translator, somebody who has direct access to the upper hierarchy, who finds the idea attractive and who will defend it before the management”. Mansfield and Fourie (2003) state that “developing and implementing new or changed business models requires entrepreneurial flair and careful management of risk.”

The discussion is studied in deep by Chesbrough (2007) that underlines the “business model innovation leadership gap” existing in many organizations: no one person in the organization gap has the authority and the capability to innovate business model. Since it takes a lot of time to develop business model experiments, obtain clear results, interpret and understand the results, and then carry out a broad deployment of those results, instead of drive the change, top managers represent a barrier to innovation. Indeed they reached their level of responsibility by executing within the current business model, so that model is familiar and reassuring them (Chesbrough, 2007). It is like an opportunistic behaviour that immobilize company’s practises and prevent business model to adapt to fast changing environmental conditions. An organization need to identify internal leaders for business model change (Chesbrough, 2010) and give senior managers the resources and authority to define and launch business model experiments (Chesbrough, 2007).

Doz and Kosonsen (2010) identify leadership unity as one of the three determinants to make the organization more agile in order to solve the contradiction between the nature evolution of business model towards a stable, therefore rigid, solution, and the strategic discontinuities and disruptions that usually call for changes in the business model. Others determinants are strategic sensitivity and resource fluidity. According to the authors, “new adaptive leadership work and leadership team unity are essential to enable shifts in business models. Strategic awareness would remain ‘lettre morte’ in accelerating business model change and renewal without a top management team willing to consider business model redefinition, and, more importantly, able to achieve collective commitment to taking the risks necessary to venture into new
business models and (more difficult) to abandon old ones”. They also draw a leadership action agenda (Table 2.20) for accelerating business model evolution.

Table 2.19: The Leadership Action Agenda

<table>
<thead>
<tr>
<th>Main dimensions</th>
<th>Leadership actions</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Sensitivity</strong></td>
<td>1. Anticipating</td>
<td>Sharpening foresight</td>
</tr>
<tr>
<td></td>
<td>2. Experimenting</td>
<td>Gaining insight- Probing. Discovering ‘lead locations,’ innovation hotspots</td>
</tr>
<tr>
<td></td>
<td>3. Distancing</td>
<td>Gaining perspective</td>
</tr>
<tr>
<td></td>
<td>4. Abstracting</td>
<td>Gaining generality</td>
</tr>
<tr>
<td></td>
<td>5. Reframing</td>
<td>Seeing the need for business model renewal</td>
</tr>
<tr>
<td><strong>Leadership Unity</strong></td>
<td>6. Dialoguing</td>
<td>Surfacing and sharing assumptions, understanding contexts</td>
</tr>
<tr>
<td></td>
<td>7. Revealing</td>
<td>Making personal motives and aspirations explicit</td>
</tr>
<tr>
<td></td>
<td>8. Integrating</td>
<td>Building interdependencies</td>
</tr>
<tr>
<td></td>
<td>9. Aligning</td>
<td>Sharing a common interest</td>
</tr>
<tr>
<td></td>
<td>10. Caring</td>
<td>Providing empathy and compassion</td>
</tr>
<tr>
<td><strong>Resource Fluidity</strong></td>
<td>11. Decoupling</td>
<td>Gaining flexibility</td>
</tr>
<tr>
<td></td>
<td>12. Modularising</td>
<td>Assembling and disassembling business systems.</td>
</tr>
<tr>
<td></td>
<td>13. Dissociating</td>
<td>Separating resource use from resource ownership and negotiating resource access and allocation</td>
</tr>
<tr>
<td></td>
<td>14. Switching</td>
<td>Using multiple business models</td>
</tr>
<tr>
<td></td>
<td>15. Grafting</td>
<td>Acquiring to transform oneself</td>
</tr>
</tbody>
</table>

(Source: Doz and Kosonsen, 2010)

2.6) Business model design within the strategic macro-process

On the basis of comprehensive literature analysis on relationship between business model, strategy and innovation, it is possible to conclude that the business model design process is effective if it is included in the traditional strategic process as a link between the strategy formulation and its implementation. Figure 2.21 reports the different phases of the process and underlines the modelling element that was missing in the traditional strategic macro-process. It is related to the design of business model options according
to the alternative strategies chosen and to *experimenting* in order to understand which is the best option to adopt and then implement.

*Figure 2.21: Strategic macro-process considering business model design*

The strategic macro-process is now divided in three intertwined processes:

1) The *Planning process* includes three different phases. First company vision and mission are defined, then the internal and external analysis are combined in the Strengths, Weaknesses, Opportunities, and Treats (SWOT) model, finally goals and alternative strategies are formulated. The planning process thus implies an initial phase of analysis and diagnosis that is followed by a decisional one.

a) Vision and Mission: the former defines the desired or intended future state of an organization or enterprise in terms of its fundamental objectives and/or strategic direction; the latter defines the fundamental purpose of an organization
or an enterprise, succinctly describing why it exists and what it does to achieve its Vision.

b) The SWOT analysis aims to combine the understanding of external environment with its opportunities and treats and the understanding of the company position in the market with related strengths and weaknesses.

c) Finally goals and strategic alternatives are formulated. The formers refer to objectives that are specific with respect to magnitude and time. They have to respond to specific characteristics, in the sense that they have to be hierarchically arranged – from the most to the least important-, to be quantitative whenever it is possible, to be realistic and consistent (Kotler.). The latters instead refer to renown Porter’s (1980) strategies of overall cost leadership, differentiation, or focus with additional opportunities of strategic alliances or collaborations (product or service, promotional, logistics, pricing).

2) The Business Model design process starts with the definition of business model options that can be adopted on the basis of the strategic alternative chosen. Then, thanks to the experimenting phase, the best option is chosen for the implementation. The key elements of the Design process are thus innovation and experimentation.

a) The Business model option is a specific combination of business model building elements or parameters, i.e. different combinations of values assigned to each and every parameter,. The variety of options account for an increasing decisional complexity when passing from planning to execution phase (Figure 2.22) and it is related to the fact that among different strategic alternatives that can be possibly implemented, the company has to chose one or more but then each one of these can be executed through different business models characterized by different “building element mixes”.

*Figure 2.22: increasing decisional complexity from strategy planning to implementation*
b) *Experimenting* means testing the new model in the company reality in order to adapt it as much as possible to the characteristics of the organization and of its business network, by changing the values originally assigned to business model parameters in the design phase. Theoretical business model options are transformed in concrete decisions to be taken and the results are evaluated. According to the results obtained by this phase, it is possible to distinguish between two types of experimentation outcomes:

- **ordinary outcome**: refers to the results obtained by recurrently testing new business model elements combinations and it should guarantee to the company a continuous improvement of its business model effectiveness.

- **discovery driven outcome**: means finding that a combination of values produces substantially better performances or anomalies and opens space for new opportunities; it relates to the discovery that the value range identified for each and every parameter has changed significantly and unexpectedly (such change is not due to an explicit strategic reorientation, but rather to exogenous – e.g. technology radical innovations – or “under the surface” endogenous factors – e.g. new resources, competencies and capabilities flourished inside the company). It leads to spot strategic discontinuities, questioning company’s current strategic decisions, and triggering a new strategic planning process. This reasoning implies a method for evaluating the overall effectiveness of the business model in order to understand if this
effectiveness is becoming higher or lower thus if a disruptive (positive or negative) innovation influencing that combination is taking place.

Experimenting, and business model innovation in general, can thus be considered as a trigger element in the overall strategic process, identifying discontinuities and isolating them in order to reformulating the strategy and allowing to exploit the best from this discover. By combining the anomalies detection nature of the experimenting and the process of anticipation of the change, the company can improve its ability in understanding the right moment for replanning the strategy.

3) **Operating process** refers to the strategy implementation phase and it depends on results of the experimenting phase. It also provides the feedbacks in order to continuously improve the macro-process. It is divided in programming and implementation/control.

   a) **Programming** means assigning specific tasks, resources and responsibilities to company workers, estimating the costs and the profit potential, and making financial projections.

   b) **Implementation and control** transform the decision taken in operative form and provide insights related to the specific phase improvement through feedbacks (Figure 2.23).

   ![](image)

   **Figure 2.23: strategic macro-process and control feedbacks**

   (Source: adapted from Kotler, 2009)

2.7) **Business Models in Mobile Telecommunications Industry**

When you navigate on the Internet looking for “business model and Mobile” news or information, you find in most of the cases articles denouncing a necessity for Mobile players to build a new business model or to capitalize from business model innovation. “What does a business model mean in the Mobile context?” and “Which elements compose that business model?” are questions that rarely find an answer. These
generalisation and misunderstanding of the concept are the main reasons underlying this work that wants to fill a gap that has formed over the years both in the theoretical literature and in the practical application.

The Digital Content Summit 2010 underlines that the digital content evolution is contributing to a substantial redefinition of rules of the competitive game and of business models. New business models and sustainability conditions are yet under discussion. Furthermore interesting market segments where the content become an added service or a complementary good are delineating (e.g. “Nokia comes with music”). The website SearchTelecom.com puts the business model transformation in the top five telecom industry trends for the 2010. Bertoldi, Vice President Southern Europe of Genesys Telecommunications Labs, has recently communicated his opinion related to worldwide telecommunications trend. He states that market scenarios are conditioned by fast changing and different factors can determine the success or the loss. One of the forces that can influence the forecasts is the ability of the firm in developing new business models that are able to produce higher profits. The famous consulting group Ernst & Young, has published in 2009 the results of a study related to the top ten of factors of risk perceived by telecoms companies. The incapacity of generating sustainable cash flows related to new business model is positioned at fourth level. Indeed the problem of capitalizing business model innovation is absolutely the main issue discussed, so that often business model issues are reduced to a mere revenue model problem (that in reality, as we will see later in the next section, is just one part of the business model). Another problem that is perceived as relevant in the Mobile context is the increasing competition with players that do not belong to Telecoms but that offer a similar service (e.g. Apple, Google, Microsoft). According to Gartner, a leading information technology research and advisory company (reported by key4biz.it, 2007), on the contrary of Mobile players, these companies have a solid relationships with consumers and have adopted a customer-centric business model that is forcing the operators to face a profoundly different reality from some years before when the market was controlled by an oligopoly. Gartner holds that in order to succeed, operators have to build a customer experience based on new and interactive services. The business models that could allow to reach this purpose are: Content Innovator (produce and control their content and use them as sources of differentiation), Aggregator (is not in charge of production, but of collection and distribution of content), Bit Pipe Carrier (based on providing connectivity as a public service and on operative excellence). This necessity
of changing business model for Mobile actors is strongly related to the advent of Web 2.0 characterized by a high level of interaction between the user and the web (Wikipedia, YouTube, Facebook, MySpace, Twitter, Gmail…) and offering services like blogs, forums, chats that are for free. According to a KPMG study (reported by key4biz.it, 2007) the pay-per-use logic at the basis of Mobile companies’ old business model is seriously questioned and model solutions of “wallet sharing” are forcing for abandoning the “walled garden” one based on the false assumption that Mobile Network Operators’ full control of the Mobile Content value chain, from creation to delivery of services, could grant them higher incomes and prevent other potential competitors from threatening the operators’ customer base (Ghezzi, 2007).

In order to investigate how authors address the above mentioned business model issues, a literature analysis on Mobile business model has been conducted. The results show that the research on this field is underdeveloped, but there are noted scholars and researchers that faced the topic and offer significant contributions to this study (i.e. Harry Bouwman, Timber Haaker, Pieter Ballon, Edward Faber, Giovanni Camponovo, and Yves Pigneur). For understanding authors’ proposals related to business model application to Mobile commerce and contributing with a personal research work, first it is necessary to identify Mobile characteristics and actors involved in the market.

2.7.1) Mobile characteristics

*Mobility* is, obviously, the most important feature. It represent the concept of *accessibility* – anytime, anywhere – and related *usefulness*. According to Müller-Veerse 2000, it includes other attributes such as *freedom of movement* (services can be used while on the move), *ubiquity* (the possibility of using services anywhere, independent of the user’s location), *localization* (user’s location information can be exploited to offer location-based relevant services), *reachability* (users can be reached anywhere anytime, and they can restrict it to particular persons and contexts), *convenience* (as Mobile devices are always at hand), *instant connectivity and personalization* (since the phone is a personal device and can store personal information, it can be used to provide personalized services). The phenomenon of *network effects* (Camponovo and Pigneur 2003) is another characteristics that is due to the complementarity of service components. It requires that the different networks, devices and applications are interoperable, favouring partnerships to forge common standards. Mobile is also characterized by *exclusive control over important assets* (Camponovo and Pigneur
that may arise for a certain number of reasons: the absolute rarity of a good, the existence of a fabrication secret, a special privilege or a patent that gives its owner the exclusivity over a certain asset, and the presence of particular cost structures with increasing returns or very high initial investments that cause natural monopolies to arise. Methlie and Pedersen (2007), that present several attributes characterizing Mobile service and classify them in intrinsic or extrinsic ones, add to the above mentioned also functionality of the content of the service (Pedersen and Nysveen 2003), enjoyment (Nysveen et al. 2005), quality of service, compatibility, and innovativeness as intrinsic attributes. While network size, complementary service variety, speed of development, and complementary service quality are recognized as extrinsic attributes. In addition to already mentioned features, in their work of thesis, Cavallaro and Portale (2007) individuate interactivity and multimedia. The former focus on the bi-directionality of the communication while the latter suggests the possibility to combine different means of communication including written text, images, sounds, and videos.

2.7.2) Actors involved

A classification of authors involved in the Mobile Telecommunications Industry is provided by Camponovo and Pigneur (2003) in their paper “Business model analysis applied to Mobile business”. Key actors participating in the Mobile business are dividing in five macro-categories: technology, services, network, regulation, and user (Figure 2.24).

Technology includes:

- **Device manufacturers** that provide the physical Mobile device to end users that enable them to access a Mobile network and to run Mobile applications. It is possible to distinguish between Mobile phone manufacturers integrated with equipment vendors (e.g. Nokia), PDAs manufacturers (e.g. Sony), and wireless card manufacturers (e.g. Agere);

- **Equipment vendors** that provide the physical core Mobile network infrastructure and the logical infrastructure required to operate and manage the network. Examples are: Ericsson, Motorola, and Siemens.

Services comprise:
- **Content providers** that are in charge of the provision of relevant data and information products and distribute them using the Mobile channel. This role is played by press agencies (e.g. ANSA), media companies (e.g. CNN), and content aggregators (e.g. Yahoo);

- **Application providers** that allow the provision of Mobile applications and platforms such as middleware and application servers;

- **Payment agents** that provide a method of payment to end-users for cash-free purchases of goods and services via the Mobile phone. They can also provide payment platforms to other businesses. Examples comprise banks, credit card companies, and smartcard companies.

*Figure 2.24: Mobile industry actors and relationships*
Network is composed by:

- **Mobile Network Operators** that provide ubiquitous communication services to end users, giving them access to their network and other network operators’ networks and the Internet. They supply also various network-related services such as location information, user identification and billing services to third parties (e.g. Vodafone, Telecom Italia, H3G, and Wind);

- **Internet Service Providers** that allow to access the Internet network and include WiFi operators and wired ISPs.

Regulation category includes the *regulation authorities* that set the legal framework which provides the population and the economy with a wide range of competitive telecommunications services. *Users* are also important players in the game because they ultimately determine the success or failure of Mobile business.

Another classification is provided by Ghezzi (2007) considering actors that operate in the Mobile Content & Internet business area: Mobile Network Operators, Mobile Content & Service Providers, Mobile Middleware Technology Providers, Device Manufacturers, Content Owners, and Web Company. This specific business area results from the convergence and intersection of different Industries (in terms of both technologies and market players): Mobile, Web, Media, and Information & Communication Technology.

Here a description of each actor:

- the **Mobile Network Operators (MNO)** owns the 3G (UMTS) license and network, and is responsible for the provisioning of its functionalities. This player controls other market’s “essential facilities” and assets: the Mobile Portal, the charging-billing-accounting-reporting systems, the customer “SIM” card, and the strong brand identity and large customer base;

- the **Mobile Content & Service Providers (MCSP)** is divided in Retailer and Integrator. The former is focused on the B2C activities of development, aggregation, management and promotion of Content and Services. The latter is focused on the B2B activities of interface and integration with MNO’s billing systems;
- the **Mobile Middleware Technology Providers (MMTP)** focuses on the provision of the middleware Mobile Content & Service Delivery Platforms enabling MNO’s and MCSP’s service creation, management and delivery;

- the **Device Manufacturers (DM)** focuses on the manufacturing of Mobile/Wireless devices employed by End-users to get access to Content & Services (e.g. Cell phones, Smart phones, PDAs, etc.);

- the **Content Owner (CO)** represents a broad category grouping actors that created and own original content, services or applications, to be bundled and transferred through the network to reach the End-User (media companies, majors, web editors, game publishers, other original content owners, single developers);

- the **Web company (WC)** is another broad category of actors coming from the Web industry. They focus on services related to data traffic (Mobile Internet: communication & community, search, location-based services, instant messaging,…), mostly taken from their Web offer and redeployed/adapted for the Mobile Channel.

The different layers involved are reported in the Figure 2.25:

*Figure 2.25: Different Mobile industry layers*

(Source: Ghezzi, 2007)

### 2.7.3) Mobile business model: definitions, design issues, and taxonomies
The studies that address the application of the business model domains – definition, components, taxonomies, representations, change methodologies, and evaluation methods – to Mobile context are selected thanks to Google scholars research and are inserted in the comprehensive classification scheme (Annex 1). According to a careful investigation of this scheme, it is possible to demonstrate that these business model applications pursue different aims:

- Most common scope consists in providing business model framework and analyzing the main Mobile business model components (Pigneur 2002; Faber et al. 2003; Vassilopoulou et al. 2003; Kijl et al. 2005; Ballon 2007; Al-Debei and Avison 2008; de Rever et al. 2009);
- The exploration of most critical choices related to business modeling is another frequent objective (Haaker et al. 2004, 2005; Maitland et al. 2005; Methlie and Pedersen 2007; Ghezzi 2009);
- Some authors concentrate on better understanding of the Mobile arena and of the role of the different actors (Pigneur, 2002; Camponovo and Pigneur 2003);
- Others present taxonomical approach for classifying business models (Leem et. al 2004; Kim et al. 2005).

The above mentioned research aims at including more specific issues related to:

- the search for a common ontology to assess and analyzed the business model adopted by a Mobile player (Pigneur 2002; Camponovo and Pigneur 2003);
- the comprehensive case studies presentation (Vassilopoulou et al. 2003; van de Kar et al. 2003; Kijl et al. 2005; Ghezzi 2009);
- the analysis of critical design issues of business model (Faber et al. 2003; Haaker et al. 2004, 2005; de Rever et al. 2009);
- the comparison of feasible business model configurations (Ballon and Van Bossuyt 2006).

The methodological procedures, in most of the articles, is developed through Mobile case studies based on structured or semi-structured interviews, questionnaires and market surveys but, sometimes, innovative approach are used. For instance Camponovo and Pigneur (2003) conduct their research on the basis of Kaplan and Norton’s Balanced Scorecard, presenting four research areas of analysis (Figure 2.26). According to the authors, each perspective focuses on certain aspects of the Mobile landscape and requires specific observation tools. The innovation perspective deals with the future
The market perspective deals with the demand side of the industry and analyzes demand uncertainties using market surveys and adoption studies. The financial perspective assesses the sustainability and attractiveness of the different actors, services and technologies. The business model analysis is included in the industry perspective that looks at the supply side and assesses strategic uncertainties.

\[\text{Figure 2.26: Mobile Market Scorecard framework}\]

(Source: Camponovo and Pigneur, 2003)

There are not many business model definitions and constructs provided by authors involved in this field, indeed, even if Mobile is just a form of electronic commerce, most of the authors (i.e. Pigneur 2002, Camponovo and Pigneur 2003, Vassilopoulou et al. 2003, Maitland et al. 2005) rely on Timmers (1998) or Osterwalder (2002) business model studies. Anyway major contributions to Mobile field researches are provided by Faber, Ballon, Bouwman, and Haaker that wrote several articles in particular focused on Mobile services. Together with other colleagues, they wrote “Designing business models for Mobile ICT services” (2003) where the business model is defined as “the way a network of companies intends to create and capture value from the employment of technological opportunities.” The definition looks beyond the individual firm and consider the business model for an enterprise, a collaborative effort of multiple companies to offer a joint proposition to their consumers. They also present
a high level conceptual business model framework that is the most accepted and recognized by future researchers and studies. The framework (Figure 2.27) represent the business model as consisting of four interrelated domains:

- **Service domain** describes a firm’s service offering to specific customers/end users in particular market segment. Important components are intended and perceived value;

- **Finance domain** defines how a company intends to generate revenues from a particular service offering. Important elements are: financial arrangements, revenues, costs, risks and investments.

- **Organization domain** deals with the configuration of actors (value network) possessing certain resources and capabilities, which together perform value activities to create value for specific customer;

- **Technology domain** describes the technical architecture and functionality that is needed to realise a certain service offering.

*Figure 2.27: High level conceptual framework*

The studies conducted by the above mentioned authors concentrate on the concept of **critical design issue** defined as “a variable that is perceived to be of eminent importance to the viability and sustainability of the business model under examination and that can be manipulated by practitioners and researchers” (Haaker, Faber and Bouwman, 2004). For this reason, critical design issues related to each specific domain are identified and
analyzed. The Table 2.21 reports these variables divided on the basis of the domain to which refers:

Table 2.20: Critical Design Issues

<table>
<thead>
<tr>
<th>Business model domains</th>
<th>Design issues and description</th>
</tr>
</thead>
</table>
| Service                | 1) **Targeting**: choosing a profitable target group.  
2) **Creating value elements**: formulating a compelling value proposition for end-users.  
3) **Branding**: brands directly influence the perceived value of service offerings. They are used for increasing the visibility of the service and communicating trustworthiness.  
4) **Customer retention**: refers to marketing strategies aimed at keep customers satisfied and loyal. |
| Technology             | 1) **Security**: trust of end-users and customers in a service offering is partly determined by the way security is implemented in the technical architecture.  
2) **Quality of service**: in all cases the technical architecture in delivering the technical functionalities has a profound impact on the service offering and perceived value. A typical performance measure is accuracy of the deployed positioning technology in tracking and tracing services.  
3) **Management of user profiles**: for personalization of a service a user profile that contains user interests, preferences and behaviour must be created and maintained. Management of user profiles requires technical functionality that may be realized in different ways by the technical architecture.  
4) **System integration**: to what extent the new service can be integrated with the existing technical infrastructure partly determines the adoption of the service.  
5) **Accessibility for customers**: is influenced by the choice for an open or closed architecture. |
| Organization           | 1) **Partner selection**: acquiring access to resources and capabilities needed to realize a service offering. A distinction must be made in business actors that provide indispensable and irreplaceable resources and capabilities, and those who provide supporting ones.  
2) **Network openness**: degree to which new business actors can join the value network and are allowed to provide services to customers. Two different organizational arrangements: closed model in which a relatively fixed consortium of partners collaborate, and the wallet garden model in which new partners are able to join the value network if they comply to certain rules.  
3) **Network governance** (or Orchestration of activities): dominant actors, the ones with access to customers and end-users or the ones that developed the service offering, manage the value network. These business actors often
approached and selected collaboration partners, set the rules for the collaboration and monitored the compliance with these rules.

4) **Network complexity** (or Managing relationships with partners): may arise from the number of relations a focal business actor needs to manage and from the efforts needed to couple actors’ IT applications and systems. They tend to reduce complexity by using intermediaries.

**Finance**

1) **Pricing**: a customer pays a certain price to obtain or use a service. For adoption and actual usage of the service, the perceived customer value must balance or exceed the price of service.

2) **Division of investments**: developing and introducing a new service involve financial risks, as there is uncertainty about the resulting return on the investment.

3) **Valuing contributions and benefits**: for fair and viable revenue sharing arrangements, it’s important to value the contribution of each partner to the service offering and the intangible benefits each partner receives.

4) **Division of costs and revenues**: several cases show a connection between incurred costs and revenues. The relation between costs and revenues for each actor seems to depend on the actor’s access to critical resources, the risks and height of investments and the existence of intangible benefits.

(Source: Haaker, Faber and Bouwman, 2004, 2005)

In 2008, Bouwman, De Vos, and Haaker published a book called “Mobile Services Innovation and Business Models” where the above mentioned four domains are studied in detail and the model is called STOF, that is an acronym of Service, Technology, Organization, and Finance. Each domain description present theoretical and design notions about the relevant concepts and issues with regard to that domain (summarized in Table 2.22). The financial part is not available on the web.

*Table 2.21: STOF model relevant and design issues*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Relevant issues</th>
<th>Design issues</th>
</tr>
</thead>
</table>
| Service | - Customer value and innovation  
- Perceived value versus experienced value  
- Value of Mobile services  
- Inhibitors of Mobile service development  
- Individualization of Mobile services  
- Research in adoption and use of Mobile services | - Intended value  
- Delivered value  
- Expected value  
- Perceived value  
- Customer or End-user  
- Context  
- Tariff and Effort  
- Bundling |
| Technology | - Authentication  
- Management of user profiles  
- Security | - Technological Architecture  
- Backbone Infrastructure  
- Access Networks  
- Service Platforms  
- Devices  
- Applications  
- Data  
- Technical Functionality |
|-----------|----------------------------------------------------------|
| Organization | - Customer-aligned  
- Collaborative, systemic, and information-based  
- Agile and scalable | - Actors  
- Value Network  
- Interactions and Relations  
- Strategies and Goals  
- Organizational Arrangements  
- Value activities  
- Resources and Capabilities |
| Finance | Not available | Not available |

(Source: Elaboration from Bouwman et al., 2008)

The introduced concepts are then mapped (Figures 2.28, 2.29, 2.30) showing the boundaries of each domain and consequent theoretical relationships with elements belonging to other domains.

*Figure 2.28: Descriptive model for the service domain*
Figure 2.29: Descriptive model for the technology domain

Figure 2.30: Descriptive model for the organization domain
Also in 2008, Al-Debei and Avison discussed about business model requirements and challenges in the Mobile Telecommunications sector, defining business model as “an abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, co-operational, and financial arrangements designed and developed by an organization presently and in the future, as well all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives.” They presented a business model framework for Mobile network operators (MNO) called V⁴ (Figure 2.31) where they described the business model elements as follows:

1) Value proposition embraces descriptions about core services and products that the MNO offers, or will offer, along with their intended value elements. The nature of targeted individual and business customers along with their wants and needs are also included.

2) Value network component represents the external arrangements which revolve around the communication and collaboration a MNO needs and conducts with other businesses in its value system, including suppliers, third parties, and intermediaries.

3) Value architecture is a broad plan that specifies: (1) Technological (technical) architectures and arrangements that enable cellular communications to operate efficiently and effectively. (2) Organizational arrangements of resources and capabilities including a MNO’s structure, task force, management mindsets, and culture to enable cellular service provisioning as desired. ‘Soft’ issues related to a MNO internal culture are particularly challenging.

4) Value finance includes arrangements related to three categories: (1) Total cost of ownership (TCO) that is the overall cost of MNO core arrangements needed to provide cellular services as intended. (2) Pricing methods, and (3) Revenue structure.

Figure 2.31: V⁴ Mobile BM Dimensions and Interdependencies
On the basis of this representation there are direct relationships between the business model dimensions (solid lines) and indirect relationships (dotted lines).

Other constructs are defined by Methlie and Pedersen (2007) and Ballon (2007). As regard the first one, the business model is composed by three dimensions:

1) **Service Strategy** that includes the service value proposition and the market focus;

2) **Governance Form** that refers to the ways in which flows of information, resources and goods are controlled by the parties of the value-creating business network (the infrastructure);

3) **Revenue Model** that includes revenue valuation and sharing.

According to the authors, it is possible to investigate the main influences of business model options on service attributes that are divided in extrinsic (complementary service variety, speed of development, complementary service quality, and network size) and intrinsic (ease of use, usefulness, compatibility, service quality, and innovativeness).

In his “Business modeling revisited: the configuration of control and value” (2007), Ballon provide a theoretically grounded framework for designing and analyzing business models for (Mobile) information communication technology (ICT) services and systems. According to his view, the business model presents different design parameters that are grouped in two main categories of Control and Value (Table 2.23).

**Table 2.22: Business model design parameters**
A) Value network parameters  

A1) Combination of assets (concentrated vs distributed)  

A2) Vertical integration (integrated vs disintegrated)  

A3) Customer ownership (direct vs intermediated)  

B) Functional architecture parameters  

B1) Modularity (modular vs integrated)  

B2) Distribution of intelligence (centralised vs distributed)  

B3) Interoperability (yes or no)  

C) Financial model parameters  

C1) Cost (sharing) model (concentrated vs distributed)  

C2) Revenue model (direct vs indirect)  

C3) Revenue sharing model (yes or no)  

D) Value proposition parameters  

D1) Positioning (complement vs substitute)  

D2) User involvement (high vs low)  

D3) Intended value (price/quality vs look-in)  

(Source: adapted from Ballon, 2007)

It is possible to summarize the four levels (A, B, C, and D) as follows:

1. Level of value network: architecture of actors and roles in the future marketplace;
2. Level of functional model: architecture of technical components in the future technological system;
3. Level of financial model: architecture of financial streams determining the future business case;
4. Level of value proposition: architecture or general outline of the future product/service.

Other business modelling parameters are identified by Ghezzi and reported in the paper “Emerging business models and strategies for Mobile Middleware Technology Providers: a reference framework” (2009). In this case the Mobile business model construct is characterized by three categories of parameters:

1) *Value proposition parameters*, including Platform characteristics, Offer positioning, Platform provisioning, Additional services, and Resources & competencies;
2) *Value Network parameters*, comprising Vertical integration and Customer ownership;
3) *Financial Configuration parameters*, defining Revenue model and Cost model.

This analysis concludes with an identification of three main emerging business models developed and adopted by Mobile Middleware Technology Providers:
- The “Pure Play” Business Model, characterized by: a value proposition strongly focused on technology, in terms of platform provisioning – in-house installation is preferred to ASP or outsourcing –, additional services – restricted to platform management –, and resources & capabilities – mainly technology-oriented –; a clear positioning on the Platform layer Value Network – distant from the end customer –, bringing about a sharp distinction between the MMTP and MNO/MCSP businesses; and a financial configuration resting on fixed revenues and concentrated investments. The model is therefore defined “pure play” as the MMTPs employing it have pursued a consistent alignment between internal structure and external positioning, totally focused on the role of technology enablement.

- The “Full Asset” Business Model differs from the “pure play” model in the tendency shown by these MMTPs to acquire and/or develop a wide portfolio of assets, resources and capabilities, not only related to the Platform Layer, but also to the Content & Service Layer. Nevertheless, for the moment these players are not leveraging on their “full asset” portfolio, as their actual coverage is still concentrated on technology activities, not being far from the positioning chosen by “pure play” MMTPs.

- The “Platform & Content Management” Business Model deserves attention as its implications for the future development of the whole Value Network can be extremely significant. The MMTPs employing this model have extended their reach to the Content & Service Layer, embracing a integrated technical-commercial management of Mobile digital content. Their value proposition lists to hosting solutions of platform provisioning, to additional services related to content market making, and to content-oriented resources & capabilities; their vertical integration is high, covering activities which grant higher customer ownership; their financial configuration sees the possibility of establishing revenue sharing agreements, as well as joint investments.

Which is interesting is the effort in combining these business models to specific strategy patterns since the relation between business modeling and strategic choices related to Mobile is sector is definitely underdeveloped. In the above mentioned case, Pure Play, Full Asset, and Platform & Content Management Business Models are associated
respectively with “Stay on core”, “Grow, wait, and see”, and “Aggressive downstream” Strategies.

Even if the classification proposed by Ghezzi (2009) relates on specific players - Mobile Middleware Technology Providers -, it constitutes a relevant example of taxonomical approach to Mobile business models classification. Other studies aimed at categorizing business models in the Mobile business are provided by: Leem et al. (2004), Kim et al. (2005), Ballon and Van Bossuyt (2006). Leem et al. (2004) present a Mobile classification scheme that distinguishes between B2C and B2B/B2E businesses and, for both, identifies the main categories (Figure 2.32).

*Figure 2.32: Mobile business model classification scheme*

![Diagram of Mobile business model classification scheme](Source: Leem et al., 2004)

In the B2C model:
- the Commerce model provides Mobile content and/or services for direct commercial transaction (subcategories are: digital, physical and service);
- the Intermediary model delivers Mobile content and/or services from other sources to customers (subcategories are: stock information, content);
- the Information model provides personalized information to customers’ Mobile terminals generally push basis (subcategories are: advertisement, personalized information).
Differently from Leem et al. (2004), Kim et al. (2005) approach their Mobile business models taxonomy on the basis of business model patents of Mobile business registered in the USPTO, especially in the 750 class. The results of the analysis consist in seven Mobile business model clusters as reported by the Table 2.24:

Table 2.23: Taxonomy of business model on m-business

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization</td>
<td>Grouping of the patents about optimizing the dispatching of resources such as vehicles, data and network. This cluster also includes patents about medical dispatching system and waging optimization system.</td>
</tr>
<tr>
<td>Personalized Service</td>
<td>Set of patents which are aimed to meet the characteristics or needs of individual customers. Patents about medical service, parking service, restaurant service and any other services focused to specific individuals are some examples.</td>
</tr>
<tr>
<td>Verification</td>
<td>Cluster of patents about verifying the certificates or authorizations of credit or access.</td>
</tr>
<tr>
<td>Reservation</td>
<td>Grouping of patents which deal with various issues about reservation. Patents about electronic ticketing, airline reservation, and nursing system are some examples.</td>
</tr>
<tr>
<td>Transaction</td>
<td>Cluster of patents which are used in the commercial transaction of products and services. Patents about purchasing system, POS (point of sale), interactive advertisement and cyber mall are the examples of the elements of transaction.</td>
</tr>
<tr>
<td>Portable Service</td>
<td>Set of patents about various activities with portable devices such as portable terminals, smart cards, and Mobile phones are some examples.</td>
</tr>
<tr>
<td>Support</td>
<td>Grouping of patents which deal with various activities of supporting value chain. Patents about electronic location-based marketing, connecting Mobile terminal to a database, and system for distributing. Automobiles are some examples.</td>
</tr>
</tbody>
</table>

(Source: Kim et al., 2005)

The seven clusters can be considered as what firms wish to protect from infringement of. It is different from classifications of literatures on business model classification which tried to cover all possible business models relied on the intuition of researchers because it is based on inductive research.

Another classification is provided by Ballon and Bussoyt (2007) and focuses on the comparison of four feasible business model configurations for multimedia content distribution platforms. They are:

1) Integrated Network Operator Model;
2) Wholesale Model;
3) B2B Platform Provider Model; 
4) Third Party Service Provider Model.

Even if the above mentioned taxonomies relate to different problems and approaches, they constitute useful examples of how the business model concept can be applied to the Mobile market in order to clarify the nature of the services offered, the role of Mobile players, or their models.

As it possible to note, the five model proposed (Bouwman et al.’s (2008) STOF model; Al-Debei and Avison’s (2008) V framework; Methlie and Pedersen’s (2007) business model; Ballon’s (2007) value and control model; and Ghezzi’s (2009) three parameters model) all present at least one element that is specific to the Mobile context. It is the Service component in the case of Bouwman et al. and Methlie and Pedersen, the Architecture in the case of Al-Debei and Avison and Ballon, and the Platform in the case of Ghezzi. For this reason they have not been considered in the analysis of components (section 2.2) that constitutes the basis for the original framework formation, indeed the inclusion of Mobile specific elements would have altered the results of the study and this is in conflict with the necessity of creating a general model that is applicable to any companies. Furthermore considering these Mobile components would have meant incurring in the so called tautological model, where the final result is true for definition because it is verified in a context that has been already used for building the concept. Anyway reporting the Mobile business model literature is relevant in order to demonstrate that the topic assumes a higher and higher importance in this field and to encourage comparisons between the already existing specific framework and the general one built in this work.

2.8) Conclusions

As shown above, Section 2, Literature Critical Analysis, based on an accurate study of the classification scheme, has built a research stream that collects the main theoretical discussions about business models.

The analysis started from the identification of more than 60 different business model definitions and more than 200 related components (included those specific of Mobile market). Then it was possible to classify those building elements according to the frequency and significance, evaluated on the basis of number of references. This classification facilitates the comparison of this variety of parameters and, among all
important findings detected, there is the central role played by the Value that also shows different meanings on the basis of the business actor interested, is it the company, the customer, or the business network.

Furthermore the section reporting the business model taxonomies shows how it is possible to apply the concept to concrete markets, here the focus is strongly linked to electronic commerce and this is particularly interesting to the work that aims at the application to Mobile industry, that is a form of Internet commerce.

After that, the investigation moves to the relationship between business model and strategy found as a literature open issue. What results from comparison of different authors’ opinions is a relevant agreement on interpreting the business model as an operationalization of the strategy.

The explanation of this role of strategy execution implies first a deeper study of business model innovation, identified by most authors as a fundamental characteristics leading to guarantee the company competitive position and to improve its performances.

According to this analysis, relevant findings are related to the importance of allowing external innovations entering the company boundaries, controlling a business model lifecycle, and facilitating the change thanks to a strong managerial commitment on business model innovation.

At this point, it was possible to argue that the business model design process is a necessary step in the strategic macro-process, positioned between the traditional planning and operating processes, because it allows to assign specific business model options on the basis of the strategic alternative chosen for the implementation and to experiment the above options in order to find the one best adapting to the company situation. According to this latter concept, experimenting becomes a pivotal point in the overall strategic process because it allows to detect signals of anomalies in the values of the business model parameters thus questioning the company’s current strategic decisions. By isolating the discontinuity identified, this phase allows to understand when it is necessary to rethink and reformulate the strategy.

Last section is instead completely dedicated to introducing the application of business models in the Mobile telecommunications industry, reporting the existing studies on this subject. It results that few models have been proposed and discussed, and that it not so immediate to adapt a unique combination of parameters, or business model framework, to a high variety of Mobile players.
Section 3

3) UNIFIED BUSINESS MODEL FRAMEWORK

Having presented a comprehensive analysis of business model literature and its place in the strategic macro-process of the company (see Section 2), it is now possible:

- to propose an original definition of the business model;
- to illustrate its components and building elements in detail;
- to define the boundaries of the concept.

Concerning a unified business model definition, the present work proposes the following:

“The business model is a synthetic representation of the logic that the company adopts in order to execute its strategy. It describes the value model (i.e. what value means for the company, its business network, and the customer), the creation and delivery of that value, and the value capturing (i.e. how the firm internalizes a share of that value).”

The components of the business model can thus be represented as follows:

![Figure 3.1: Business model](Source: original elaboration)

It is important to consider that:

- The three business model components reflect the recurring theme of value in literature. Indeed, the essence of strategy is to create superior value for customers and capture a greater amount of that value than competitors (Porter, 1985). The business model
framework, by representing the strategy operationalization, is organized around that idea.

- The business model is *customer centric* in the sense that it starts with the decision of target segments and the formulation of the value proposition to offer to the customer but it is also strictly dependent on business network structure and actors involved;
- Each business model element is formulated on the basis of *strategic choices* taken by the top management and contribute to put them into practice, however it is nonsense to consider strategy as a business model element since they are two separate concepts;
- It is better if the business model is *visually* represented because, in this way, it can be immediately and clearly communicated and shared with internal workers, partners and shareholders.

It is now necessary to go in detail of each business model component, defining what it means (Table 3.1) and which are the building elements that express it. Then it will be possible to demonstrate that precedent authors’ construct can be classified in the unified business model framework and that the elements that do not take part to the classification are in reality out of the business model boundaries even if strongly interrelated with it.

*Table 3.1: Business model components description*

<table>
<thead>
<tr>
<th>BM component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value model</td>
<td>It describes which are the market segments that the company wants to serve, what means value for the customer, and which is the value proposition offered to each segment. Thus it represents the double meaning of value that is expressed both in terms of value for the company/network and value for the customers. It answer to questions like: “Which is the company’s offering? What does the customer value? Why does the firm serve these segments of the market?”</td>
</tr>
</tbody>
</table>
It defines the ways in which the company is organised and succeeds in establishing and maintaining relationships with the value network (links to suppliers, partners and customers), and the means by which the value is transmitted to the customer. It answers to questions like: “How does the company organise? Which are key processes and activities? How is the value chain structured? Who is part of the value network? How does the company interlinks with other value network members? How is it possible to deliver the value to the customers?”.

It takes into account the economic and financial aspects that make it possible for the company to appropriate the value created and distributed in order to survive and, eventually, grow during the years. It provides an answer to questions like: “How does the firm make money? Which are key financial aspects (e.g. cash flow, financial structure…)? Which is the company profit potential and related revenue model, pricing methods, and cost structure?”.

(Source: personal elaboration)

According to these definitions, it is possible to define a further level of decomposition of the business model concept, thus the components are divided in the following building elements (Table 3.2):

Table 3.2: Second level decomposition of the business model concept

<table>
<thead>
<tr>
<th>BM component</th>
<th>Building elements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value model</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value model</td>
<td><strong>Target segments</strong></td>
<td>Which market segments the company wants to serve.</td>
</tr>
<tr>
<td><strong>Customer value</strong></td>
<td></td>
<td>What does the value for the customer according to the specific segment.</td>
</tr>
<tr>
<td><strong>Value propositions</strong></td>
<td></td>
<td>Which offering proposal are made to the customer segments.</td>
</tr>
<tr>
<td><strong>Value creation and delivery</strong></td>
<td><strong>Organization</strong></td>
<td>How the company organise at macro-level, defining organizational units grouping criteria and coordinating mechanisms that allow to internally create the value.</td>
</tr>
<tr>
<td><strong>Value chain</strong></td>
<td></td>
<td>How value added is created and distributed by primary activities, and supported by secondary activities.</td>
</tr>
<tr>
<td><strong>Value network</strong></td>
<td></td>
<td>How the value is created thanks to the business network.</td>
</tr>
</tbody>
</table>
Revenue model
How the company makes money.

Cost structure
How the company manage the costs.

Financial aspects
Which is the financial situation of the company.

(Source: personal elaboration)

Before describing each second level element in detail, the aim is to show that the unified business model construct has been inspired by the analysis of a consistent business model literature (as the table A.2 in the Annex 1 documents). Therefore it is possible to draw a table that demonstrate that each business model components identified in the analyzed pieces of work can be classified according to the construct.

**Table 3.3: Classification of BM components in the Framework**

<table>
<thead>
<tr>
<th></th>
<th>VALUE MODEL</th>
<th>VALUE CREATION AND DELIVERY</th>
<th>VALUE CAPTURING</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timmers (1998)</td>
<td>Product, service and information flows; Actors potential benefits</td>
<td>Business actors and roles</td>
<td>Revenue sources</td>
<td></td>
</tr>
<tr>
<td>Hamel (2000)</td>
<td>Customer interface; Strategic resources; Value network</td>
<td></td>
<td>Core strategy</td>
<td></td>
</tr>
<tr>
<td>Linder &amp; Cantrell (2000)</td>
<td>Value proposition</td>
<td>Commerce process model; Internet-enabled commerce relationship; Organizational form; Channel model</td>
<td>Pricing model; Revenue model</td>
<td></td>
</tr>
<tr>
<td>Mahadevan (2000)</td>
<td>Value stream</td>
<td>Logistical stream</td>
<td>Revenue stream</td>
<td></td>
</tr>
<tr>
<td>Papakirikopoulos et al. (2001)</td>
<td>Actors; Relationships</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petrovic et al. (2001)</td>
<td>Value model</td>
<td>Production model; Customer relations model</td>
<td>Revenue model; Capital model</td>
<td>Market model; Resource model</td>
</tr>
<tr>
<td>Alt &amp; Zimmerman (2001)</td>
<td>Structure; Processes</td>
<td>Revenues</td>
<td>Mission; Legal issues; Technology</td>
<td></td>
</tr>
<tr>
<td>Author</td>
<td>Model Elements</td>
<td>Value Creation and Delivery</td>
<td>Value Capturing</td>
<td>Not classified</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Weill &amp; Vitale (2001)</td>
<td>Value proposition</td>
<td>Sources of revenues</td>
<td>Strategic objectives; Critical success factors; Core competencies</td>
<td></td>
</tr>
<tr>
<td>Afuah &amp; Tucci (2001)</td>
<td>Customer value</td>
<td>Revenue sources; Connected activities; Implementation</td>
<td>Pricing</td>
<td>Scope; Sustainability; Capabilities</td>
</tr>
<tr>
<td>Yu (2001)</td>
<td>Products; Services</td>
<td>Customers; Promotion; Distribution</td>
<td>Costs; Prices; Revenues; Profits</td>
<td>Markets; Market share; Economic scale; Marketing strategies; Assets; Competitive advantage</td>
</tr>
<tr>
<td>Gordijn et al. (2001)</td>
<td>Market segments; Value offering</td>
<td>Actors; Value activity; Stakeholders network; Value interfaces; Value ports; Value exchanges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magretta (2002)</td>
<td>Who is the customer; What does the customer value</td>
<td>How to deliver value at an appropriate cost</td>
<td>How do we make money; What is the underlying economic logic</td>
<td></td>
</tr>
<tr>
<td>Chesbrough &amp; Rosenbloom (2002)</td>
<td>Value proposition; Market segment</td>
<td>Value chain; Value network</td>
<td>Cost structure and profit potential</td>
<td>Competitive strategy</td>
</tr>
<tr>
<td>Osterwalder (2002)</td>
<td>Value proposition; Target customer segments</td>
<td>Activity configuration; Partner network; Information strategy; Trust and loyalty; Distribution channels</td>
<td>Cost structure; Revenue model; Profit model</td>
<td>Capabilities; Resources and assets</td>
</tr>
<tr>
<td>Hedman &amp; Kalling (2002)</td>
<td>Offering</td>
<td>Customers; Competitors; Factors and production input suppliers; Activities and organisation</td>
<td></td>
<td>Resources; Market trends; Regulation; Technology</td>
</tr>
<tr>
<td>Pateli &amp; Giaglis (2003)</td>
<td>Target market; Value proposition</td>
<td>Key activities; Value chain/network</td>
<td>Cost and revenue model</td>
<td>Resources; Mission</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Value Model</td>
<td>Value Creation and Delivery</td>
<td>Value Capturing</td>
<td>Not classified</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Osterwalder (2004)</td>
<td>Value proposition; Target customer</td>
<td>Customer interface; Value configuration; Partnership; Distribution channel</td>
<td>Cost structure; Profit potential</td>
<td>Capability</td>
</tr>
<tr>
<td>Yip (2004)</td>
<td>Value proposition; Nature of inputs; nature of outputs</td>
<td>How to transform inputs; Vertical scope; Horizontal scope; Nature of customers; how to organise; Geographical scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shafer et al. (2005)</td>
<td>Strategic choices</td>
<td>Value network; Create value</td>
<td>Capture value</td>
<td></td>
</tr>
<tr>
<td>Richardson (2005)</td>
<td>Value proposition</td>
<td>Value creation and delivery</td>
<td>Value capture</td>
<td></td>
</tr>
<tr>
<td>Tikkaten et al. (2005)</td>
<td>Structure; Business network; Operations</td>
<td></td>
<td>Finance and accounting</td>
<td>Strategy</td>
</tr>
<tr>
<td>Mansfield (2005)</td>
<td>Customer centricity</td>
<td>Value creation potential; Intermediation; Technology infrastructure management</td>
<td>Economic innovativeness; Macroeconomic positioning; Market exploitability</td>
<td></td>
</tr>
<tr>
<td>Morris et al. (2005)</td>
<td>Offering factors</td>
<td>Market factors</td>
<td>Economic factors; Personal/investors factors</td>
<td>Competitive strategy; Internal capability factors</td>
</tr>
<tr>
<td>Lehmann-Ortega &amp; Schoettl (2005)</td>
<td>Value proposition</td>
<td>Value architecture</td>
<td>Revenue model</td>
<td></td>
</tr>
<tr>
<td>Rasmussen (2007)</td>
<td>Who are the customers; What do they value</td>
<td>How the business deploys its assets; How the value can be delivered</td>
<td>Which is the appropriate cost</td>
<td></td>
</tr>
<tr>
<td>Verstraete &amp; Jouison-Laffitte (2007)</td>
<td>Value generation</td>
<td></td>
<td>Value remuneration; Value division</td>
<td></td>
</tr>
<tr>
<td>Teece (2009)</td>
<td>Value creation; Value delivery</td>
<td></td>
<td>Value capture</td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Model/Element</td>
<td>Creation and Delivery</td>
<td>Capturing</td>
<td>Not classified</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Zott &amp; Amit (2009)</td>
<td>Transaction content</td>
<td>Transaction structure; Set of activities; Value chain; Technological inputs</td>
<td>Transaction governance; Economic outputs</td>
<td></td>
</tr>
<tr>
<td>Johnson &amp; Christensen (2009)</td>
<td>Customer value proposition</td>
<td>Key processes</td>
<td>Profit formula</td>
<td>Key resources</td>
</tr>
<tr>
<td>Goethals (2009)</td>
<td>Offering model</td>
<td>Inter-organizational model; Customer relationship model; Execution model; Control model</td>
<td>Compensation model</td>
<td></td>
</tr>
<tr>
<td>Ghezzi (2009)</td>
<td>Value proposition</td>
<td>Value network</td>
<td>Financial configuration</td>
<td></td>
</tr>
<tr>
<td>Lindgardt et al. (2009)</td>
<td>Target segments; Product or service offering</td>
<td>Value chain; Organization</td>
<td>Revenue model; Cost model</td>
<td></td>
</tr>
<tr>
<td>Gunzel &amp; Wilker (2009)</td>
<td>Transaction content</td>
<td>Transaction structure</td>
<td>Transaction governance</td>
<td></td>
</tr>
<tr>
<td>Itami &amp; Nishino (2010)</td>
<td></td>
<td>Business system</td>
<td>Profit model</td>
<td></td>
</tr>
<tr>
<td>Smith et al. (2010)</td>
<td>Strategic choices; Value</td>
<td>Organizational architecture</td>
<td>Resources; Competencies</td>
<td></td>
</tr>
<tr>
<td>Demil &amp; Lecocq (2010)</td>
<td>Value propositions</td>
<td>Organizational structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doz &amp; Kosonsen (2010)</td>
<td></td>
<td>How to set boundaries; how to create value; How to organise</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: personal elaboration)

The above table facilitates some observations:

- More than 60% of constructs (23 over 38) cover all the three areas of Value model, Value creation and delivery, and Value capturing. Hamel 2000, Papakirikopoulos et al. 2001, and Doz & Kosonsen 2010 concentrate only on the Value creation and delivery element.
- More than 42% of authors (16 over 38) identify some components that exit from business model concept boundaries (i.e. “not classified” column that will explained later).

- Each considered author reports at least one item as regards the Value creation and delivery element, while more than 20% (8 over 38) do not consider the Value model elements and even more than 26% (10 over 38) do not take into account Value capturing issue. The Value model missing element can be referred to the fact that it is usually included in the strategy concept (Hamel 2000; Tikkaten et al. 2005). Instead the Value capturing case denies the prejudice that business model is often seen as a mere revenue model.

As it possible to note, “Not classified” column reports those elements that some authors consider as part of the business model, but that is better to consider as separate not to make confusion. Indeed, as Figure 3.2 reports, business models results from three general elements that influence and interrelate with it but are not part of it:

\[Figure\ 3.2: \textit{Influences on business model concept}\]

\begin{center}
\includegraphics[width=\textwidth]{figure3_2.png}
\end{center}

(Source: personal elaboration)

- \textit{Technology}: refers to ICTs and technological change as external forces influencing the business model design. It provides the opportunities for business model improvement and optimization, or even it makes obsolete the current business model but it is not part of it. For instance, as explained by Linder and Cantrell (2000), Internet is not a new business model but the growing use of the Internet requires companies to change business model and this is more evident for those firms that could dramatically and
immediately improve by using it. Furthermore they observe that Internet contributes to increase the pace to business model change and that companies can use it to help them change faster.

- **Strategy**: includes the company competitive advantage, the mission, and the basis for differentiation. It defines goals and company positioning providing guidelines in order to build the business model but not taking part of it. Strategy does not concentrate on any particular aspect, but on the totality constituted by the components of the business model (Tikkanen et al. 2005).

- **Firm-specific resources and competencies**: according to Hamel and Prahalad (1990), the resources include physical or material assets and intangibles, like the brand or the know how; while the competencies are the company’s collective knowledge about how to coordinate diverse production skills and technologies. They both are independent from business model formulation because they result from many years of expertise and application; they ensure the provision of benefits to the client and facilitate the inimitability of company core activities and processes. For this reason a successful business model cannot exist without resources and capabilities, anyway they contribute to define the foundations of the concept but are separate notions.

- **External environment**: considers the legal and social issues that directly influence the customer demand. For this reason the value proposal made to the customer, as business model element, has to adapt to the changing environment both in the case of new opportunities/constraints due to the legal issue and of new offerings/limitations due to the modified social acceptance.

### 3.1) The nine building elements

It is now possible to summarize the business model concept (Figure 3.3) and to investigate each building element in order to explain its meaning and function within the business model unified framework.

*Figure 3.3: Business model, components, and related building elements*
Value Model components

1) **Target segments**: identify the specific customer segment for which the company creates value. They define which are the boundaries of the competition for the company in terms of customers, geographical areas and products/services (Osterwalder 2002).

2) **Customer value**: refers to the identification of what customer perceive as valuable, and includes the investigation of explicit and latent needs, the way of communications with the customers, and the capabilities to manage the relationships with them (Papakiriakopoulos, 2001).

3) **Value propositions**: refers to different products and/or services offered to the customers. The value propositions formulation depends on two different approaches: the company can transform the knowledge collected on customer value into specific value offerings according to the customer segments in which the company wants to compete.
(market pulled approach) or adapt a technological breakthrough to customer needs by proposing different value offers according to the positioning strategies (technology pushed approach).

The relationships between the three building elements related to Value Model can be represented by a simplified scheme (Figure 3.4).

*Figure 3.4: Value model components relations*

![Diagram showing relationships between Target segments, Value propositions, and Customer value](image)

Market pulled approach
Technology pushed approach

(Source: personal elaboration)

In both market pulled and technology pushed cases, it is the value perceived by the customer that influence the market segmentation and positioning, but the initial perspectives are different. According to the first approach, it is the segmentation that facilitates the proposal of different offerings, while in the second one, it is the value propositions derived by a technological innovation discovered that are adapted to customer needs in order to influence the perceived value. These two views are not independent or extreme cases, indeed the market pulled approach cannot be effective without an analysis of available technologies and the technology pushed approach cannot avoid to take into account customer expectations.

**Value Creation and Delivery**

4) **Organization**: refers to the definition of organizational units grouping criteria and coordinating mechanisms, where the former is related to the organizational configuration (is it simple, functional, divisional, hybrid, or matrix) and the latter includes the organizational structure (is it vertical/hierarchical or horizontal/lean).
5) **Value chain**: means defining the structure that the company requires in order to create and distribute the offerings (Chesbrough and Rosenbloom, 2002). This is translated in primary and support activities where the creation of value can be related to the overall system of activities, to a single activity, or to the links between two or more of them.

6) **Value network**: provides information related to the value creation aspects derived by the cooperation between different firms (associated to different value chains) in the business network. It includes suppliers, partners, distribution channels, and coalitions that extend the company’s own resources (Hamel, 2000). The identification of network participants has to be complemented by the relationships existing among them and by the definition of the role of the company under analysis.

Company’s organization, value chain and value network relationships can be summarized by the following Figure 3.5:

*Figure 3.5: System of Value creation*

![System of Value creation](Source: personal elaboration)

**Value Capturing**

7) **Revenue model**: describes the logic through which the company receives compensation in return for the products/services (Petrovic and Kittl, 2001). It measures the ability of a firm to translate the value it offers its customers into money and therefore generate incoming revenue streams. A firm’s revenue model can be composed of different revenue streams that all have different pricing models (Osterwalder, 2002).

280 Chapter 2
8) **Cost structure**: measures all the costs the firm incurs in order to create, market and deliver value to its customers (Osterwalder, 2002). The difference between Revenue model and Cost structure originates the Profit potential that is thus considered a consequence of the other two components and not a direct business model building element.

The relationship between Revenue model and Cost structure depends on different logics and pricing methods. The company can fix a certain margin and move back to costs (top-down approach, Figure 3.6) or calculate a certain cost of production/provision and then decide the product/service price and related profit (bottom-up approach, Figure 3.7). The company can also combine the two logics using a hybrid approach.

**Figure 3.6: Top-down approach**

1) Define the target for the PROFIT POTENTIAL (PP)

2) Decide the PRICING METHOD ($)

3) Calculate resulting REVENUE MODEL ($*Q)

4) Calculate related COST STRUCTURE (RM-PP)

**Figure 3.7: Bottom-up approach**

1) Estimate the COST STRUCTURE (CS)

2) Decide the PRICING METHOD (CS + ∆$)

3) Calculate resulting REVENUE MODEL ((CS + ∆$) *Q)

4) Calculate the PROFIT POTENTIAL (RM-CS)

(Source: personal elaboration)

9) **Financial aspects**: consider the financial situation of the company at a macro-level in order to give an idea of liquidity available for investment. Indeed, as we have seen, the experimentation is a central part of the business model concept, however initiating an experimenting plan is not for free. It implies having the money necessary in order to study business model options, to plan them, and to
test them in the company environment. Thus this includes the decisions related to the cash flows, capital budgeting, financial resources and configuration of the company.
Section 4

4) FRAMEWORK APPLICATION

4.1) Mobile context: reason for the choice of application

As anticipated in the paragraph 2.7, that has illustrated the business model literature applied to the Mobile context, this field of analysis is ideal for the framework to be applied and verified for many reasons. First, the necessity for Mobile player of revising their current business model is identified as a priority by most part of the professionals and academics working in the context. This necessity arises from the higher and higher competition characterizing that market, which call for new sustainability programs and defensive measures that Mobile companies have to take in order to protect themselves respect to new entrants. Second, the convergence of Mobile, Internet and Media contexts offers an opportunity of gaining customers and offering new products and services to computer and software manufactures (e.g. Apple, Microsoft) and traditional Internet giants (e.g. Google, YouTube). Thus this constitutes a relevant threat for Mobile actors also because Internet world is characterized by the Free logic that instead is absolutely unsuitable in the case of Mobile that has the necessity to capitalize on its investments. Finally, as we will see in details in next paragraphs (4.1.1 and 4.1.2), Mobile market is a clear example of how some business model foundations, in particular the value creation logic and the importance of the value network, are moving away from traditional strategic model in order to include more innovative views. This is the case of extension of the traditional value chain model (Porter, 1985) to value networks and of application of open innovation principles - discussed in section 2.5.1 - that gain a greater importance when associated to the Mobile business calling for the necessity of increased coordination and communication mechanisms with partners and even collaboration with competitors. Innovation sources have not to be looked for internally but the company has to open up to co-opetitors, that are cooperative competitors.

4.1.1) From Value Chains to Value Networks

The technological advancements that open additional possibilities for collaboration with distribution and supply partners, for participation in virtual trading communities or
dynamic virtual organizations, necessitates for extending classic value chain model (Porter, 1985) to value networks. The applicability of the traditional value chains has been questioned by several authors as it emphasizes the concept of competition and does not take into fair consideration the more and more complex networks of both horizontal and vertical relations existing among firms (Ghezzi, 2010). Looking specifically at the Mobile Telecommunications Industry, it is possible to underline the necessity of deconstructing the actual value chains of Internet, Telecommunications, and Media companies, unbundling the different value added activities and then recomposing them in order to create new configurations (Wirtz, 2001). Analyzing the telecom industry in terms of value chain is no longer an appropriate or valid mechanism (Haaker et al., 2006; Peppard and Rylander, 2006; Bouwman and MacInnes, 2006; Ballon, 2007) and representing Mobile Network Operators’ interrelationships with other telecom industry players as a linear value chain is no longer effective (Berkhout and van der Duin, 2004). The value networks of emerging Mobile services are more dynamic and complex than the old, rather static telecom centric value chains for Mobile services: the old telecom value chain is slowly deconstructing and transforming towards a more complex value network with the entrance of new players and stakeholders (Li and Whalley, 2002). It is expected that more and more flexible value networks will arise and replace the current, more traditional, static and linear value chains (Miller and Lessard, 2000). These new value networks have more as well as new players from different industries. These players are increasingly operating in each others, formerly separated, markets like IT, telecom, consumer electronics, and media (Galli et al., 2005). By having a value network view, organizations are better able to recognize structural changes like the shift from traditional competition to complex networks of organizations (Middeldorp, 2005).

Most common dynamics due to the complex relationships within the network are:

- **network effects**: externalities that occur when a transaction between two actors affects, as a side-effect, a third party that is external to the transaction. The value of being part of the network increases as the network expands and the number of its users gets bigger. (Camponovo and Pigneur, 2003)

- **lock-in and lock-out**: effects that verify when strong links formed with a player constraint the creation of links with other actors. They can be related to limited resources that an actor can invest in creating relationships thus limiting their number; and “one-to-one” relationships that, due to the level of mutual trust and
interaction requested, do not allow to create links with firms that are competitors respect to one’s own partner. (Ghezzi, 2007)

- **learning races**: cases where firms involved in a relation find themselves competing in a race for internalizing the partner’s assets and resources, before leaving the alliance. This is most likely to happen when private benefits acquirable by any of the partners after they have learnt from the other exceed the common benefits of the alliance (Hamel et al., 1989; Wirtz, 2001).

Besides these three dynamic variables, also seven “static” variables were identified to describe a value network (Ghezzi, 2010):

- **network focal**: referring to the firm positioned in the centre of the network, controlling the original source of value, and linking the “peripheral” firms;
- **critical network influences**: referring to the most significant value creating relations between firms;
- **structural equivalences**: referring to the condition where two or more members hold a similar position within the network;
- **structural holes**: referring to the situation where two or more firms within a network are connected only through the focal firm;
- **revenue streams**: referring to the direct or indirect exchanges of revenues between network members.

A comprehensive description of this complex network environment is proposed by the “Network Value Analysis” (Peppard and Rylander, 2006) that aims to define where the value lies in the network and how it is created. It is articulated in five steps:

1) Definition of network objectives: to define the boundaries of the analysis from the “network focal” point of view because it is the main subject of the analysis.
2) Identification and definition of network participants: to individuate the actors that influence the value that the network focal company distributes to its final customers;
3) Identification of value dimensions of network participants: since value effectively delivered can differ from value perceived, it is essential to understand what the network members intend for value;
4) Definition of network influences: to identify the nature of links between members of extended network in order to evaluate their impact and understand the weight of each actor within the business model of the focal company;
5) Analysis and modeling: to provide a support to activities of analysis of strategic relations between actors and possible future competitive scenarios.

Anyway, even in the new digital markets, Value Network model does not want to substitute the Value Chain one but simply to extend its research field including the links with third parties, the perceived value, and social behavior of firms (Ghezzi, 2007). Value chain and Value network can be seen as complementary concepts, that combined can give indications on whole Value Configuration of a sector (Huemer, 2006). This is demonstrated by the fact that they both have been identified as business model building elements.

4.1.2) Mobile trend: towards the era of co-opetition

The numerous Mobile commerce characteristics and actors involved cause a particular complexity in Mobile communication industry. Several issues related to collaboration, communication, and co-ordination are prevailing and are linked to the need for a more complex and open system (Al-Debei and Avison 2008). These imperatives, together with a more and more strong competition that is eroding Mobile companies’ margins, can be translated in a situation of co-opetition that is the neologism coined to describe the cooperative competition.

Initial contributions to this topic were provided by Brandenburger and Nalebuff in their book “Co-opetition” (1996) where the concept is associated to creating and capturing value. The former is an inherently cooperative process, while the latter is inherently competitive. Later, some other definitions of co-opetition have been provided by researchers and particularly by those involved in Mobile market studies. According to Koivukoski and Raisanen (2005) the co-opetition refers to a new mindset of business that combines competition and cooperation, and this is becoming a common way of working in the new networked economy. As regards the Mobile industry, they added that “the phenomenon illustrates how the same companies are simultaneously complementing each other and engaging in competitive activities. These new value networks facilitate the spreading of knowledge and developing industry wisdom on how things could and should be done, as well as cumulating a critical mass of competences and contributors to run service provisioning activities in a multinational environment. [...] Whereas providing value in terms of innovation may be easy, the actual capturing value and creating a unique proposition is getting harder and harder”. Feldmann (2005) underlines that the concept of co-creation describe the process of value creation in
Mobile media markets best because it provides new insights into the discussion and integrates the role of complementors – players who provide complements – in value networks that may be taken by social networks. Hesselman and Giannelli (2009) state that co-opetition refers to the collaborative arrangements of two or more competitors while at the same time these firms compete at the market. Gentzoglani (2010) observes that in an increasingly competitive world, erstwhile competitors realize that innovation requires more than large market shares and market dominance, it needs co-opetition. It is used to create a competitive advantage in innovation processes involving all “co-opetitors”, that is, their network of suppliers, users and customers. Collaborative ventures with other industry stakeholders lead to greater coordination of the innovative activities to reduce the uncertainty associated with technological changes across sectors. Co-opetition, path dependence, spillover effects and standardization add considerable complexity to the exploitation of network-based innovations, but reduce the risks associated with innovations in converging industries.

These perspectives are build on the idea that competitors should not just be considered as rivals for market dominance but also as valuable sources of innovation (Hesselman and Giannelli, 2009) and this is the reason why the concept of co-opetition is strongly related to that of open innovation.

4.2) Methodological approach and objectives

On the basis of the unified business model framework defined in section 3 and of considerations derived from the analysis of Mobile context, it is now necessary to conduct a qualitative analysis that aims to validate the above mentioned framework. The methodological literature (Yin, 1989, 1993, 1994; Feagin et al., 1991; Ragin and Becker, 1992; Stake, 1995; Tellis, 1997 [a], 1997 [b]; Flyvbjerg, 2006) suggests for this purpose the choice of “Case Research” that is founded on Case Studies because they allow to describe modal and causal aspects phenomena related to social sciences. The choice is also supported by the extensive use of Case Study both in the conceptual papers belonging to business model literature analyzed in the Annex 1 and in the market research and consulting field.

The Mobile players included in the analysis are:

- **Mobile Network Operators (MNOs):** that own the 3G (UMTS) license and network, and are responsible for the provisioning of its functionalities. They
control other market’s essential facilities and assets, like the Mobile Portal, the charging-billing-accounting-reporting systems, the customer “SIM” card, and the strong brand identity and large customer base. Indeed their role typically covers the “Network Infrastructure” layer characterised by Interconnection, Network Orchestration, Billing & Accounting Functionality, and Quality of Service (QoS) Management; but they are also responsible for Content & Service Delivery and Market Making, taking care of service Delivery, Charging/Billing/Accounting and Customer Relationship Management (CRM).

- **Device Manufacturers (DMs):** that focus on the manufacturing of Mobile/Wireless devices employed by End-users to get access to Content and Services (e.g. cell phones, smart phones, PDAs, …). Their role typically covers the “Device” layer that is composed by Device Design, Manufacturing, and Provisioning. DMs’ agreements with MNOs assume a high importance within the Mobile competitive market.

On the basis of the actor considered, the analysis will take into account the business model building elements constituting the framework (target segments, customer value, value propositions, organization, value chain, value network, revenue model, cost structure, financial aspects) and for each of them the logic of the Value Range will be applied (Ballon, 2007; Ghezzi, 2009). This means that the extreme values that the variables can assume are identified; these values also represent the major trade-off between the opposite choices.

In order to execute this type of analysis, the work pursues three specific objectives:

1. to adapt the most critical choices to be made at a business modelling level identified by the unified business model framework to specific Mobile players, like Mobile Network Operators and Device Manufacturers;

2. to understand which is the Value Range that these parameters can assume;

3. to delineate what are the most significant business implications derived from the adoption of different choices related to the Value Range.

Table 4.1 summarizes the players chosen for the direct interviews conducted from January to June 2010 within the Osservatori of Mobile Content & Internet:
Table 4.1: Case studies list

<table>
<thead>
<tr>
<th>Company</th>
<th>Type of Mobile player</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3G</td>
<td>Network Operator</td>
</tr>
<tr>
<td>TIM</td>
<td>Network Operator</td>
</tr>
<tr>
<td>Vodafone</td>
<td>Network Operator</td>
</tr>
<tr>
<td>Wind</td>
<td>Network Operator</td>
</tr>
<tr>
<td>Nokia</td>
<td>Device Manufacturer</td>
</tr>
<tr>
<td>Sony Ericsson</td>
<td>Device Manufacturer</td>
</tr>
<tr>
<td>RIM</td>
<td>Device Manufacturer</td>
</tr>
<tr>
<td>Samsung</td>
<td>Device Manufacturer</td>
</tr>
</tbody>
</table>

All the Operators competing in the Italian market and having an international reach were considered. Instead, as regards the Device Manufacturers, four of the eight producer having the highest worldwide market shares are taken into account (Figure 4.1).

Figure 4.1: Worldwide Device Manufacturers Share

(Source: www.mobilespeedia.com, May 2010)
The importance of the producers selected for the analysis is better highlighted if the Western Europe market is isolated from the rest of the world (Figure 4.2).

*Figure 4.2: Device Manufacturers Share by Region*

![Device Manufacturers Share by Region](image)

(Source: www.mobilespeedia.com, May 2010)

Table 4.2 reports the unit of analysis that constitutes the analysis scheme built in order to conduct the direct interviews. The division of the scheme obviously reflects the business model framework building elements. Furthermore they have been combined with secondary sources information found in the company website or in accounting reports.

*Table 4.2: Analysis scheme*

<table>
<thead>
<tr>
<th>Classification variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company profile</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Firm history</td>
</tr>
<tr>
<td></td>
<td>• Top management</td>
</tr>
<tr>
<td></td>
<td>• Departments and</td>
</tr>
<tr>
<td></td>
<td>geographical presence</td>
</tr>
<tr>
<td></td>
<td>• Core business</td>
</tr>
<tr>
<td></td>
<td>• Future strategic plan</td>
</tr>
<tr>
<td></td>
<td>(mid term)</td>
</tr>
<tr>
<td>Value model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Target segments</td>
</tr>
<tr>
<td></td>
<td>• Customer value</td>
</tr>
</tbody>
</table>
4.2) Empirical analysis

The empirical analysis aims at proposing a method based on defining business modelling choices according to Value Range, where extreme cases are identified and related business implications are explained. Table 4.3 reports the case of Mobile Network Operators, while Table 4.4 considers the case of Device Manufacturers.

Table 4.3: MNOs’ business model framework

<table>
<thead>
<tr>
<th>BM Model</th>
<th>BM building elements</th>
<th>Value Range</th>
<th>Business Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target segments</td>
<td>Concentrated (consumer or business customers; national reach)</td>
<td>Homogeneous market. Lower managerial complexity. Narrower range of business opportunities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distributed (consumer and business customers; international reach)</td>
<td>Heterogeneous market. Wider range of business opportunities. Increased managerial complexity.</td>
</tr>
<tr>
<td></td>
<td>Customer value</td>
<td>Price sensitive</td>
<td>Standardization. Lower flexibility. Competition on prices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High quality, Personalized</td>
<td>Higher flexibility (customized offer, services bundles). Differentiation. Higher costs of personalization.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Innovative (Media Application + Mobile Internet)</td>
<td>Media Company approach. High innovation but also managerial complexity.</td>
</tr>
<tr>
<td></td>
<td>Organization</td>
<td>Vertical (Function-based)</td>
<td>Efficiency-oriented. Stronger control over specific resources and competencies. Lower coordination and flexibility, lower responsiveness.</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Value network</td>
<td>Full integration</td>
<td>End-to-end coverage of operational activities on the Network Layer and the Content &amp; Service Layer. Higher costs, absence of cooperation, competition with MCSP, WC and DM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hollow corporation</td>
<td>Focus on coordination/ intermediation activities with MCSP, WC and DM. Operational activities restricted to the Network Layer. Higher relationship complexity and coordination problems.</td>
<td></td>
</tr>
<tr>
<td>Value network</td>
<td>Stand alone</td>
<td>Buyer-seller network relationships, internal sources of value and innovation. Higher internal complexity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooperative</td>
<td>Partnerships network relationships, resources and knowledge sharing (open innovation). Higher external complexity.</td>
<td></td>
</tr>
<tr>
<td>Revenue model</td>
<td>Direct (paid by customer)</td>
<td>Central role in the Value Network. Higher control of revenue streams and revenue sharing agreements. Conflict with other value network players (e.g. Internet Companies, Device Manufacturer, Media Companies).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indirect (paid by third parties, e.g. MCSP, advertiser)</td>
<td>Intermediated role in the Value Network. Openness to third parties. Risk of losing control over the end customer.</td>
<td></td>
</tr>
<tr>
<td>Cost structure</td>
<td>Concentrated</td>
<td>Increased independence. Increased risk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distributed</td>
<td>Risk sharing. Increased dependence on partners.</td>
<td></td>
</tr>
<tr>
<td>Financial aspects</td>
<td>Investment driven</td>
<td>Risk taker on investments (trial and error approach). More innovation opportunities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Money maker</td>
<td>Cash generation oriented. Lower risk of wasting money on experimenting unsuccessful investments. Lower chance of discovering innovation opportunities.</td>
<td></td>
</tr>
</tbody>
</table>

(Source: personal elaboration)

**Target segments:**

Mobile Network Operators’ extreme choices related to target segments are translated into concentrated versus distributed decisions. Where the former implies the choice between consumer (e.g. youth generation: TIM Tribù) or business customers (e.g. company: Vodafone RAM Su Misura, Wind One Company) and has a national reach. It means deciding to serve a market characterized by similar needs thus less difficult to manage in terms of designing the offer accordingly but, on the contrary, presenting less business opportunities and high competition with other MNOs that are present in those specific segments. Distributed market refers to more undifferentiated needs of the customer that are both consumer and business (e.g. Wind Call Your Country) and has
an international reach. In this case, the related offering has to satisfy different customer needs and a wider customer base thus it presents opportunities for all the competing operators but also a higher complexity in distinguishing from competitors’ offering and in managing the variety in terms of cultures, customer requirements, connectivity problems, and so on.

**Customer value:**

The extreme cases range here from price sensitive customer value to high quality and personalization. In the former, value is associated to standardization because price plays the central role while in the latter customization and service bundles are considered more valuable leaving space for differentiation. MNOs adopting the first choice risk to incur in a price war with other competitors thus capturing customers thanks to the low price offering is counterbalanced with the threat of eroding more and more the operator’s margins. Those adopting the second choice have to carefully consider the internal costs of personalization and effectively communicate the benefits produced by their high quality solution that risks not to be understood by the customers.

**Value propositions:**

Value range distinguishes between mature offering that allows to remain focused on company’s traditional core business in order to compete on a well known field and innovative offering that instead implies to undertake a Media Company approach. The mature offering, including voice services and mature contents – Sms, Mms, logos, wallpapers, ringtones and so on (Bertelè et al., 2008) –, allows a high diffusion on the market but prevent innovation spread and facilitates commoditization risk so that the customer loyalty to the operator is seriously compromised. The innovative offering, including Media applications and Mobile Internet services, looks more attractive to the eyes of the customers but implies an increasing managerial complexity for the operator that has to reach agreements with players other than Mobile (e.g. H3G applications for iPhone).

**Organization:**

The vertical, function-based type of organization is compared with the horizontal, project-based one. As regards the first alternative, the company presents an orientation
towards efficiency and keep a solid control over specific resources and competencies but it suffers from rigidity due to the hierarchical structure thus the coordination is reduced and the output is less responsive to market changes. Concerning the second alternative, the company is effectiveness-oriented and project results represent the main focus thus demonstrating a better market responsiveness. It is however subjected to risk of loss of competencies and complexity due to the reduced control.

Value chain:

Here the choice range from full integration to hollow corporation representing on one hand the necessity of end-to-end coverage of operational activities thus keeping a strong control over them and on the other the focus on shifting more and more activities out of the corporation thanks to the importance of the brand. Disadvantages of the first solution are related to the higher costs due to performing everything internally and to the constraints represented by traditional functions that prevent collaboration whilst weaknesses of the second extreme solution are related to higher complexity in relationships and coordination of the outsourced activities.

Value network:

As regards the business network, it is possible to differentiate between a stand alone approach that denotes a clear choice of mere buyer-seller relationships and a cooperative approach that instead relies on partnerships network relationships. The adoption of the first choice is linked to an internal knowledge built on years of experience thus focus on internal sources of value and innovation but presents problem of internal complexity in protecting the company’s intellectual property and of cultural rigidity and narrowness. The dual choice embraces an open innovation orientation aimed at resources and knowledge sharing but presents difficulties in managing the external influences and exploiting innovation opportunities.

Revenue model:

This elements presents an extreme case related to direct revenue model meaning paid by the customer and another called indirect referring to paid by third parties thus, in the
case of MNOs, MCSPs or advertisers. This value range is strictly connected to the revenue sharing theme, indeed the first solution guarantee to the MNO a central role in the value network because it receives the payments from the customers and directly manages the revenue distribution. However this procedure can generate conflict with other value network players (e.g. Internet Companies, Device Manufacturer, Media Companies) that prefer to avoid a revenue sharing mechanism that implies a so direct control in the hand of the operator. The second solution implies an intermediate role of the operator in the value network that is more open to third parties. This avoid risks of conflicts but implies revenue sharing agreements where the partners receive the revenue and distribute it to the operator that in this way is more exposed to partners decisions. Furthermore there is the risk of losing control over the end customer because the operator-customer relationship is intermediated by the network.

**Cost structure:**

Here the extreme possibilities range from a concentrated to a distributed cost structure. In the first case the operator has an increased independence of investment but also an increased risk related to project success. In the second case the situation is exactly the opposite, with risk sharing opportunity but an increased dependence on partners.

**Financial aspects:**

The two different alternatives identified are investment driven and money maker orientations. The company adopting the first approach is considered a risk taker on investments thus relying on trial-and-error process aimed at innovative solutions; while the firm pursuing the second view is oriented to cash generation thus it is less exposed to the risk of investing in unsuccessful investments but also prevents innovation opportunities to be wholly exploited.

*Table 4.4: DMs’ business model framework*
<table>
<thead>
<tr>
<th>BM</th>
<th>BM building elements</th>
<th>Value Range</th>
<th>Business Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total coverage (different products for different markets)</td>
<td>Wider market reachable. Wider product range, and higher managerial complexity.</td>
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<td></td>
<td>Niche market (specific products for market specialization)</td>
<td>Competing on specific customer needs. Narrower product range. Limited market reachable.</td>
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<td></td>
<td>Easiness of use</td>
<td>Focus on simple, direct functionalities. Standard technological resources and competencies required.</td>
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<td></td>
<td>Experimentation</td>
<td>Focus on quality of experience. Advanced technological resources and competencies required.</td>
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<td></td>
<td>Basic functions phones (SMS, calls)</td>
<td>Traditional “product-based” proposal. Lower strategic interrelationship management complexity. Lower range of opportunities. Average Margins.</td>
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<td></td>
<td>Value added functions phones (application stores, internet access)</td>
<td>Innovative “service-based” proposal. Higher complexity, higher range of opportunities. Higher Margins. Risks related to innovative services uptake.</td>
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<td></td>
<td>Functional (competence-based)</td>
<td>Focus on know how development and interaction among experts. Slow response time to environmental changes, lack of innovation, limited view of organizational goals.</td>
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<td></td>
<td>Divisional (product/output-based)</td>
<td>Focus on integration and coordination of activities. Market responsiveness, faster and decentralized decision-making. Reduced economies of scale, poor coordination across product lines, lack of in-depth competence and technical specialization.</td>
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<td></td>
<td>Full integration positioning</td>
<td>Expansion towards the Content &amp; Service Layer. Higher opportunities. Competition with MNOs, MCSPs and WCs. Risk of “business inexperience”.</td>
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<td></td>
<td>Traditional positioning</td>
<td>Operational activities restricted on the Device Layer. Dependence on MNOs, MCSPs and WCs. Strong competitive positioning. Lower opportunities.</td>
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<td></td>
<td>Stand alone</td>
<td>Buyer-seller network relationships, focus on internal R&amp;D. Higher internal costs and time to market.</td>
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<td></td>
<td>Cooperative</td>
<td>Partnerships network relationships, focus on risk and innovation sharing. Higher relationship and integration complexity.</td>
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<td></td>
<td>Device – based</td>
<td>Dependent on device sale (to either MNOs or to end customers). Higher fixed revenues.</td>
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<td></td>
<td>Added services – based</td>
<td>Dependent on bundle offer sale: device + content + applications (to either MNOs or to end customers). Lower fixed revenues, customer lock-in through service stickiness and switching costs.</td>
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<td></td>
<td>Concentrated</td>
<td>Increased control over decisions. Increased risk of failure.</td>
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<tr>
<td></td>
<td>Distributed</td>
<td>Risk sharing among partners. Loss of control over decisions.</td>
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296 Chapter 2
Financial aspects

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<th>Investment driven</th>
<th>Money maker</th>
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(Source: personal elaboration)

**Target segments:**

Device Manufacturers’ choice of market segmentation ranges from total coverage to niche market. The first case means offering different products for different markets thus the potentially reachable market has a relevant dimension but the product range is wide so the managerial complexity is the main problem. This is the case of Nokia positioning, ranging from low costs devices accessible to everyone to high-performance models for professional and advanced use. The second case instead offers specific products for a market specialization segmentation, this means that the manufacturers is going to compete on specific customer needs (e.g. phones for children, luxury devices..) thus the product range is narrower but also the market reachable is limited. This is the case of RIM positioning, that with its BlackBerry Smartphone aims to serve medium-high income people that reflect a specific well-off status.

**Customer value:**

The extreme situations are here related to device functionalities seen by the user perspective and differentiate between easiness of use and experimentation as customer priority. The former functionalities are simple and direct thus requiring industry standard technological resources and competencies, this constraints the possibility of differentiating one from the other . The latter functionalities focus on the quality of experience hence requiring advanced technological resource and competencies and continuous market audit in order to monitor a need that is always evolving and looking for innovative proposals.

**Value propositions:**

As in the previous case, also value propositions are based on device functionalities but taking into account the producer perspective thus distinguishing between basic and value added functions phones. Basic functions, meaning calls and SMS, reflects a traditional “product-based” positioning that implies lower strategic interrelationship
managerial complexity due to the absence of agreements with application and Internet providers but also a lower range of opportunities of effectively satisfying the market and a type of offer that guarantees low profit margins. Value added functions refers to application stores and Internet access and to an innovative “service-based” positioning of DMs. This is subjected to a higher managerial complexity of agreements but opens space for a wider range of opportunities and profit margins. However it presents a risks related to the innovative services uptake.

**Organization:**

The functional, competence based organization, is here compared to the divisional, product or output based. Device producers with few products competing in rather stable market are suggested to adopt the functional type because it allows to focus on know how development and experts interactions. However it implies a slow response time to market because of hierarchical overload and poor horizontal coordination, it lacks of innovation, and has a limited view on organizational goals because each function pursues its specific objectives with the risk of opportunistic behaviours. On the contrary, device manufacturers with several products and operating in dynamic markets are suggested to adopt a divisional type of organization because it is focused on integration and coordination of activities and ensures a higher market responsiveness thanks to a faster and decentralized decision-making process. Anyway this configuration achieves reduced economies of scale and lacks of in-depth competence and technical specialization.

**Value chain:**

Here the choice range from full integration to traditional positioning. Contrary to the MNOs situation, for the DMs the full integration approach is the most innovative because it implies an expansion to Content & Service Layer previously controlled by MNOs, MCSPs and WCs. This situation creates new opportunities for the DMs that have to deal with the risk of inexperience because they enter in competition with the above mentioned players having already established competences on the field. Traditional positioning restricts the operational activities of DMs to the traditional Device Layer thus enjoying a strong competitive position but remaining dependent on MNOs, MCSPs, and WCs with related lower business opportunities.
Value network:

The value range logic applied to business network distinguishes a stand alone approach characterized by buyer-seller network relationships, versus a cooperative approach presenting partnerships network relationships. The first case focus on internal R&D resources that guarantees a complete control over company’s intellectual property but implies higher internal costs and time to market. The second case focus on risks and knowledge sharing that facilitates incoming innovation because considers also external source but implies to manage complex relationship and usually presents integration problems.

Revenue model:

As regards the revenue model, it is possible to differentiate between a sale revenue dependent on device or on bundle offer. In both cases the sale can be done either to MNOs or to the end users but in the first case it is the value of the device itself that guarantees the profit to the company while in the second case the profit depends less on the device and more on content and applications. The former situation results in higher fixed revenues but the latter ensures to the company lock-in effects through service stickiness and switching costs that allows the producer to retain the customer and to create the conditions for future purchases.

Cost structure:

The alternatives identified are related to a concentrated or a distributed cost structure. In the first case the firm has an increased control over the decisions but also an increased risk of failure. In the second case the situation is exactly the opposite, with risk sharing among the partners but a loss of control over the decisions.

Financial aspects:

Here the extreme possibilities range from investment driven to money maker orientations. The producer adopting the first financial configuration demonstrates a proactive approach to the market with higher possibilities of gaining first mover advantages but also taking the risk of failure. The one adopting the second approach is a
company that reacts to competitors decisions with the related lower risk of market uncertainty exposure but also reduced innovation opportunities.

4.3) Final considerations

The proposed Value Range logic applied to the business model framework, built on the basis of a consistent literature analysis, demonstrates its effectiveness in complementing the strategic scope of the company with a practical model aimed at building the foundations for strategy implementation.

The framework is characterized by a descriptive nature because it considers the actors’ business model as a description of three different components and related nine building elements but also by a normative nature because it consists on a measurement tool for defining the impacts of business model choices on values of parameters, so as to set guidelines for improving the business model performance.

The internal validity of the model, that is defined as its reliability in estimating the parameters, is ensured by the consideration of three different literature streams (E-Commerce, Strategic, and Innovation) and by the utilization of an objective procedure for the calculation of significance of each business model component proposed by the authors (i.e. the frequency of references); moreover, the relationship between business model parameters (independent variables) and business impacts and performances (dependent variables) is made explicit. The external validity of the model, that refers to the generalizability of the proposed framework, is guaranteed by the fact that the model is developed in a general context and later applied to the empirical environment, since the literature related to the context of application (Mobile) and the suggested components are not taken into account during the phase of business model formation but only to gain important insights before the development of the personal contribution. The model applied has a significant impact on the field of reference, indeed it supports the analysis that the considered actors (Mobile Network Operators and Device Manufacturers) have to develop in order to balance their business model choices and to generate effective strategic alternatives dependent on business implications that the Value Range logic allows to underline. Even if the structure of the model is fixed, its flexibility is evidenced by the high adaptability of the business implication it produces. For instance, if we consider the Value Creation and Delivery component applied to MNOs and DMs, it is possible to note that the resulting Value Range identified for the Value Chain and the Value Network elements is very similar, however it implies
different, and sometimes opposite, business implications depending on the actor under analysis.

The framework’s value for practitioners thus lies in the creation and provisioning of a “reference model” capable of supporting the decision making process of business model design.

The logic for the application of the framework follows a linear development avoiding complex reasoning and allowing the company to easily implement it in a continuous improvement program that, as we have seen, has necessarily to exist in order to keep the pace of change. It provides guidelines for the concrete use of business model design as strategy execution and as triggering element for the reactivation of the strategy planning phase. Indeed the Value Range method becomes a powerful tool for the experimenting phase because it provides information aimed at discovering and evaluating discontinuities phenomena occurring in the market that are often out of the control of the companies. As it is presented, it has a qualitative nature but it can be easily complemented with a quantitative analysis that aims at assigning a specific value to each business model parameter identified. The constant monitoring of these values facilitates the individuation of anomalies so that the company can decide for defensive actions, if the externality taking place is negative, or can exploit it by gaining first mover advantages due to its reactivity, if it is positive.

The research represents a step towards the development of business model design theory, however it does not analyze the potential different performances coming from alternative parameters selection. Future works will need to focus on the study of different parameters combinations and on the development of comparative or benchmarking analysis that aims at explaining any differential in firms performance; moreover, a further application and validation based on Mobile players different from Network Operators and Device Manufacturers but also to contexts other than Mobile would test the framework’s generalizability.
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- Deloitte
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- Idate
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- Ovum
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- Pyramid Research
- Telephia
- Visiongain Intelligence
- Portio Research
- Jupiter Research

Graduation Theses


Annex 1

Table A.1: Research question, Literature background, and Methodology

Table A.2: Business Model Definition, Business Model Construct, and Business Model – Strategy Relationship

Table A.3: Relationship between Business Model and other theories/constructs, Arguments and conclusions
### Table A.1: Research question, Literature background, and Methodology

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<thead>
<tr>
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<th>Methodology</th>
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</table>
| 1 | Paul Timmers, *Business Models for Electronic Markets*, 1998 | In view of the new features of the Internet, critical questions to be answered include:  
- what are the emerging BMs?,  
- which strategic marketing approaches are applied, or emerging?  
The article addresses the first question by providing a framework for the classification of Internet electronic commerce BMs. | The literature about Internet electronic commerce is not consistent in the usage of the term ‘BM’, and, moreover, often authors do not even give a definition of the term. | Conceptual paper. |
| 2 | Gary Hamel, *Leading the revolution*, 2000 | Now that the old BMs have ceased to work, how do we go about creating new ones? | Not mentioned. | Conceptual paper providing real world examples: Enron, Schwab, Cisco. |
| 3 | Jane Linder and Susan Cantrell, *Changing Business Models: Surveying the Landscape*, 2000 | To define what a BM is, to lay out the BM landscape and the common ways models evolve. | It seems that the executives, reporters, and analysts who use the term "business model" *don't have a clear idea of what it means*. They sprinkle it into their rhetoric to describe everything from how a company earns revenue to how it structures its organization.  
When people say "BM," they're really talking about three different kinds of things: components of BMs, real operating BMs (the organization's core logic for creating value), and change models (the core logic for how a firm will change over time in order to remain profitable in a dynamic environment). | Conceptual paper resulting from interviews with 70 company executives and analysts as well as extensive secondary research and providing illustrative examples (SupplyGenie.com and Global Tire and Rubber). |
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<td>Conceptual paper resulting from examination of 59 American and European e-businesses that have recently become publicly traded corporations.</td>
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<td>model in capturing value from</td>
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<td>innovation: evidence from Xerox</td>
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<td>technological opportunities effectively if they invest in integrative capabilities</td>
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<td>Corporation’s technology spin-off</td>
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<td>processes, and manage disruptive technologies outside the main business (e.g.</td>
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<td><em>BM’s literature:</em> the failure of incumbent firms to manage effectively in the face</td>
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<td>of technological change can be understood as the difficulty these firms have in</td>
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<td>perceiving and then enacting new BMs, when technological change requires it.</td>
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<td>E. Faber, P. Ballon, H. Bouwman, T. Haaker, O. Rietkerk and M. Steen, <em>Designing business models for Mobile ICT services</em>, 2003</td>
<td>To review the BM literature and introduce the B4U design framework.</td>
<td>A framework for designing BMs for Mobile ICT services is virtually absent in the BM literature. Knowledge on how to effectively accommodate and balance requirements and interest is largely missing in the BM literature. BM definitions (Rappa 2001; Weill and Vitale 2001; Slywotsky 1996; Timmers 1998).</td>
<td>Conceptual paper.</td>
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<td>27</td>
<td>G. Camponovo and Y. Pigneur, <em>Business Model Analysis applied to Mobile Business</em>, 2003</td>
<td>To present the principal classes of actors that will participate in the Mobile business industry and give an overview of their BMs based on a formalized ontology.</td>
<td>BM literature (Petrovic 2001; Timmers 1998; Bouwman 2002; Osterwalder and Pigneur 2002).</td>
<td>Conceptual paper based on Mobile Market Scorecard framework. 4 perspectives: - innovation (future evolution of the Mobile landscape and technological uncertainties); - market (demand size and demand uncertainties); - industry (supply side and strategic uncertainties); - financial (sustainability and attractiveness of the different actors, services and technologies).</td>
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<td>29</td>
<td>L.W. Lam and L.J. Harrison-Walker, <em>Toward an objective-based typology of e-business models</em>, 2003</td>
<td>To provide a typology of e-BMs that speaks clearly regarding strategic objectives. The typology can assist companies in their decision on whether or not to expand into e-business and, if so, how their e-business can tie in to the corporate mission and objectives.</td>
<td>There is currently no single, cogent, and comprehensive typology of Internet BMs to point to. BMs classifications (Strauss and Frost 2001; Shin 2001; Afuah and Tucci 2001; Gordijn and Akkermans 2001; Dubosson-Torbay 2002; Rappa 2001; Eisenmann 2002; Hanson 2000)</td>
<td>Conceptual paper with real world cases.</td>
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<td>30</td>
<td>Donald Mitchell and Carol Coles, <em>The ultimate competitive advantage of continuing business model innovation</em>, 2003</td>
<td>To clarify the concepts of BM improvement, replacement, innovation and continuing innovation. To address the question: how can company with limited experience go from being a novice tied to its inertia to become an effective competitor in a brief amount of time?</td>
<td>Not mentioned.</td>
<td>Conceptual paper with real world examples.</td>
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| 31 | A.G. Pateli and G.M. Giaglis, *A Framework for Understanding and Analyzing eBusiness Models*, 2003 | To draw on a great number of research contributions in the field of e-BMs to propose a framework that further decomposes the research area of BMs into specific research sub-domains. The proposed framework is then applied to organise and review existing research contributions under each sub-domain. | - *BM definitions* (Timmers 1998; Tapscott et al. 1998, 2000; Linder and Cantrell 2000; Gordijn & Akkermans 2001a,b,c; Weill & Vitale 2001; Rappa 2001; Hawkins 2001; Amit and Zott 2001; Applegate 2001; Petrovic et al. 2001; Osterwalder and Pigneur 2002; Magretta 2002; Elliot 2002);  
- *BM components* (Mahadevan 2000; Kraemer 2000; Hamel 2000; Linder and Cantrell 2000; Chesbrough and Rosembloom 2001; Methlie 2001; Afuah and Tucci 2001; Alt and Zimmermann 2001; Weill and Vitale 2001; Petrovic et al. 2001; Osterwalder and Pigneur 2002; Magretta 2002);  
- *BM taxonomies* (Timmers 1998; Mahadevan 2000; Tapscott et al. 1998, 2000; Linder and Cantrell 2000; Kaplan & Sawhney 2000; Alt and Zimmermann 2001; Weill and Vitale 2001; Rappa 2001; Applegate 2001);  
- *BM representations* (Tapscott et al. 1998, 2000; Gordijn & Akkermanns 2001a,b,c; Weill and Vitale 2001; Osterwalder and Pigneur 2002);  
- *Change Methodologies* (Mahadevan 2000; Tapscott et al. 1998, 2000; Linder and Cantrell 2000; Gordijn & Akkermans 2001a,b,c; Petrovic et al. 2001; Papakiriakopoulos et al. 2001);  
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| 34 | George Yip, *Using strategy to change your business model*, 2004                    | To demonstrate, through real world cases, that BM and strategy are two different concepts even if strategy is often used for both.                                                                             | Strategy: M.Porter                                                                                                                                                                                                       | Conceptual paper providing real world examples:  
  - EasyGroup (BM components);  
  - Enron, Schwab and Merrill Lynch (companies that use the real strategy to change their BMs).                                              |
| 35 | Timber Haaker, Edward Faber, Harry Bouwman, *Balancing strategic interests and technological requirements for Mobile services*, 2004 | To explore the interdependencies between organization and technology domain, by analyzing critical design issues in BMs for Mobile services.                                                                     | Literature on strategic alliances fails to provide insight into the subtleties involved in design of viable BMs for the provisioning of Mobile services by actors that collaborate in value networks.  
  There is not an approach that provides a perspective on cross-company collaboration in complex value networks rather it focus on BMs of a single company.  
| 36 | C.S. Leem, H.S. Suh and D.S. Kim, *A classification of Mobile business models and its applications*, 2004 | To develop a Mobile BM classification scheme and apply it to analysis of current status in Mobile business.                                                                                                     | Previous research on Mobile service classification:  
  - ARC Group (1999): timeliness, remote access, and location based.  
  - Lehman Brothers (2003): communication, information, transaction, entertainment.  
  Limitations: not focused on Mobile business models; B2B/B2E perspectives are not reflected; it’s hard to use the existing Internet BM classification schemes in Mobile business because wireless Internet channel has its differences from wired Internet business. | Conceptual paper based on two case studies:  
  - first on 65 firms in Korea: Mobile solutions are categorized;  
  - second on Mobile service trend analysis: 200 Mobile heavy users where questioned on the Mobile service-related issues. |
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<td>37</td>
<td>Scott M. Shafer, H. Jeff Smith and Jane C. Linder, <em>The power of business models</em>, 2005</td>
<td>To review the extant literature and identify the components of BMs. To offer a new definition of BM and to contrast BMs with strategy.</td>
<td>12 different definitions (Timmers 1998; Hamel 2000; Afuah and Tucci 2001; Amit and Zott 2001; Weill and Vitale 2001; Dubosson-Torbay et al. 2002; Magretta 2002; Rayport and Jaworski 2002; Van Der Vorst et al. 2002; Hoque 2002; Chesbrough 2003; Hedman and Kalling 2003); 42 different components of a BM. While other authors have recently offered definitions of BM, none appear to be generally accepted. This lack of consensus may in part be attributed to interest in the concept from a wide range of disciplines, all of which have found a connection to the term. <em>Strategy</em> (Mintzberg 1994; Porter 2000; Hill and Jones 2001).</td>
<td>Conceptual paper based on affinity diagram to categorize BM components.</td>
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<td>40</td>
<td>H. Tikkanen, J. Lamberg, P. Parvinen and J. Kallunki, <em>Managerial cognition, action and the business model of the firm</em>, 2005</td>
<td>To outline a generic framework for the BM and illuminate its linkages to managerial cognition.</td>
<td><strong>BM literature</strong> (Venkatraman and Henderson 1998; Amit and Zott 2001; Winter and Szulanski 2001). There is a lack of a unitary conceptualization of the BM in academic literature. <strong>Strategy:</strong> Approaches to the content of strategy have ranged from the classical planning perspective (Ansoff, 1965; Andrews, 1980) to the widely referenced typology of Miles and Snow (1978), to generic strategies of Porter (1980), and to more recent emergent and evolutionary approaches to strategy (Mintzberg, 1987; Burgelman, 2002). <strong>Cognition and action</strong> (Miller 1986; Giddens 1984; Barley and Tolbert 1997; March and Olsen 1989; March and Simon 1963; Hill and Levenhagen 1995; Walsh 1995; Porac et al.’s 2002).</td>
<td>Conceptual paper that reviews the focal literature focusing on the actions and evolution of a firm and built a synthesis that describes the different components of a BM.</td>
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<td>42</td>
<td>B. Kijl, H. Bouwman, T. Haaker and E. Faber, <em>Developing a dynamic business model framework for emerging Mobile service</em>, 2005</td>
<td>To analyze the dynamic character of BMs by integrating venturing and life cycle phasing concepts as well as external influential factors on BM evolution into a framework.</td>
<td><strong>Innovation classification:</strong> radical vs incremental, competence enhancing vs competence destroying, disruptive vs sustaining change model (Christensen 1997), architectoral vs modular. <strong>BM development:</strong> 3 main phases (technology/R&amp;D, implementation/roll-out, market) and 4 perspectives (technical service development, entrepreneurial and business planning, innovation adoption and diffusion, marketing). Raisanen (2005); Mason and Rohner model (2002); Afuah and Tucci model (2003); Rogers (1983); Levitt’s product life cycle (1965). External factors influence BM (Hill and Jones (1995); PESTEL framework)</td>
<td>Conceptual paper based on a case study (OP3) to validate the framework.</td>
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<td>43</td>
<td>Michael Morris, Minet Schindehutte and Jeffrey Allen,  <em>The entrepreneur’s business model: toward a unified perspective</em>, 2005</td>
<td>To explore theoretical underpinning of BMs and to propose a six-component framework for characterizing a BM, regardless of venture type.</td>
<td>BM, strategy, business concept, revenue model, and economic model are often used interchangeably. BM definitions can be grouped in three categories: economic (variables: revenue sources, pricing methodologies, cost structures, margins, and expected volumes), operational (variables: production or service delivery methods, administrative processes, resource flows, knowledge management, and logistical streams) and strategic (variables: stakeholder identification, value creation, differentiation, vision, values, and networks and alliances). Business strategy (value chain/systems and strategic positioning, resource-based theory, strategic network theory, cooperative strategies, choices about firm boundaries, transactions cost economics, Schumpeterian theory).</td>
<td>Conceptual paper examining approaches to model construction, noting standard model types, citing examples of failed and successful models, and discussing the need for new models as conditions change. It provides real world examples and Southwest Airlines case study results.</td>
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<td>44</td>
<td>L. Lehmann-Ortega and J.-M. Schoettl,  <em>From buzzword to managerial tool: the role of business models in strategic innovation</em>, 2005</td>
<td>To show how the concept of the BM can help achieve a more global take on innovation, which it’s called strategic innovation. To use an example to explain the attraction of strategic innovation but show how it lacks an operational translation. To then show how the idea of the BM can help stimulate managerial thinking and be instrumental in developing strategic innovation.</td>
<td>BM and strategic innovation definitions: - Govindarajan and Trimble (2001): Strategic innovation is [about] changing the rules of the game. When one consistent BM is converted into another internally consistent BM, the rules of the game are changed. - Charitou and Markides (2003): Strategic innovation means an innovation in one’s BM that leads to a new way of playing the game. - Schlegelmilch et al. (2003): Strategic innovation is the fundamental reconceptualization of the BM and the reshaping of existing markets (by breaking the rules and changing the nature of competition) to achieve value improvements for customers and high growth for companies.</td>
<td>Conceptual paper providing real world cases (e.g. Zara)</td>
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<td>46</td>
<td>C. Kim, C. Choi, and Y. Park,</td>
<td>To suggest an inductive taxonomical approach for classifying BMs on Mobile business.</td>
<td>BM taxonomies (Turban et al. 2004, Timmers 1998, Cho and Park 2002)</td>
<td>Conceptual paper based on data collection that follows a research procedure: keywords from sample patents are defined through text-mining, frequencies are calculated, keywords are reduced through factor analysis, BM patents are classified and analyzed.</td>
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<td>47</td>
<td>Maitland et al., <em>Mobile information and entertainment services: business models and service networks, 2005</em></td>
<td>To examine the influence of revenue models and network membership benefits on network characteristics: How does the business model shape the Mobile service network?</td>
<td>Service network (Sydow and Windeler, 1998; Jones and Hesterly et al., 1998; Cook et al., 1999; Sampson, 2000; Doz et al., 2000). BM literature (Timmers, 1998; Hawkins, 2002; Bouwman and van Ham, 2003; McKelvey, 2001; Tsalgitidou and Pitoura, 2001; Rappa, 1999).</td>
<td>Conceptual paper based on exploratory research approach: five networks of Mobile and entertainment services were individuated. For each service, depending on the network size, interviews were held at between 2/5 firms, then data were supplemented with information from company websites.</td>
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- “Business models” (Afuah et al. 2003; Alt et al. 2001; Applegate 2001; Bouwman 2003; Chesbrough et al. 2002; Gordijn et al. 2001; Hamel 2000; Kar et al. 2003; Linder et al. 2000; Magretta 2002; Mahadevan 2000; Rappa 2003; Tapscott et al. 2000; Timmers 1998; Weill et al. 2001). | Conceptual paper based on empirical analysis to classify all the firms in COMPUSTAT between 1998 and 2002 based on the text of the SEC 10K filings. To test the claim (BMs can explain performance heterogeneity), the authors selected a sample of segment-year observations, classified their BMs, and then analyzed their ability to explain variance in financial performance. |
| 50 | Peter Keen and Sajda Qureshi, *Organizational Transformation through Business Models: a Framework for Business Model Design*, 2006 | To highlight what is known about the BM concept and where and why it differs from more established concepts of business strategy. To illustrate how the application of BMs has transformed organizations. - Does a unique BM require a unique organizational design? - When does an established company need to define a new model rather than a refinement in or redirection of strategy? | There is no established general classification of BM, which means that there is as yet little theoretical base for BM research and application. Taxonomies (Afuah and Tucci 2000; Timmers 1998); Definitions (Magretta 2002; Rappa 2002; Betz 2002; Mahadevan 2000; Linder and Cantrell 2001).  
*Common themes:* “value”, “logic” and separation of BM from business strategy and also from organizational structure.  
BM designing principles: value chain analysis, Schumpeterian innovation, Resource based theory, Strategic network theory, and Transaction cost economics.  
One topic that seems ignored in research on BMs is the link between model and organizational form. | Conceptual paper with applications to real world companies. |
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<td>51</td>
<td>Susan Lambert, <em>Do We Need a “Real” Taxonomy of e-Business Models</em>, 2006</td>
<td>To identify the BM classification schemes present in the electronic commerce literature along with the criteria by which the BMs are classified. Drawing on the broader classification literature, the utility of these classifications is examined and a distinction is made between typologies and taxonomies. The utility of typologies is examined and a case for the development of a general taxonomy of business models is presented.</td>
<td>BM definitions and attributes (Dubosson-Torbay, Osterwalder et al. 2002; Gordijn and Akkermans 2003; Hedman and Kalling 2003; Osterwalder 2004; Pateli and Giaglis 2004; Osterwalder, Pigneur et al. 2005); Dynamic, BM adoption models (Linder and Cantrell 2000; Afuah and Tucci 2003; Pateli and Giaglis 2005); BM classifications (Timmers 1998; Bambury 1999; Linder and Cantrell 2000; Tapscott et al. 2000; Applegate 2001; Weill and Vitale 2001; Eisenmann 2002; Betz 2002; Rappa 2006; Laudon and Traver 2003).</td>
<td>Conceptual paper.</td>
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<td>53</td>
<td>Pieter Ballon and Michael Van Bossuyt, <em>Comparing business models for multimedia content distribution platforms</em>, 2006</td>
<td>To compare four feasible BM configurations for multimedia content distribution platforms, focusing on the requirements for Mobile operators and content providers, the impact on content distribution architectures and the implications for value propositions towards end users.</td>
<td>Only sketched. BM literature (Osterwalder 2004, Faber et al. 2003, Ballon 2005); Modularity and platform leadership literature (Baldwin and Clark 2000, Gaver and Cusamano 2002).</td>
<td>Conceptual paper developed on the basis of a synthesis of literature and case studies related to content distribution, complemented by a number of in depth, face-to-face interviews and workshops with business and system architects of content providers, fixed operators and Mobile operators.</td>
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<td>54</td>
<td>Henry Chesbrough, Business Model innovation: it’s not just about technology anymore, 2007</td>
<td>Innovation must include BM, rather than just technology and R&amp;D.</td>
<td>BM Definition; Innovation.</td>
<td>Conceptual paper, complemented by a case study on IBM.</td>
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<td>55</td>
<td>Pieter Ballon, Business modelling revised: the configuration of control and value, 2007</td>
<td>To provide a framework for designing and analyzing BMs for Mobile information and communication technology services and systems.</td>
<td>Business-modelling methodologies evolution. Definitions (Weill and Vitale 2001; Osterwalder 2004; Haaker 2004). Deficit in operationalization of BM concepts.</td>
<td>Conceptual paper that reviews the most topical literature on business modelling, as well as general strategic management, industrial economics and network economics literature.</td>
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<td>57</td>
<td>Ramon Casadesus-Masanell and Joan E. Ricart, Competing through business models, 2007</td>
<td>To define BM, provide a way to represent it, and develop some tests to evaluate BM in isolation and in interaction with other BMs from different organizations.</td>
<td>Main BM definitions (Magretta 2002; Amit and Zott 2001; Shafer, Smith and Linder 2005).</td>
<td>Conceptual paper with real world cases (e.g. Zara and Walmart) and examples of BM representations (e.g. Microsoft and Irizar).</td>
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<td>58</td>
<td>Saku Makinen and Marko Seppanen, Assessing business model concepts with taxonomical research criteria – A preliminary study, 2007</td>
<td>To synthesize taxonomical criteria that can be used for assessing research constructs and assess current BM conceptualizations. To show how the criticism plaguing current BM conceptualizations could be removed with future conceptual development against these taxonomical criteria.</td>
<td>BM literature (Chesbrough and Rosenbloom 2002; Afrah 2004; Davenport et al. 2006; Osterwalder and Pigneur 2004; Amit and Zott 2001; Hedman and Kalling 2003; Chapman et al. 2003; Betz 2002; Hambrick and Fredrickson 2001; Shafer et al. 2005; Tikkanen et al. 2005); BM for the assessment (Afah 2004; Hamel 2000; Rapport and Jaworski 2001; Morris et al. 2005; Hedman and Kalling 2003; Osterwalder 2004; Gordijn 2002; Betz 2002; Weill and Vitale 2001; Alt and Zimmermann 2001; Pant and Ravichandran 2001; Mahadevan 2000; Timmers 2000).</td>
<td>Conceptual paper.</td>
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| 62 | Mutaz Al-Debei and Davison Avison, *Business Model Requirements and Challenges in the Mobile Telecommunications Sector*, 2008 | To identify the main Mobile BM dimensions along with their interdependencies and provide Mobile network operators MNOs with insights to improve their BM in this new boundary-less landscape.  
What constitutes the most viable BM that meets various strategic objectives and goals for MNOs in a turbulent business environment? | BM definitions (Magretta 2002; Linder and Cantrell 2000; Haaker et al. 2006; Hedman and Kalling 2003);  
Recap of literature findings: 1) most of the cellular BM studies only list of BM components with a general brief description, 2) they depict cellular BM components from different points of view and each concentrates on only few parts of the whole, 3) researchers investigate the Mobile business models at different levels, 4) different researchers define the main components of Mobile business models using different terminologies which, sometimes, are mystified with those used in strategy. | Conceptual paper. |
| 63 | T.S. Hsu, Chuang, Yang and C.J. Hsu, *Study on Business Models For Electronic Commerce*, 2008 | To investigate the BM of electronic commerce and propose a framework of e-commerce BMs based on the findings of literature review and in-depth interviews with experienced specialists. | E-commerce definitions (Kalakota and Whinston 1997, Zwass 1996, Green and Feinman 2000, Afuah and Tucci 2003);  
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<td>64</td>
<td>D.J. Teece, <em>Business Models, Business Strategy and Innovation</em>, 2009</td>
<td>To understand the significance of BMs and explore their connections with business strategy, innovation management, and economic theory.</td>
<td>Strategy, innovation management, and economic theory. <em>BM concept lacks</em> of theoretical grounding in economics or in business studies</td>
<td>Conceptual paper providing real world examples of BMs.</td>
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<td>66</td>
<td>C. Zott and R. Amit, <em>Designing your future Business Model: an activity system perspective</em>, 2009</td>
<td>To develop a conceptual toolkit that enables entrepreneurial managers to design their future BM and to analyze and improve their current designs to make them fit for the future.</td>
<td>Activity Systems Models; Strategic/Value Networks; BMs Design.</td>
<td>Conceptual paper.</td>
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<td>67</td>
<td>M. Johnson, C. Christensen and K. Henning, <em>Reinventing your Business Model</em>, 2009</td>
<td>To develop a roadmap for BM design, filling the literature gap and allowing to reinvent the BM concept so that it becomes attractive to both internal and external stakeholders.</td>
<td>BM definition and design. <em>Lack of definition</em>: very little formal study has been done into the dynamics and processes of BM development. Few companies understand their existing BM well enough, they don’t know when they can leverage their core business and when success requires a new BM.</td>
<td>Conceptual paper based on Qualitative Analysis: case studies.</td>
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<td>68</td>
<td>M. Johnson and C. Christensen, <em>What are Business Models, and how are they built?</em>, 2009</td>
<td>What are BMs, and how are they built?</td>
<td>Most companies don’t fully understand the sources of the strengths and limitations of their existing BM, the premises behind their development, and the interdependencies amongst the elements of their models.</td>
<td>Conceptual paper based on Qualitative Analysis: case studies.</td>
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<td>70</td>
<td>Z. Lindgardt et al., <em>Business model innovation – When the Game Gets Tough, Change the Game</em>, 2009</td>
<td>To argue that BM innovation (BMI) is highly relevant in the current business environment, to describe some of the circumstances in which BMI has proved valuable, to identify common pitfalls, and discuss how companies can develop competitive capability in BMI.</td>
<td>Not mentioned.</td>
<td>Conceptual paper providing real world cases (Apple, Virgin Group, JC Decaux, and Ikea) and resulting from the annual survey of Boston Consulting Group database of innovators.</td>
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| 71 | F. Günzel and H. Wilker, *Patterns in Business Models: a Case Survey*, 2009 | To propose a stepwise methodology allowing for pattern analysis and thus the design of alternative evolution paths for BM development. | BM underpinnings:  
- *value chain* concept and the extended notions of *value systems and strategic positioning* (Porter 1985; Porter 1996);  
- *resource-based theory* (Barney, Wright & Ketchen Jr 2001);  
- *strategic network theory* (Jarillo 1995) and *cooperative strategies* (Dyer & Singh 1998);  
- *choices* (e.g. vertical integration, competitive strategy) about firm boundaries (Barney 1999) and relates to *transaction cost economics* (Williamson 1981).  
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<td>74</td>
<td>Antonio Ghezzi, Emerging business models and strategies for Mobile middleware technology providers: a reference framework, 2009</td>
<td>To explore which are the most critical choices to be made at a Business modeling level for a MTTP, to understand how such parameters are interrelated and can be combined to give rise to differential BMs, and finally to delineate what are the most significant underlying strategies or “strategic patterns” that seem to be driving the first steps of MMTPs activity within the Mobile Content competitive arena.</td>
<td>The literature dealing with technology enablers for Mobile market is quite fragmented. Business modelling: Timmers 1998; Rappa 2000; Weill and Vitale 2001; Hawkins 2001; Osterwalder 2004; Haaker et al. 2004; Ballon 2007. Value Network theory. Strategic theory.</td>
<td>Conceptual paper based on qualitative research: 24 in-depth exploratory case studies on Mobile Middleware Technology Providers.</td>
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<td>75</td>
<td>Hiroyuki Itami and Kazumi Nishino, <em>Killing Two Birds with One Stone – Profit for Now and Learning for the Future</em>, 2010</td>
<td>To emphasize the importance of the business system, and explain how its role as the firm’s learning system is central to its success.</td>
<td>Not mentioned.</td>
<td>Conceptual paper supported by real world cases like Google, Toyota and Sharp.</td>
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<td>76</td>
<td>Wendy K. Smith, Andy Binns and Micheal L. Tushman, <em>Complex Business Models: Managing Strategic Paradoxes Simultaneously</em>, 2010</td>
<td>Identification of several types of complex BMs that organizations will need to adopt if they are to host paradoxical strategies.</td>
<td>Organization; Dynamic capabilities; Strategic contradictions.</td>
<td>Research paper, using data from interviews and observations of 12 top management teams.</td>
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<td>77</td>
<td>Yves L.Doz and Mikko Kosonen, <em>Embedding Strategic Agility: a Leadership Agenda for Accelerating Business Model Renewal</em>, 2010</td>
<td>To review the determinants of the capabilities needed to the organization to be more agile: strategic sensitivity, leadership unity and resource fluidity.</td>
<td><em>Strategic agility</em> studies: conceptualization of strategic agility as the ‘thoughtful and purposive interplay’ on the part of top management between three ‘meta-capabilities’: - Strategic sensitivity: the sharpness of perception of, and the intensity of awareness and attention to, strategic developments; - Leadership unity: the ability of the top team to make bold, fast decisions, without being bogged down in top-level ‘win-lose’ politics; - Resource fluidity: the internal capability to reconfigure capabilities and redeploy resources rapidly.</td>
<td>Conceptual paper based on BMs research in a dozen companies - among others, Nokia, easyGroup, HP, SAP and Kone are used as examples.</td>
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<td>79</td>
<td>Henry Chesbrough, <em>Business Model innovation: Opportunities and Barriers</em>, 2010</td>
<td>To explore the barriers to BM innovation and propose reacting actions.</td>
<td>BM innovation → The question is: why don’t more organizations conduct such experiments, to probe for potential new BMs before the time comes when external innovations render their traditional ones redundant? The immediate answer is that businesses face significant barriers to business model experimentation (Amit and Zott 2001; Christensen 2003; Chesbrough and Rosenbloom 2002). Experimentation → How can managers construct the experiments with alternative BMs? One promising approach is to construct maps of BMs, to clarify the processes underlying them, which then allows them to become a source of experiments considering alternate combinations of the processes (Osterwalder 2004; Thomke 2002; McGrath and Macmillan 1995).</td>
<td>Conceptual paper based on case study (Xerox Corporation) and real world BM experimentations (music recording and pharmaceutical industry).</td>
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<td>81</td>
<td>Benoît Demil and Xavier Lecocq, <em>Business Model Evolution: In Search of Dynamic Consistency</em>, 2010</td>
<td>To reconcile static and transformational approaches to BM in order to consider BM evolution, looking particularly at the dynamic created by the interactions between its BM’s components.</td>
<td>BM literature; Penrosian view of the firm; Configurational perspective literature (RCOV model).</td>
<td>Conceptual paper based on a case study: Arsenal FC.</td>
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<td>1</td>
<td>Paul Timmers, <em>Business Models for Electronic Markets</em>, 1998</td>
<td>- An architecture for the product, service and information flows, including a description of the various business actors and their roles; - A description of the potential benefits for the various business actors; - A description of the sources of revenues. A BM in itself does not yet provide understanding of how it will contribute to realise the business mission of any of the companies who is an actor within the model. We need to know the marketing strategy of the company in order to assess the commercial viability.</td>
<td>No construct is presented but a <em>taxonomy</em>: - <em>e-shop</em>: promotion, cost-reduction, additional outlet, (seeking demand); - <em>e-procurement</em>: additional inlet, (seeking suppliers); - <em>e-auction</em>: electronic bidding (no need for prior movement of goods or parties); - <em>e-mall</em>: (collection of e-shops), aggregators, industry sector marketplace; - <em>3rd party marketplace</em>: common marketing frontend and transaction support to multiple business; - <em>Virtual communities</em>: focus on added value of communication between members; - <em>Value chain service provider</em>: support part of value chain, e.g. logistics, payments; - <em>Value chain integrator</em>: added-value by integrating multiple steps of the value chain; - <em>Collaboration platforms</em>: e.g. collaborative design; - <em>Information brokers</em>: trust providers, business information and consultancy.</td>
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<td>2</td>
<td>Gary Hamel, <em>Leading the revolution</em>, 2000</td>
<td>BM is simply a business concept that has been put into practice.</td>
<td>BM components: (1) Customer interface; (2) Core strategy; (3) Strategic resources; (4) Value network. These elements are related to each other thanks to 3 bridges: - Customer benefits: are the link between the strategy and the customer needs. - Configuration: means that there is a company-specific combination of resources, skills and procedures, which is used to support a given strategy. - Company frontiers: refers to the decisions regarding activity, which require recourse to the added value of an external network. The potential of the BM is all the more important for being characterized by: <em>Efficiency, Uniqueness, Appropriateness, and Profit accelerators.</em></td>
<td>Not mentioned.</td>
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<td>3</td>
<td>Jane Linder and Susan Cantrell, <em>Changing Business Models: Surveying the Landscape</em>, 2000</td>
<td>A BM, strictly speaking, is the organization's core logic for creating value. The authors use the term &quot;BM&quot; to mean operating BM.</td>
<td>Components: (1) Pricing model; (2) Revenue model; (3) Channel model; (4) Commerce process model; (5) Internet-enabled commerce relationship; (6) Organizational form; (7) Value proposition. To outline your organization's operating BMs, follow these steps: - Identify all your sources of revenue. - Lay out the key factors underlying your ability to attract and retain each revenue stream. These are your value propositions. - Lay out the key factors that enable you to deliver your value propositions profitably and consistently. These make up your delivery model and your funding model. - Lay out the leverageable assets, capabilities, relationships, and knowledge that result.</td>
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<td>4</td>
<td>Jane Linder and Susan Cantrell, <em>Carved in the water: Changing Business Models fluidly</em>, 2000</td>
<td>A BM is an organization's core logic for creating value. Since organizations compete for customers and resources, a BM must highlight what's distinctive about the firm-how it wins customers, woos investors, and earns profits. Effective BMs are rich and detailed, and the components reinforce each other: change any one and you've got a different model.</td>
<td>Not mentioned.</td>
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<td>5</td>
<td>B. Mahadevan, <em>Business Models for Internet based E-commerce: an Anatomy</em>, 2000</td>
<td>BM is a unique blend of three streams that are critical to the business: value, revenue and logistical streams. The long-term viability of a business largely stems from the robustness of the value stream. The value stream in turn influences the revenue stream and choices with respect to the logistical stream.</td>
<td>(1) <em>Value stream</em> identifies the value proposition for the buyers, sellers and the market makers and portals in an Internet context. (Virtual communities, Dramatic reduction in transaction costs, Gainful exploitation of information asymmetry, Value added market making process). (2) <em>Revenue stream</em> is a plan for assuring revenue generation for the business. (Increased margins over brick &amp; mortar operation, Revenue from online seller communities, Advertising, Variable pricing strategies, Revenue streams linked to exploiting information asymmetry, Free offerings). (3) <em>Logistical stream</em> addresses various issues related to the design of the supply chain for the business. (Dis-intermediation, Infomediation, Meta-mediation).</td>
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<td>6</td>
<td>Jaap Gordijn, Hans Akkermans, and Hans Van Vliet, <em>What's in an Electronic Business Model?</em>, 2000</td>
<td>A BM highlights a network of actors and how they create or consume objects of value. These actors can be private persons, companies or enterprise alliances. Furthermore, a BM represents the services offered by and requested from actors. It should be capable to represent if an actor is willing to exchange an object of value for another object of value. Also, a BM illustrates which actors can have economic transactions with other actors. A transaction is possible if actors offer each other objects of value in which both have a mutual interest.</td>
<td>E-BM ontology centers around the core concept of value, and expresses how value is created, interpreted and exchanged within a multi-party stakeholder network of (extended) enterprises and customers. 3 different views for describing BMs for specific business case. The <em>global actor view</em> shows which parties are involved in a BM and which objects of value they exchange. Its main purpose is to explain the overall BM to a wide range of stakeholders. The <em>detailed actor view</em> takes a further look at the decomposition aspects. It shows, for actors identified in the global actor view, alliances between parties, for instance virtual enterprises. Finally, the <em>value activity view</em> shows the assignment of value-adding activities to actors. Concepts:  - for global actor: actor, value object, value port, value interface, value exchange, value offering, market segment;  - for detailed actor: composite actor and elementary actor, composite value object and elementary value object, the exchange of value;  - for value activity: value activity.</td>
<td>Not mentioned.</td>
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<td>7</td>
<td>L.M. Applegate, <em>E-Business Models: Making sense of the internet business landscape</em>, 2000</td>
<td>BM is a description of a complex business that enables study of the structure, the relationships among structural elements, and how it will respond in the real world.</td>
<td>Not mentioned.</td>
<td>The distinction between BM and strategy is not clear.</td>
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| 8  | Raphael Amit and Christoph Zott, *Value creation in e-business*, 2001 | A BM depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities. The definition of a BM is consistent with the importance of transaction efficiency, novelty in transaction content, structure and governance, complementarities among resources and capabilities, and network effects. | Components:  
(1) Transaction content;  
(2) Transaction structure;  
(3) Transaction governance.  
Transaction content refers to the goods or information that are being exchanged, and to the resources and capabilities that are required to enable the exchange. Transaction structure refers to the parties that participate in the exchange and the ways in which these parties are linked. Transaction structure also includes the order in which exchanges take place, and the adopted exchange mechanism for enabling transactions. | Not mentioned. |
| 9  | D. A. Papakirikopoulos, A.K. Poylumenakou and G.J. Doukidis, *Building e-Business Models: An Analytical Framework and Development Guidelines*, 2001 | A BM refers to the architecture of products, services and the information flows, including a description of the participating business actors (Timmers, 1999). The BM is the focal point around which business is conducted or around which business operations are improved (Eriksson & Magnus, 2000). | In general a BM consist of two basic components:  
- *Actors* which quotes organizations having a common understanding of the market, produce same products or services, maintain a common set of business processes etc.  
- *Relationships* referring to the transactions between two or more players.  
Both components are “static” because they are presenting an instance of the whole business environment.  
Major elements of the analytical framework for eBM are based upon the following issues:  
(1) Coordination;  
(2) Cooperation – Competition;  
(3) Customers Value;  
(4) Core Competence. | The major implication that a BM could have is positioned in a strategic level, thus the reasons for the development of a BM are relative to the strategy of the firm. The macroscopic view adapted is necessary for the creation of a new BM and could deliver a series of benefits to the organizations and provide a better understanding for the strategy. The last decade the strategy of the organization is characterized by strong introversion elements (to survive within rivalry environments, to reduce cost and to gain competitive advantages). Nowadays this orientation proved inefficient and various industries are reconfiguring their strategy. The problem was that the companies following a short sighted strategy lost the holistic and “universal” perspective that a BM could offer. Further a BM could convey business rules, which are the limitations for the successful development of the strategy. A business rule is anchored on the relation linking players in a market. |
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| 10 | Otto Petrovic, Christian Kittl and Ryan D. Teksten, *Developing Business Models for eBusiness*, 2001 | BM is based on a mental representation of certain aspects of the real world that are relevant for the business. Supporting this change of the mental model is therefore a major prerequisite for a methodology for developing BMs. BM gives sense to the various business processes by describing why certain processes are designed the way they are. The business processes, on the other hand, have a dynamic relationship with the underlying information and communication system. | Sub-models:  
(1) Value Model;  
(2) Resource Model;  
(3) Production Model;  
(4) Customer Relations Model:  
- Distribution Model,  
- Marketing Model,  
- Service Model;  
(5) Revenue Model;  
(6) Capital Model;  
(7) Market Model. | Not mentioned. |
(1) mission (goals, vision and value proposition),  
(2) structure (actors and governance, focus),  
(3) processes (customer-orientation, co-ordination mechanism),  
(4) revenues (sources of revenues, business logic),  
(5) legal issues,  
(6) technology. | Not available. |
<p>| 12 | Don Tapscott, <em>Rethinking Strategy in a Networked World</em>, 2001 | A BM refers to the core architecture of a firm, specifically how it deploys all relevant resources (not just those within its corporate boundaries) to create differentiated value for customers. | Not mentioned. | Not mentioned. |</p>
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<td>13</td>
<td>Michael Rappa, <em>Managing the digital enterprise – Business Models on the web</em>, 2001</td>
<td>A BM is the method of doing business by which a company can sustain itself, that is generate revenue. The BM spells-out how a company makes money by specifying where it is positioned in the value chain.</td>
<td>No construct is present but an e-BM taxonomy. The basic categories of BMs are:  - <em>Brokerage</em> (Marketplace Exchange, Buy/Sell Fulfillment, Demand Collection System, Auction Broker, Transaction Broker, Distributor, Search Agent, Virtual Marketplace)  - <em>Advertising</em> (Portal Classifieds, User Registration, Query-based Paid Placement, Contextual Advertising / Behavioral Marketing, Content-Targeted Advertising, Intromercials, Ultramercials)  - <em>Infomediary</em> (Metamediary, Audience Measurement Services, Incentive Marketing, Advertising Networks)  - <em>Merchant</em> (Bit Vendor, Catalog Merchant, Click and Mortar, Virtual Merchant)  - <em>Manufacturer (Direct)</em> (Brand Integrated Content, Lease, License, Purchase)  - <em>Affiliate</em> (Revenue Sharing, Pay-per-click, Banner Exchange)  - <em>Community</em> (Social Networking Services, Open Content, Public Broadcasting, Open Source)  - <em>Subscription</em> (Internet Services Providers, Person-to-Person Networking Services, Trust Services, Content Services)  - <em>Utility</em> (Metered Subscriptions, Metered Usage)</td>
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<td>14</td>
<td>P. Weill and M.R. Vitale, <em>Place to Space: Migrating to eBusiness Models</em>, 2001</td>
<td>(E-)BM is a description of the roles and relationships among a firm’s consumers, customers, allies and suppliers and it identifies the major flows of product, information, and money, as well as the major benefits to participants.</td>
<td>Business model summary: (1) Strategic objectives and value proposition; (2) Sources of revenues; (3) Critical success factors; (4) Core competencies. Atomic BMs can be combined to form an e-business initiative that is composed by: customer segments, channels, IT infrastructure.</td>
<td>Not available.</td>
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<td>18</td>
<td>Robert Tucker, <em>Strategy Innovation takes Imagination</em>, 2001</td>
<td>The BM is simply a description of how the company creates value for customers that in turn generates revenue and profits for your company.</td>
<td>Not mentioned.</td>
<td>Not directly mentioned.</td>
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<td>19</td>
<td>Joan Magretta, <em>Why Business Models Matter</em>, 2002</td>
<td>BMs are heart stories that explain how enterprises work. They answer to Peter Drucker’s age-old questions: - who is the customer? - what does the customer value? - how do we make money in this business? - what is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost? BM describes, as a system, how the pieces of a business fit together.</td>
<td>Embedded in the definition.</td>
<td>Every viable organization is built on a sound BM. But a BM isn’t the same thing as a strategy, they describe a system, how the pieces of business fit together. But they don’t factor in one critical dimension of performance: the competition. Dealing with that reality is strategy’s job. When a new model changes the economics of an industry and is difficult to replicate, it can by itself create a strong competitive advantage.</td>
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<td>20</td>
<td>Henry Chesbrough and Richard S. Rosenbloom, <em>The role of business model in capturing value from innovation: evidence from Xerox Corporation’s technology spin-off companies</em>, 2002</td>
<td>BM provides a coherent framework that takes technological characteristics and potentials as inputs, and converts them through customers and markets into economic outputs. It is thus conceived as a focusing device that mediates between technology development and economic value creation.</td>
<td>BM functions: (1) to articulate the value proposition; (2) to identify a market segment; (3) to define the structure of the value chain within the firm; (4) to estimate the cost structure and profit potential of producing the offering; (5) to describe the position of the firm within the value network linking suppliers and customers; (6) to formulate the competitive strategy</td>
<td>Differences between BM and strategy: 1) BM starts by creating value for the customer, and constructs the model around delivering that value. The emphasis upon value capture and sustainability is much stronger in the realm of strategy. 2) Oftentimes, the financial dimensions of a business are left out of the BM. 3) The BM construct consciously assumes that the state of knowledge held by the firm, its customer and third parties, is cognitively limited, and biased by the earlier success of the firm. Strategy generally requires careful, analytic calculation and choice, which assumes that there is a great deal of reliable information available. It similarly assumes that any cognitive limitations on the part of the firm are of limited importance. The authors think this assumption is not met in the commercialization of early stage technologies, particularly when commercialization occurs within an established company with a previously successful BM.</td>
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| 21 | A. Osterwalder, *An e-Business Model Ontology for Modelling e-Business*, 2002 | BM is the conceptual and architectural implementation of a business strategy and the foundation for the implementation of business processes. | Pillars:  
- Product innovation: (1) value proposition, (2) target customer segments, (3) capabilities.  
- Infrastructure management: (4) activity configuration (value chain/shop/network), (5) resources and assets (tangible, intangible and human), (6) partner network.  
- Customer relationships: (7) information strategy (of gathering, how to use and exploit information), (8) distribution channels (feel & serve), (9) trust and loyalty.  
- Financial aspects: (10) revenue model, (11) cost structure, (12) profit model. | Embedded in the definition of BM. |
| 22 | Jonas Hedman and Thomas Kalling, *The business model: a means to comprehend the management and business context of information and communication technology*, 2002 | Not mentioned. | BM components:  
(1) customers,  
(2) competitors,  
(3) offering,  
(4) activities and organization,  
(5) resources,  
(6) factor and production input suppliers.  
The authors also include a longitudinal process component which covers the dynamic of the BM and highlights the cognitive, cultural, learning, and political constraints on purely rational changes of the model. | Not directly mentioned. |
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<td>24</td>
<td>G.M. Mansfield and L.C.H. Fourie, <em>Strategy and business models – strange bedfellows? A case for convergence and its evolution into strategic architecture</em>, 2003</td>
<td>BM describes the linkage between a firm’s resources and functions and its environment. It is a contingency model that finds an optimal mode of operation for a specific situation in a specific market. The evolving BM concept is derived from a quest for value creation driven by environmental developments and infrastructural opportunities.</td>
<td>It is presented only a reference to a theoretical research construct (STRACWEN) that stands for the strategic architecture of commercial web-enabled enterprises.</td>
<td>BMs shape the specific value-creation behaviour of a commercial web-enabled enterprise. Their product is the revenue-generating ability of the firm. Just as strategy is concerned with futurity, so BMs have an undisguised passion for customer centricity as the source of value creation. The distinguishing characteristics of BMs appear different from those of strategy, but are equally important contributors to effective web-enabled performance. BMs, <em>per se</em>, are not complete. Certain explicit considerations are absent from the BM concept. Not readily identifiable are the factors of strategic intent, sustainable competitive advantage, objective setting, environmental analysis and industry positioning, all of which are favoured by informed strategy.</td>
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<td>25</td>
<td>Peter Seddon and Geoffrey Lewis, <em>Strategy and Business Models: What’s the difference?</em>, 2003</td>
<td>BM is an abstract representation of some aspect of a firm’s strategy; it outlines the essential details one needs to know to understand how a firm can successfully deliver value to its customers.</td>
<td>Not mentioned.</td>
<td>BM is an abstract representation of some aspect of a firm’s strategy. If each BM captures an essential insight of some way of creating economic value, BM may then be combined to create more complex models, and ultimately strategies. It seems that BMs come first. They may be thought of as known successful building blocks for conceptualizing and building strategy. By developing taxonomies and/or defining atomic and molecular BM, it will be possible to combine these to identify and evaluate new and potentially attractive strategies.</td>
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<td>26</td>
<td>E. Faber, P. Ballon, H. Bouwman, T. Haaker, O. Rietkerk and M. Steen, <em>Designing business models for Mobile ICT services</em>, 2003</td>
<td>BM is the way a network of companies intends to create and capture value from the employment of technological opportunities. This definition looks beyond the individual firm and consider the BM for an enterprise, a collaborative effort of multiple companies to offer a joint proposition to their consumers.</td>
<td>A BM for a cross-company enterprise can be regarded as a set of design proposals or blueprints for each of these domains: (1) Service design: a description of the value that the value network offers to a specific target group of users, in particular in terms of a service offering. (2) Organisation design: a description of the configuration of actors that is needed to deliver a particular service, the roles that each plays, making clear how the network creates value for end-users. (3) Technology design: a description of the fundamental organization of a technical system, the technical architecture, which is needed by the firms in the value network to deliver the service offering exhibited in the service design. (4) Finance design: a description of how a value network intends to capture monetary value from a particular service offering and how risks, investments and revenues are divided over the different actors of a value network.</td>
<td>Not mentioned.</td>
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<td>27</td>
<td>G. Camponovo and Y. Pigneur, <em>Business Model Analysis applied to Mobile Business</em>, 2003</td>
<td>Not mentioned.</td>
<td>The participants to Mobile market are analyzed according to: (1) Value proposition, (2) Target customers, (3) Core activities, (4) Business partners, and (5) Revenue flows.</td>
<td>Not mentioned.</td>
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<td>29</td>
<td>L.W. Lam and L.J. Harrison-Walker, <em>Toward an objective-based typology of e-business models</em>, 2003</td>
<td>E-BMs are methods, concepts, frameworks, or architectures by which companies can use the Internet or the Web to carry out their strategies of capturing dominant market positions, establishing viable market niches, adding value for their stakeholders, or sustaining themselves over time.</td>
<td>No construct is proposed but an objective-based typology of popular BMs: Bargain discount; Bounty broker; Brand building; Bundling; Buyer cooperative; Catalog aggregator; Category building; Collaborative design; Community-building; Content aggregator; Dealer support; Dutch auction; E-contest; E-coupon; E-tailer; Free; Free Trial; Manufacturer; Manufacturers’ agents; Metamediary; Online auction; Online exchange; Online product enhancement; Pay-per-use; Post-purchase support; Product line extension; Public support; Retail alliance; Reverse auction; Shopping agent; Subscription; Virtual mall; Voluntary contributor. The typology is built on two axes: - relational objectives: direct access, network development, corporate communication; - value-based objectives: financial improvement, product/channel enrichment. Six cells resulting are: 1) Internet merchants and portals; 2) Virtual product differentiation; 3) Brokerage, purchase assistance, and retail networks; 4) Interactive networks; 5) Internet promoters; 6) Image building.</td>
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<td>30</td>
<td>Donald Mitchell and Carol Coles, <em>The ultimate competitive advantage of continuing business model innovation</em>, 2003</td>
<td>A BM comprises the combined elements of “who”, “what”, “when”, “why”, “where”, “how” and “how much” involved in providing customers and end users with products and services</td>
<td>Not mentioned.</td>
<td>Most companies use one of four strategies to outperform competition: 1) lower prices based on cost advantages; 2) more desirable products and services; 3) more choices and information; 4) close personal relationships. Any of these strategies may become more effective through BM improvement. We need to separate strategies (plans and actions being emphasized to use company’s resources to create or sustain a competitive advantage) from the potential to use BM improvements, replacements and innovations to support those strategies and make them work better.</td>
</tr>
<tr>
<td>31</td>
<td>A.G. Pateli and G.M. Giaglis, <em>A Framework for Understanding and Analyzing eBusiness Models</em>, 2003</td>
<td>Not mentioned.</td>
<td>The proposed framework consists of two principal dimensions/frames: - The horizontal frame, including all the primary components of a BM, such as (1) Mission (Strategic Objectives), (2) Target Market (scope and market segment), (3) Value Proposition (product/service offering), (4) Resources (capabilities, assets), (5) Key Activities (intra- and inter-organisational processes), (6) Cost and Revenue Model (cost and revenue streams, pricing policy), (7) Value Chain/Net (alliances and partnerships). - The vertical frame, including the underlying components of BMs and the issues that outline the wider business and social environment of a BM’s implementation, such as (8) Market Trends, (9) Regulation, and (10) Technology.</td>
<td>Not mentioned. “We have seen very little to link today’s research on BMs to earlier theories of industrial organisation, network economics, social network theory, and so on.”</td>
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<td>32</td>
<td>E. van de Kar, C.F. Maitland, U.W. de Montalvo, and H. Bouwman, Design guidelines for Mobile Information and Entertainment Services, 2003</td>
<td>Not mentioned.</td>
<td>(1) the service formula, (2) the enabling technology, (3) the coordination in the value network, and (4) the revenue models</td>
<td>Not mentioned.</td>
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<td>33</td>
<td>Alexander Osterwalder, The Business Model Ontology. A proposition in a design science approach, 2004</td>
<td>BM is a conceptual tool that contains a set of elements and their relationships and allows expressing a company’s logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.</td>
<td>Building blocks: - PRODUCT: (1) value proposition - CUSTOMER INTERFACE: (2) target customer, (3) distribution channel, (4) relationship - INFRASTRUCTURE MANAGEMENT: (5) value configuration, (6) capability, (7) partnership - FINANCIAL ASPECTS: (8) cost structure, (9) revenue model.</td>
<td>BM is the translation of a company’s strategy into a blueprint of the company’s logic of earning money. Strategy, BM and process models address similar problems on different business layers.</td>
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<td>34</td>
<td>George Yip, Using strategy to change your business model, 2004</td>
<td>Not mentioned.</td>
<td>A BM can be broadly defined as comprising these elements: (1) Value proposition, (2) Nature of inputs, (3) How to transform inputs (including technology), (4) Nature of outputs, (5) Vertical scope, (6) Horizontal scope, (7) Geographic scope, (8) Nature of customers, (9) How to organise.</td>
<td>In most cases companies try to improve performance with routine strategies that do not change the underlying BM. Such routine strategies can usually achieve reasonable improvement, but more drastic ambitions, such as doubling or tripling market share, may require a fundamental change in the BM – to target new customer groups, to change the nature of the value position and so on. A radical (or transformational) strategy is needed to change the BM in one or more fundamental ways.</td>
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<td>35</td>
<td>Timber Haaker, Edward Faber, Harry Bouwman, <em>Balancing strategic interests and technological requirements for Mobile services</em>, 2004</td>
<td>BM is a blueprint for how a network of organizations co-operates in creating and capturing value from new (Mobile) services or products.</td>
<td>(1) Service domain: a description of the service offering, its added value, and the market segment at which the offering is targeted; (2) Technology domain: a description of the technical functionality required to realize the service offering; (3) Organization domain: a description of the structure of the multi-actor value network required to create and distribute the service offering (organizational arrangements); (4) Finance domain: a description of how risks, investments and revenues are divided over the different actors of a value network (financial arrangements).</td>
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| 37 | Scott M. Shafer, H. Jeff Smith and Jane C. Linder, *The power of business models*, 2005 | BM is a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network. | Components: 
(1) strategic choices (customer, value proposition, capabilities/competencies, revenue/pricing, competitors, output, strategy, branding, differentiation, mission); 
(2) value network (suppliers, customer information, customer relationship, information flows, product/service flow); 
(3) create value (resources/assets, processes/activities); 
(4) capture value (cost, financial aspects, profit). | BM is not in itself a strategy. After identifying the relevant strategic decision areas and the options in each, choices are made. A BM embodies a set of choices. They facilitate the analysis, testing, and validation of the cause-and-effect relationships that flow from the strategic choices that have been made. In some cases, executives can best effect this by directly translating one set of strategic choices into a single BM, which they then analyze, test, and validate. In other cases, executives may wish to consider a range of BMs simultaneously, each representing a different set of strategic choices before drawing a conclusion about the best BM for their organization. |
| 38 | James Richardson, *The Business Model: an Integrative Framework for Strategy Execution*, 2005 | BM is a description of the logic that lies behind the actual processes. | Major components: 
(1) Value proposition: offering, target customer, basic strategy to win customers and gain competitive advantage, 
(2) Value creation and delivery system: resources and capabilities (vrio), organization (value chain, activity system and business processes), position in the value network (links to suppliers, partners and customers) 
(3) Value capture: revenue sources, economics of the business. | Frameworks for understanding how firms compete effectively are useful in strategy FORMULATION but incomplete and fragmented for the EXECUTION, that is how the firm’s strategy should be translated into action. 
BM is a conceptual framework that helps to link the firm’s strategy, or theory of how to compete, to its activities or execution of the strategy. 
Essential connections between strategy and execution are provided by two steps: recognizing the demands the strategy will place on the organization, and setting short term objectives. 
Business Modelling vs Strategy Mapping |
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<td>39</td>
<td>Alexander Osterwalder, Yves Pigneur and Christopher L. Tucci, <em>Clarifying business model: origins, present and future of the concept</em>, 2005</td>
<td>A BM is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams. BM's place in the firm is the blueprint of how a company does business. BM serves as a building plan that allows designing and realizing the business structure and systems that constitute the company’s operational and physical form.</td>
<td>Nine building blocks (Osterwalder 2002).</td>
<td><em>Strategy includes execution and implementation,</em> while the BM is more about how a business works as a system. BM implementation or execution is a widely neglected issue. A BM can be more or less sound and coherent but then it still must be implemented. A &quot;strong&quot; BM can be managed badly and fail, just as much as a &quot;weak&quot; BM may succeed because of strong management and implementation skills. BM is the translation of strategic issues and strategic goals into a conceptual model that explicitly states how the business functions.</td>
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<td>40</td>
<td>H. Tikkanen, J. Lamberg, P. Parvinen and J. Kallunki, <em>Managerial cognition, action and the business model of the firm</em>, 2005</td>
<td>BM is a system manifested in the components and related material and cognitive aspects. It’s the mechanism underpinning the actualization of any relevant business-related outcomes that consists of how the material aspects of the BM interact with managerial belief systems.</td>
<td>Material aspects: (1) Strategy and structure; (2) Business network; (3) Operations; (4) Finance and accounting. Belief system: - Reputational ranking; - Industry recipes; - Boundary beliefs; - Product ontologies.</td>
<td>The function of the strategy is to give meaning and direction to the development of the company’s BM. Strategy does not concentrate on any particular aspect, but on the totality constituted by the components of the BM.</td>
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| 41 | Glen Martin Mansfield, *A strategic architecture and its role in enhancing the performance of commercial web-enabled enterprises*, 2005 | Generally, a BM is a description of the fit between the firm’s resources and functions, and its environment. | The dimensions of BM are: (1) economic innovativeness, (2) macroeconomic positioning, (3) value creation potential, (4) market exploitability, (5) customer centricity, (6) intermediation, (7) technology infrastructure management. | Differences between strategy and BM concepts:  
- broad theoretical arena: strategic intent vs value creation;  
- primary theoretical question: how to manage the fit between firm and environment vs how to profit by leveraging relationships;  
- primary purpose: sustainable competitive advantage vs creating and sustaining value;  
- primary domain of interest: industry position and resource conversion vs alliances;  
- primary focus of analysis: strategy design and implementation vs value network;  
- primary emphasis: strategy process and content vs revenue;  
- result: sustainable profit vs value delivery and profit;  
- key ingredient: management behaviour vs information technology;  
- optimises: organisational processes vs logistics;  
- central theme: maximising shareholder wealth vs optimal value proposition.  
The fusion of strategy with an effective BM forms the strategic architecture of a firm and that becomes the fundamental sine qua non for success. |
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| 42 | B. Kijl, H. Bouwman, T. Haaker and E. Faber, *Developing a dynamic business model framework for emerging Mobile service*, 2005 | A BM describes the way the company or network of companies aims to create customer and network value. A viable and feasible BM should always deliver value to customers as well as to all other participating actors in the value creation system. Financial arrangements and organizational arrangements may play an important role in this context. | Generic BM components:  
(1) service domain: the service concept and value proposition that organizations want to offer,  
(2) technology domain: technical functions and architecture needed to realize the value proposition,  
(3) organizational domain: agreements concerning the cooperation between organizations to deliver the value proposition,  
(4) financial domain: costs, investments, revenues and risks, agreements on how to divide them among organizations.  
A dynamic BM framework is proposed. | Not mentioned. |
| 43 | Michael Morris, Minet Schindehutte and Jeffrey Allen, *The entrepreneur’s business model: toward a unified perspective*, 2005 | A BM is a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets. | Components:  
(1) Factors related to the offering: How will the firm create value?  
(2) Market factors: For whom will the firm create value?  
(3) Internal capability factors: What is the firm’s internal source of advantage?  
(4) Competitive strategy factors: How will the firm position itself in the marketplace?  
(5) Economic factors: How will the firm make money?  
(6) Personal/investor factors: What are the entrepreneur’s time, scope, and size ambitions?  
- Foundation level: defining basic components  
- Proprietary level: creating unique combinations  
- Rules level: establishing guiding principles | The BM encourages the entrepreneur:  
- to conceptualize the venture as an interrelated set of strategic choices;  
- to seek complementary relationships among elements through unique combinations;  
- to develop activity sets around a logical framework;  
- to ensure consistency between elements of strategy, architecture, economics, growth, and exit intentions.  
Strategic choices that characterize a venture are made both intentionally and by default.  
The BM makes the choices explicit. The model is a relatively simple way to delimit and organize key decisions that must be made at the outset of a venture. |
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| 44 | L. Lehmann-Ortega and J.-M. Schoettl, *From buzzword to managerial tool: the role of business models in strategic innovation*, 2005 | BM is the description of the way a business can create value through the value it proposes to its customers, its value architecture (including its resources and internal and external value chain) and how it can capture the value to convert it into profit. | Components:  
1. Value proposition: type of customer or market segment, product/service or mere information, partners;  
2. Value architecture: business’s resources, internal value chain, external value chain (links with partners, suppliers or complementors);  
3. Revenue model: cost structure and value capture by the business. | The BM concept builds a bridge between the strategy and the organisational, commercial and financial aspects of the firm. It makes it possible to combine thinking on strategy choices, sources of revenue and cost structure. So, both in practice and in theory, the concept of the BM forms the link between the (business and corporate) strategy of a company and its operational translation into financial, structural and commercial terms. Part of the alchemy of strategy choices and their operational translation (into revenues) seems more easily understood when seen through the prism of the BM. The way the concept of the BM has been taken up proves the necessity of intermediate concepts to make strategies operational. |
| 45 | Timber Haaker, Edward Faber, Harry Bouwman, *Developing Mobile Services: Balancing Customer and Network Value*, 2005 | BM is a blueprint for how a network of organizations co-operates in creating and capturing value from new (Mobile) services or products. | 1. Service domain: a description of the service offering, its added value, and the market segment at which the offering is targeted;  
2. Technology domain: a description of the technical functionality required to realize the service offering;  
3. Organization domain: a description of the structure of the multi-actor value network required to create and distribute the service offering (organizational arrangements);  
4. Finance domain: a description of how risks, investments and revenues are divided over the different actors of a value network (financial arrangements). | Not mentioned. |
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<td>47</td>
<td>Maitland et al., <em>Mobile information and entertainment services: business models and service networks</em>, 2005</td>
<td>A BM is the organization (or ‘architecture’) of product, service and information flows and the sources of revenues and benefits for suppliers and customers (Timmers, 1998). We see the BM as the key to shaping an important network characteristic, its governance.</td>
<td>The model posits that characteristics of the BM, namely (1) the revenue model and (2) the benefits of network membership will shape the service network.</td>
<td>Such a BM has limited scope and does not include, for example, the overall marketing strategy or general strategic orientation of the firm. Although the contribution of the BM concept continues as a topic of debate.</td>
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<td>48</td>
<td>Raphael Amit and Christoph Zott, <em>Business Model Design and the Performance of Entrepreneurial Firms</em>, 2006</td>
<td>Amit and Zott (2001): definition of BM as depicting the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities.</td>
<td>Not mentioned.</td>
<td>Open issue: how does BM design contribute to the competitive advantage of firms? How does it interact with firm strategies, such as product market positioning?</td>
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| 49 | Richard Lai, Peter Weill and Thomas Malone, *Do Business Models matter?*, 2006 | Typological definition based on two dimensions:  
- type of assets involved (what products or services have been created for appropriation): physical; financial; intangible; human.  
- type of rights being sold (how value is appropriated: right of ownership, right to use, right to be matched): creator; distributor; landlord; broker.  
= 16 BMs | Not mentioned. | Not mentioned. |
| 50 | Peter Keen and Sajda Quareshi, *Organizational Transformation through Business Models: a Framework for Business Model Design*, 2006 | A BM is a hypothesis (i.e., a model) of how to generate value in a customer-driven marketplace. It is a highly focused “public” declaration intended to help identify and build relationships that are core to turning the model into reality. | Not mentioned. | Strategy follows on from the BM and is targeted to achieve competitive differentiation. To some degree, the BM is the “what” of business innovation and strategy the “how.” The two terms are often used interchangeably. This both weakens the value of the sharp logic of an effective BM and makes it a redundant concept if it is just a variant on strategy.  
The separation of BM from strategy has far-reaching impacts. The most consequential is that the logic of value-generation is the core of a BM; the details of how to realize that value are in the domain of strategy.  
A BM establishes first order principles and strategy is the second order derivative of imperatives for action. |
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<td>52</td>
<td>Saku Makinen and Marko Seppanen, Strategic Management of Exploiting Technological Opportunities: Integrating Strategy to Operations with Business Model Concept, 2006</td>
<td>Not mentioned.</td>
<td>Osterwalder’s nine building blocks.</td>
<td>Strategy process and its related routines are tying together explicitly BM elements and strategy elements. However, strategy implementation needs to be facilitated at the operational level and therefore BM concept needs also to be tied into these operational processes. These business processes are therefore the operationalizing devices for the strategy elements that have been identified and tied into BM elements.</td>
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<td>53</td>
<td>Pieter Ballon and Michael Van Bossuyt, Comparing business models for multimedia content distribution platforms, 2006</td>
<td>Not mentioned.</td>
<td>The four configurations are analyzed and compared from a strategic management point of view, on the following levels: (1) Value Network level, (2) Functional Architecture level, (3) Financial level, (4) Value Proposition level.</td>
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| 54 | Henry Chesbrough, *Business Model innovation: it’s not just about technology anymore*, 2007 | BM performs two important functions:  
- value creation: it defines a series of activities, from procuring raw materials to satisfying the final consumer, which will yield a new product or service in such a way that there is net value created throughout the various activities,  
- value capture: BM captures value from a portion of those activities for the firm developing and operating it. There can be real tensions between the aspects of a BM that create value and those that help to capture a portion of that value, they must be balanced. | Functions: articulate value proposition, identify market segment, define structure of value chain, specify revenue generation mechanism, describe position of the firm within value network, formulate the competitive strategy.  
BM Framework: model that sequences possible BM from very basic models to far more advanced models (undifferentiated, some differentiation, segmented, externally aware, innovation process integrated, adaptive platform). | Not mentioned. |
| 55 | Pieter Ballon, *Business modelling revised: the configuration of control and value*, 2007 | Not mentioned. | (1) Level of value network (Combination of assets; Vertical integration; Customer ownership)  
(2) Level of functional model (Modularity, Distribution of intelligence, Interoperability)  
(3) Level of financial model (Cost sharing model, Revenue model, Revenue sharing model)  
(4) Level of value proposition (Positioning, User involvement, Intended value) | The paper only suggests a relationship between Strategy and BM Design, though the issue is not explored further. It is identified as a literature gap and is left for future research. |
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| 56 | Bruce Rasmussen, *Business Models and the Theory of the Firm*, 2007 | BM is designed to answer a series of questions essential to any business – who are the customers, what do they value, how that value can be delivered to the customer at an appropriate cost and how the business deploys its assets. It includes a description of the key assets, both physical and intangible such as intellectual property, governance structure and management. It consists of both a narrative of how the business works and the numbers – how it makes a profit. The author relies on Chesbrough and Rosenbloom (2002) definition. | Chesbrough and Rosenbloom’s six functions:  
- to articulate the *value proposition*;  
- to identify a *market segment*;  
- to define the structure of the *value chain* within the firm;  
- to estimate the *cost structure* and *profit potential* of producing the offering;  
- to describe the position of the firm within the *value network* linking suppliers and customers;  
- to formulate the *competitive strategy* | Each BM element (value proposition, market segment and revenue model, value chain, cost structure and profit potential, value network, competitive strategy) is linked to the relevant theories (RBV, relational view, transaction cost economics, dynamic capabilities, appropriability regime, value chain analysis, absorptive capacity) and their implications for the innovative firm. |
<p>| 57 | Ramon Casadesus-Masanell and Joan E. Ricart, <em>Competing through business models</em>, 2007 | BM is defined as a company’s <em>choices</em> of policies and assets, the governance structure of those policies and assets, and their <em>consequences</em>, whether flexible or rigid. BM representation includes also theories that are suppositions on how choices and consequences are related. | Not mentioned. | A company’s strategy results in a particular set of choices which, together with their consequences, constitutes a BM. So the company’s BM is a reflection of its strategy. Tactics are also courses of action but the action sets available for tactics are constrained by the BM in place. Tactical interactions refers to organizations affecting each other by acting within the bounds set by their BMs. Strategic interaction refers to organizations affecting each other by modifying their BMs. |
| 58 | Saku Makinen and Marko Seppanen, <em>Assessing business model concepts with taxonomical research criteria – A preliminary study</em>, 2007 | Not mentioned. | Not mentioned. | The strategy of an organization is concerned more with value capturing and its sustainability than with value creation, while a BM should be concerned with integrating sustainable value creation with capturing and appropriation. |</p>
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<td>59</td>
<td>Thierry Verstraete and Estèle Jouison, <em>Three theories to frame the concept of business model in context of firm foundation</em>, 2007</td>
<td>The BM is the representation of a business expressing how the value is generated, remunerated and shared.</td>
<td>Not mentioned.</td>
<td>Not mentioned.</td>
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<td>60</td>
<td>L.B. Methlie and P.E. Pedersen, <em>Business model choices for value creation of Mobile services</em>, 2007</td>
<td>Not mentioned.</td>
<td>BM dimensions: (1) Service strategy: value proposition, and market focus; (2) Governance form: ways in which flows of information, resources and goods are controlled by the parties of the value-creating business network; (3) Revenue model: revenue valuation and sharing.</td>
<td>Not mentioned.</td>
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<td>61</td>
<td>C.H. Leung, <em>Evolution of the Business Model</em>, 2007</td>
<td>A BM is an abstract representation of some aspect of a firm’s strategy (Seddon &amp; Lewis, 2003). The BM performs two important functions that include value creation and value capture. BMs capture value from technology and turn them into economic output by creating value to its customers. In general, BMs can be described by using BM components.</td>
<td>Not mentioned.</td>
<td>BMs change as a result of the firm’s changing strategy. The strategy of the company, the introduction of new technologies, and the maturity of old technologies and markets are the main drivers that will affect the evolution of the BM.</td>
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| 62 | Mutaz Al-Debei and Davison Avison, *Business Model Requirements and Challenges in the Mobile Telecommunications Sector*, 2008 | BM is an abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, cooperative, and financial arrangements designed and developed by an organization presently and in the future, as well all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives. | V4 BM framework:  
(1) *Value proposition*: describes core services and products that MNO offer or will offer along with their intended value elements;  
(2) *Value network*: Represents the external arrangements which revolve around the communication and collaboration a MNO needs and conducts with other businesses in its value system, including suppliers, third parties, and intermediaries;  
(3) *Value architecture*: specifies technological architectures and arrangements that enable cellular communication to operate efficiently and effectively; and organizational arrangements of resources and capabilities including MNO’s structure, task force, management mindsets, and culture to enable cellular service provisioning as desired;  
(4) *Value finance*: arrangements concerned with revenue models, investment decisions, revenue sharing, cost effectiveness, net cash and return. 3 categories: Total cost of ownership; Pricing methods; Revenue structure. | Not mentioned. |
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<tr>
<td>64</td>
<td>D.J. Teece, <em>Business Models, Business Strategy and Innovation</em>, 2009</td>
<td>BM describes the design or architecture of the value creation, delivery, and capture mechanisms it employs. The essence of a BM is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.</td>
<td>BM design elements are: (1) select technologies and features to be embedded in product/service; (2) determine benefits to the customer from consuming/using the product/service; (3) identify market segment to be targeted; (4) confirm available revenue streams; (5) design mechanisms to capture value.</td>
<td>BM is more generic than a business strategy, coupling strategy analysis with BM analysis is necessary in order to protect whatever competitive advantage results from the design and implementation of new BM. Coupling competitive strategy analysis to BM design requires: - segmenting the market, - creating a value proposition for each segment, - setting up the apparatus to deliver that value, - figuring out various “isolating mechanisms” that can be used to prevent BM/strategy from being undermined. Strategy analysis is thus an essential step in designing a competitively sustainable BM.</td>
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<td>65</td>
<td>R. Casadesus-Masanell, J. Enric Ricart, <em>From Strategy to Business Models and to Tactics</em>, 2009</td>
<td>Choices and associated consequences are the organization’s BM because they determine the logic of the firm, the way it operates and how it creates value for its stakeholders. The analyst proceeds by selecting what he believes are the key choices then observes the main consequences. In connecting the two, he is effectively making use of theories. The resulting map is a BM representation.</td>
<td>Not mentioned.</td>
<td>FRAMEWORK to integrate strategy, BM and tactics: <em>Generic two-stage competitive process framework.</em> Strategy vs BM: Difference arises when the firm’s plan of action calls for modifications to the BM when particular contingencies take place (realization of an event outside the control of the firm, actions by other industry players...), One crucial difference is that BM are observable while strategies are not fully observable, unless the competitive situations are trivial. Every organization has some BM, not every organization has a strategy. Tactical choices are relatively easy to change.</td>
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<td>66</td>
<td>C. Zott and R. Amit, <em>Designing your future Business Model: an activity system perspective</em>, 2009</td>
<td>BM: - depicts content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities. - encompasses the set of which activities a firm perform, how it performs them, and when it performs them. - mediates between technological inputs and economic outputs and defines the structure of the value chain. It thereby addresses the underlying logic of how the firm delivers value to its customers at an appropriate cost.</td>
<td><em>Design parameters of activity systems:</em> (1) content of an activity; (2) structure of an activity system; (3) governance of an activity system. <em>NICE design themes:</em> - novelty, - lock-in, - complementarities, - efficiency.</td>
<td>Not mentioned.</td>
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<td>67</td>
<td>M. Johnson, C. Christensen and K. Henning, <em>Reinventing your Business Model</em>, 2009</td>
<td>BM consists of 4 interlocking elements: customer value proposition, profit formula, key resources, key processes. Power of the framework lies in the complex interdependencies of its parts.</td>
<td>(1) Customer value proposition: target customer, job to be done, offering. (2) Profit formula: revenue model, cost structure, margin model, resource velocity. (3) Key resources: people, technology and products, equipment, information, channels, partnerships, brand. (4) Key processes: processes, rules and metrics, norms.</td>
<td>When addressing the scenarios of “strategic circumstances” that need to be evaluated so as to understand if a new BM is required, the study is implicitly linking the BM construct to the more traditional strategy concept: BM design is to a large extent related to business strategies aimed at exploiting disruptive innovations that change a business area’s boundaries, and it can affect a firm’s competitive advantage and strategic positioning with reference to its incumbent or new competitors.</td>
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<td>68</td>
<td>M. Johnson and C. Christensen, <em>What are Business Models, and how are they built?</em>, 2009</td>
<td>BM consists of 4 interlocking elements: value proposition, profit formula, resources, processes. Power of the framework lies in the complex interdependencies of its parts.</td>
<td>(1) Value proposition: product that helps customers to do more effectively, conveniently and affordably a job they have been trying to do. (2) Profit formula: assets and fixed cost structure, and the margins and velocity required to cover them. (3) Resources: people, technology, products, equipment, facilities, brand and cash required to deliver this value proposition to the targeted customers. (4) Processes: ways of working together to address recurrent tasks in an consistent way.</td>
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<td>69</td>
<td>Frank Goethals, <em>The unified business model framework</em>, 2009</td>
<td>BM could be defined as “the what, how, where, who, when and why of (1) the things in some state and of (2) the way things are changed”.</td>
<td>BM framework contains three sub-models: - Realization model: that focuses on the inside of the company = (1) Execution model + (2) Control model; - Value model: that shows exchanges between customer and company = (3) Offering model + (4) Compensation model; - Environment model: that considers the environment of the company = (5) Customer Relations model + (6) Inter-organizational model. Each of the models considers the ‘what’, ‘how’, ‘where’, ‘who’, ‘when’ and ‘why’ of the model.</td>
<td>Strategy is the ‘why’ element in the BM framework. It gives direction on why to choose some option in the other boxes and helps aligning all decisions. Anyway strategy considerations are often omitted in BM literature.</td>
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<td>70</td>
<td>Z. Lindgardt et al., <em>Business model innovation – When the Game Gets Tough, Change the Game</em>, 2009</td>
<td>BM consists of two essential elements: the value proposition and the operating model.</td>
<td>(1) Value proposition reflects explicit choices along the following three dimensions: Target Segments, Product or Service Offering, Revenue Model. (2) Operating model captures the business’s choices in the following three critical areas: Value Chain, Cost Model, Organization.</td>
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<td>71</td>
<td>F. Günzel and H. Wilker, <em>Patterns in Business Models: a Case Survey</em>, 2009</td>
<td>BMs are an abstraction of how organizations create value. The BM construct acts as a unifying unit of analysis that captures value creation arising from multiple sources. The BM depicts the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities. (Amit and Zott 2001)</td>
<td>(1) Transaction content: refers to the goods or information being exchanged and to the resources and capabilities that are required to enable the exchange; (2) Transaction structure: refers to the parties that participate in the exchange and the ways in which these parties are linked; (3) Transaction governance: refers to the ways in which flows of information, resources, and goods are controlled by the relevant parties</td>
<td>Not mentioned.</td>
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<td>72</td>
<td>Thierry Verstraete and Estèle Jouison-Laffitte, <em>The business model, a relevant concept in entrepreneurship training</em>, 2009</td>
<td>BM is defined as a convention regarding the value generation, to its remuneration and the division of this remuneration (the GRD model).</td>
<td>Not mentioned.</td>
<td>The BM (even unfinished) can be mobilized within the framework of these exercises of conviction whereas speaking about strategy is premature. A reflection in terms of BM thus makes it possible for an entrepreneur to articulate various components of his project such as his promise of value creation, the manufacture and the remuneration of this one, these elements implying exchanges within a value network. The BM facilitates the alignment of the actors of the value network around a shared vision of the proposition and the value exchanges between the organization and its stakeholders. The BM being, to some extent, a simplified and partial version of strategy, it is more accessible than the latter for the entrepreneurs which, consequently, are able to communicate it more easily.</td>
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<td>73</td>
<td>M. de Reuver, H. Bouwman and T. Haaker, <em>Mobile business models: organizational and financial issues that matter</em>, 2009</td>
<td>Not mentioned.</td>
<td>Model components: (1) service domain: a description of the value proposition and the market segment at which the offering is aimed; (2) technology domain: a description of the technical functionality required to realize the service offering; (3) organization domain: description of the structure of the multi-actor value network required to create and distribute the service offering and describe the focal firm’s position within this value network; (4) finance domain: description of the way a value network intends to generate revenues from particular service offering and of the way risks, investments and revenues are divided among the various actors in a value network.</td>
<td>Not mentioned.</td>
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<td>74</td>
<td>Antonio Ghezzi, <em>Emerging business models and strategies for Mobile middleware technology providers: a reference framework</em>, 2009</td>
<td>Not mentioned.</td>
<td>BM reference framework is divided in three macro-dimensions and 9 parameters suggested for MTTP: (1) Value proposition parameters: Platform characteristics; Offer positioning; Platform provisioning; Additional services; Resources &amp; competencies. (2) Value network parameters: Vertical integration; Customer ownership. (3) Financial configuration parameters: Revenue model; Cost model.</td>
<td>The framework builds on the assumption that a firm’s overall strategy is closely linked to the BM, and drives its design. This arises from the consideration that a firm’s overall strategy comprises all the choices to be made at a business modeling level, and BM design essentially represents a concretization and operationalization of strategy; this implies that, in order to be effective, BM parameters shall be strategically aligned. Therefore, understanding the peculiarities of the BM adopted by a firm allows to make insightful inferences on the underlying strategy determining it.</td>
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| 75 | Hiroyuki Itami and Kazumi Nishino, *Killing Two Birds with One Stone – Profit for Now and Learning for the Future*, 2010 | BM is composed of two elements, a business system and a profit model, hence the term BM. A business system is the ‘system of works’ (the production/delivery system) that a firm designs - within and beyond its boundaries - to deliver its products or services to its target customers. A profit model is a pattern of the firm’s intention about how it will make a profit in its given business, i.e. how it plans to increase sales and/or reduce costs. | In designing its business system, the firm usually has to determine the following three things: 
- the division of labor between the firm and its trading partners (typically a decision between outsourcing and internal procurement); 
- internally, how should the firm organize its in-house working system; 
- externally, how it should control the activities of its trading partners. 
A business system functions as a learning system. The business system determines two factors: 
- the elements of the entire work flow that are to be done in-house to deliver the product to the customer (and thus those which are to be outsourced); 
- the information system that operates and controls the entire work flow from both in-house works and outsourced operations for final delivery to the customer. | Not mentioned. |
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<td>76</td>
<td>Wendy K. Smith, Andy Binns and Micheal L. Tushman, <em>Complex Business Models: Managing Strategic Paradoxes Simultaneously</em>, 2010</td>
<td>BM means the design by which an organization converts a given set of strategic choices - about markets, customers, value propositions - into value, and uses a particular organizational architecture - of people, competencies, processes, culture and measurement systems - in order to create and capture this value.</td>
<td>Not mentioned.</td>
<td>Long-term success depends on adopting and then being able to manage <em>paradoxical strategies</em> simultaneously (eg: exploring and exploiting). By strategy, we refer to a set of products/services and their means of competing in the marketplace, and we use the term paradoxical to refer to multiple strategies that are ‘contradictory, yet interrelated’. Paradoxical strategies thrive within complex BMs. Complex BMs are designed to attend to the tensions of paradoxical strategies which may emanate from inconsistencies or contradictions in the products/services, marketplace, and/or the processes, rewards and competencies associated with each strategy. The authors identify several examples of complex BMs, including: ambidextrous organizations, social enterprises, learning organizations.</td>
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<td>77</td>
<td>Yves L. Doz and Mikko Kosonen, <em>Embedding Strategic Agility: a Leadership Agenda for Accelerating Business Model Renewal</em>, 2010</td>
<td><em>Objectively</em> BMs are sets of structured and interdependent operational relationships between a firm and its customers, suppliers, complementors, partners and other stakeholders, and among its internal units and departments. These ‘actual’ relationships are articulated in procedures or contracts and embedded in tacit action routines. But, for the firm’s management, BMs also function as a <em>subjective</em> representation of these mechanisms, delineating how it believes the firm relates to its environment. So BMs stand as cognitive structures providing a theory of how to set boundaries to the firm, of how to create value, and how to organise its internal structure and governance. In both cases, BMs tend also to be naturally stable, and hard to change. Their stability is further increased by the search for efficiency and predictability, particularly in periods of rapid growth, where the reliable and efficient scaling up of operations becomes critical.</td>
<td>Not mentioned.</td>
<td>Successful BM <em>renewal and transformation</em> are the main outcomes of strategic agility. First, heightened <em>strategic sensitivity</em> (anticipating, experimenting, distancing, abstracting, reframing) allows firms to identify opportunities for new BMs and also to be sensitive to the timely need for the renewal and transformation of their existing BMs. Second, BM changes often involve gut wrenching decisions for executives, calling for difficult and risky personal adjustments and collective commitments. New adaptive leadership work and <em>leadership</em> team unity are essential to enable shifts in BMs (dialoguing, revealing, integrating, aligning, caring). Thirdly, <em>resource fluidity</em> (decoupling, modularising, dissociating, switching, grafting) is called for to allow firms to redeploy and reallocate their resources - particularly people - to new opportunities or new activities in a transformed activity system.</td>
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<td>78</td>
<td>Charles Baden-Fuller and Mary S. Morgan, <em>Business Models as Models</em>, 2010</td>
<td>BMs:  - <em>are ideal types</em> defined as &quot;types derived from exemplary cases and their analysis as models&quot;;  - take on aspects of the <em>model organisms</em> of biology;  - can be conceived as a <em>recipes</em>.</td>
<td>Not mentioned.</td>
<td>Open issue: when people are asked ‘what is strategy’? most give an answer that includes the words BM. The ubiquity of the term and the plethora of its uses suggest that BMs are profoundly important to the world of work - yet management academics rarely put the concept centre stage, preferring their established stresses on such concepts as competitive advantage, core capabilities, routines and resources.</td>
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| 79 | Henry Chesbrough, *Business Model innovation: Opportunities and Barriers*, 2010 | Not mentioned. | Chesbrough and Rosenbloom (2002) BM fulfills the following functions:  
- Articulates the value proposition (i.e., the value created for users by an offering based on technology);  
- Identifies a market segment and specify the revenue generation mechanism (i.e., users to whom technology is useful and for what purpose);  
- Defines the structure of the value chain required to create and distribute the offering and complementary assets needed to support position in the chain;  
- Details the revenue mechanism(s) by which the firm will be paid for the offering;  
- Estimates the cost structure and profit potential (given value proposition and value chain structure);  
- Describes the position of the firm within the value network linking suppliers and customers (incl. identifying potential complements and competitors);  
- Formulates the competitive strategy by which the innovating firm will gain and hold advantage over rivals. | Not mentioned. |
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<td>80</td>
<td>Rita Gunther McGrath, <em>Business Models: A Discovery Driven Approach</em>, 2010</td>
<td>Not mentioned.</td>
<td>BM is constituted of two core components: (1) the basic ‘unit of business’, which is the building block of any strategy, because it refers to what customers pay for. (2) process or operational advantages, which yield performance benefits when more adroit deployment of resources leads a firm to enjoy superior efficiency or effectiveness on the key variables that influence its profitability. You can think of these process advantages as being captured in a set of ‘key metrics’ that allow a firm to deliver superior performance.</td>
<td>BM suggests a change to the way that strategies are conceived, created and executed against. Modelling, therefore, is a useful approach to figuring out a strategy, as it suggests experimentation, prototyping and a job that is never quite finished. For academics or executives trying to make sense of why some firms do better than others, and how firms might themselves benefit from such understanding, the BM concept offers four ideas: 1. It promotes an outside-in focus; 2. BMs often cannot be fully anticipated in advance (centrality of experimentation); 3. New appreciation of the dynamism of competitive advantages. The BM construct encourages conversations which might help us discern possible early warnings of model weakness and prompt the search for new ones; 4. As BMs themselves evolve and mature, adopting the notion suggests a developing understanding that strategy itself is quite frequently discovery driven rather than planning oriented.</td>
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<td>81</td>
<td>Benoît Demil and Xavier Lecocq, <em>Business Model Evolution: In Search of Dynamic Consistency</em>, 2010</td>
<td>The concept of BM refers to the description of the articulation between different components or ‘building blocks’ to produce a proposition that can generate value for consumers and thus for the organization. It can be used at different levels, which are equally important. At an abstract and conceptual level, the BM concept refers to generic representations that can be applied in multiple sectors. But the BM concept can also refer to real world instances and to the study of the models implemented by concrete organizations. At the individual level of analysis, each organization’s own specific BM is linked to a more generic BM. The authors conceive of the BM as the way an organization operates to ensure its sustainability.</td>
<td>BM can be described with three core components: its resources and competences, its organizational structure and its propositions for value delivery. → RCOV model: (1) The resources may come from external markets or be developed internally, while the competences refer to the abilities and knowledge managers develop, individually and collectively, to improve, recombine or change the services their resources can offer. (2) The organizational structure encompasses the organization’s activities and the relations it establishes with other organizations to combine and exploit its resources. This ‘building block’ includes its value chain of activities and its value network. (3) The BM also includes the value propositions a company delivers to customers, in the form of its products and services. These propositions also encompass how and to whom the offer will be marketed.</td>
<td>Not mentioned.</td>
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<td>82</td>
<td>A. Ghezzi, R. Balocco, and A. Rangone, <em>How to Get Strategic Planning and Business Model Design Wrong: The Case of a Mobile Technology Provider</em>, 2010</td>
<td>BM generally refers to the ‘architecture of a business,’ or the way firms structure their activities in order to create and capture value.</td>
<td>BM reference framework has three building blocks: (1) Value proposition; (2) Value network; (3) Financial configuration.</td>
<td>The literature review on BM design allowed us to individuate a literature gap concerning strategy creation and BM design in the relatively young Mobile content market. The explicit relationship between strategy and BM is currently under-investigated.</td>
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Table A.3: Relationship between Business Model and other theories/constructs, Arguments and conclusions

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<td>1</td>
<td>Paul Timmers, Business Models for Electronic Markets, 1998</td>
<td>A systematic approach to identifying architectures for BMs can be based on <em>value chain de-construction and re-construction</em>, that is identifying value chain elements, and identifying possible ways of integrating information along the chain. The a priori feasibility of technical implementation of the architecture of any BM depends very much upon the state-of-the-art of the <em>technology</em>. This holds for the integration dimension, for the realisation of the single functions, and for the support for interaction patterns. The commercially viability of any BM is a different matter altogether which is the domain of a marketing model analysis. Different types of Electronic Markets are positioned in a matrix on the basis of <em>functional integration</em> (single function or multiple functions/integrated) and the <em>degree of innovation</em> (lower or higher).</td>
<td>A classification was provided of eleven BMs that are currently found in Internet electronic commerce. Some of these models are essentially an electronic re-implementation of traditional forms of doing business, such as e-shops. Many others go far beyond traditional business such as value chain integration and seek innovative ways to add value through information management and a rich functionality. Creating these new BMs is feasible only because of the openness and connectivity of the Internet.</td>
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<td>Gary Hamel, <em>Leading the revolution</em>, 2000</td>
<td>At the heart of this business-concept innovation is the capacity to construct wealth-generating strategies. For existing organizations, that means completely redesigning their BMs in order to create surprise, to thwart competitors and to supply the added value that investors are seeking. For newly created businesses, it is the only way to get a foothold against the enormous resources of their competitors, who have been on the markets for some considerable time. The end of the era of continuous progress has given way to an era of imagination and revolution. Radical innovation requires a complete and coherent BM to be constructed. &quot;Concept innovation&quot; is the capacity to create BMs which are very different, both from previous practices and from those of competitors.</td>
<td>In order to create a movement in favour of a project, the &quot;rebel&quot; executive must develop a manifesto in which he makes his point of view clear. He will take advantage of every discussion to give an airing to his ideas, with the objective of creating as wide a coalition as possible around his approach. The targets must be chosen and the opportunities appropriate. The person presenting the argument will keep a low profile, in order that his audience does not perceive him as a dangerous element. The innovator must find a translator, somebody who has direct access to the upper hierarchy, who finds the idea attractive and who will defend it before the management. Right from the outset, he must prepare a demonstration or a prototype, even if it is very rough, of the project. To escape from the control of the hierarchy and from political battles, the best idea remains to develop the project at some distance from the centres of decision. The incubation of the project must be as swift as possible, however, because the objective is to include the innovation in the company's current production.</td>
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<td>3</td>
<td>Jane Linder and Susan Cantrell, <em>Changing Business Models: Surveying the Landscape</em>, 2000</td>
<td>Change models: the BM typology shows BMs at a point in time. But most firms’ BMs are under constant pressure to change. Four basic types of change models used by the firms we studied:  - realization models (brand maintenance, product lines extensions, geographic expansion, penetration, incremental product or service line expansion in one-stop shop, additional sales or service channels, roll up);  - renewal models (new service offering, new brands, untouched markets, new retailing formats, disruptive new products or service platforms);  - extension models (backward integration, forward integration, horizontal integration, externalizing an internal capability);  - journey models (commoditization: from product to price, globalization, avoiding commoditization: from product to service to solution, up markets in products: from price to speed to agility, up markets in services: from price to brand or expertise).</td>
<td>- No sector of the business model landscape guarantees financial success. God is in the details.  - The most interesting new business models are created by combining features from two or more categories.  - Many so-called “eBusiness” models are improvements, not radical departures from traditional business models.  - Interlocking value propositions, which look promising for creating durable advantage, are easier to engineer over the Web. We identified four potential components of interlocking value propositions (vetted advertising, competitive ranking information, by-product community and trading opportunities). Understanding your company's operating and change models pays off. Clarifying them and sharing them throughout your firm will:  - Improve your organization's focus.  - Establish a framework for competing agilely.</td>
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| 4  | Jane Linder and Susan Cantrell, Carved in the water: Changing Business Models fluidly, 2000 | Firms that can’t change BMs more quickly and effectively will be left behind. The most fluid firms are practiced in a portfolio of alternative models, and the organization can switch among them and recombine them at will. What should leaders do to move in this direction?  
- Clarify existing BMs,  
- Build a diverse portfolio of models through practice,  
- Use simulation to supplement on-the-job experiences,  
- Set up planning and governance systems that encourage model flexibility,  
- Pursue customers, not competitors to play in industries without boundaries. | Executives find that BMs are not easily shared and they’re not easily changed except by hard-won experience.  
How do firms change models faster? First, they’re avoiding the big leaps in favor of a series of smaller, incremental moves that add up. Rather than undergoing large scale, onetime only change, companies should change their BMs in a more evolutionary manner by adding model units. Companies usually create such model units by leveraging an existing asset or capability to move into an adjacent market space. Secondly, executives are altering BMs by changing organizational structures. Under the assumption that each organization has one way of working, they manipulate BMs by moving organizational units.  
To change models, executives rearrange the organizational blocks and their interrelationships in one or more of seven different ways: plug and play, partner, infect, anchor and extend, cross-operate, converge, change charters. To change the model, leaders have to learn to shift mindsets not organizational structures. |
| 5  | B. Mahadevan, Business Models for Internet based E-commerce: an Anatomy, 2000       | Not mentioned.                                                                                                                  | The unprecedented growth in Internet based business in a short period of time has underscored the need for understanding the mechanisms and theorizing the BMs adopted by successful organizations. The process of arriving at an appropriate BM involves picking up the right mix of alternatives. The following factors have a bearing on the choice of the BM: assumed role in the market structure, physical attributes of the goods traded, personal involvement required in buying-selling process. |
| 6  | Jaap Gordijn, Hans Akkermans, and Hans Van Vliet, What’s in an Electronic Business Model?, 2000 | The e3-value ontology gives a baseline of shared concepts with which it is possible to construct e-business models. This baseline is also richer as it handles external value networks.  
At the IT level, this provides the basis for agent-based e-business system solutions. | The paper is premised on the observation that for the development of electronic commerce systems, e-BMs must be specified precisely. Such a clear-cut specification is important for two reasons: to reach agreement between stakeholders involved, and to be able to serve as a specification for designers of the commerce system. The e3-value ontology discussed specifies which generic concepts have to be present in an eBM. These concepts are based on the generic and reusable notion of value, and are capable of representing creation, exchange, valuation, and consumption of value objects in a network of actors.  
The ontology approach provides a foundation to express and discuss e-BMs for specific business cases in a rigorous and structured fashion. This enhances business-IT alignment and smoothens the transition to e-commerce systems engineering. |
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<td>8</td>
<td>Raphael Amit and Christoph Zott, <em>Value creation in e-business</em>, 2001</td>
<td>The notion of the BM draws on arguments that are central to the <em>value chain</em> framework, in particular on the ideas that processes and multiple sources of value matter. The BM perspective builds on the <em>RBV</em> of the firm. Clearly, the value embedded in the BM increases as the bundle of resources and capabilities it encompasses becomes more difficult to imitate, less transferable, less substitutable, more complementary, and more productive with use. The BM perspective therefore takes into consideration the ways in which resources can be valuable, and is consistent with the <em>VRIO</em> framework. The authors view BM as an extension of a <em>strategic network</em>. While the strategic alliance and joint venture perspectives suggest that these are usually strategic choices made as extensions to a firm’s core competencies, the BM perspective views inter firm cooperative arrangements as necessary elements to the firm’s ability to enable profitable transactions.</td>
<td>Sources of value creation: Novelty (new transaction structures, new transactional content and participants); Lock-in (switching costs, positive network externalities); Complementarities (between products and services for customers, between on-line and off-line assets, between technologies, between activities); Efficiency (search costs, selection range, symmetric information, simplicity, speed, scale economies).</td>
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| 9  | D. A. Papakirikopoulos, A.K. Poylumenakou and G.J. Doukidis, *Building e-Business Models: An Analytical Framework and Development Guidelines*, 2001 | Not mentioned. | The construction of an e-business model was found helpful because it highlighted several issues, corresponding to the four elements of our analysis framework:  
- Coordination: the effect of innovative ICT adoption eliminates the feedback chain using automated coordination mechanisms to resolve resource dependencies.  
- Customer value: increases as the sellers can use system capabilities to provide integrated services to their customers.  
- (Collective) Competition: tends to fall, allowing for the actors to gain the benefits of economies of scale  
- Core Competences: In the proposed business model, actors exploit their current competencies and have the opportunity to develop new ones. |
| 10 | Otto Petrovic, Christian Kittl and Ryan D. Teksten, *Developing Business Models for eBusiness*, 2001 | Relationship with system theory which posits that a company can be seen as a separate individual social system bounded by the environment conditional on open information exchange;  
- system dynamics that is a method to enhance learning in complex systems. | The prerequisites necessary in order to develop a BM are:  
- the methodology should be able to handle complex systems;  
- the methodology should support the structuring and sharing of knowledge. In order to be able to effectively change BMs, which are based on the mental models, in a team, learning has to occur in three stages (Mapping mental models, Challenging mental models, Improving mental models);  
- being able to predict the outcomes more accurately through the support of risk-free experiments;  
- creating a learning environment for managers to support the change of mental models;  
- supporting iterative expansion and change;  
- grounded on theory and practically applicable. |
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<td>12</td>
<td>Don Tapscott, <em>Rethinking Strategy in a Networked World</em>, 2001</td>
<td>These three core areas are ripe for BM innovation: unique products, sustainable operational efficiencies, stronger personal customer service and relationships.</td>
<td>Rather than viewing the Net as comparable to “scanning,” Professor Porter should see it as the new infrastructure of the 21st century. The years from 1997 to 2000 were the dog days of strategy. We saw egregious excesses and spectacular market capitalizations based on absurd or nonexistent BMs. Today there are great new possibilities for creating economic value, customer value, shareholder value, and community value. Business strategy is an idea whose time has come once again.</td>
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<td>17</td>
<td>Jaap Gordijn and Hans Akkermans, <em>Designing and Evaluating E-Business Models</em>, 2001</td>
<td>Not mentioned.</td>
<td>For the development of e-business information systems, three distinct perspectives are important: the value viewpoint represents the way economic value is created, exchanged, and consumed in a multi-actor network; the process viewpoint represents the value viewpoint in terms of business processes; and the system architecture viewpoint represents the information systems that enable and support e-business processes.</td>
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<td>18</td>
<td>Robert Tucker, <em>Strategy Innovation takes Imagination</em>, 2001</td>
<td>Relationship with <em>innovation</em>: strategy innovation can be incremental, involving minor changes to the firm's BM. Or it can be a radical departure, as when a firm decides to market its existing products and services to new customer groups. To be considered strategy innovations, initiatives that alter a firm's BM must first turn a consistent profit. Not all strategy innovation is based on technology, nor does it need to be. Viable BMs require imagination and passion in seeking to solve customers' problems in superior ways.</td>
<td>Six places to jumpstart the search for imaginative new BMs: 1) Look for Opportunities in Market Positioning; 2) Look for Opportunities in Customer Outsourcing; 3) Look for Opportunities in How Customer Needs Are Currently Understood; 4) Look for Opportunities to Reinvent Your Business Model; 5) Look for Opportunities to Redefine Value-Added; 6) Rethink How Your Product or Service Gets Into the Hands of Customers.</td>
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<td>19</td>
<td>Joan Magretta, <em>Why Business Models Matter</em>, 2002</td>
<td>Because a BM tells a good story, it can be used to get everyone in the organization aligned around the kind of value the company wants to create. Stories are easy to grasp and easy to remember. They help individuals to see their own job within the larger context of what the company is trying to do and to tailor their behaviour accordingly. Used in this way, a good BM can become a powerful tool for improving execution.</td>
<td>A successful BM represents better way than the existing alternatives. It may offer more value to a discrete group of customers, or it may completely replace the old way of doing things and become the standard for the next generation of entrepreneurs to beat. It creates new incremental demand. Profits are important not only for they own sake but also because they tell you whether your model is working. If you fail to achieve the results expected, you re-examine your model. Business modelling is the managerial equivalent of the scientific method, you start with a hypothesis which you then test in action and revise when necessary.</td>
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<td>20</td>
<td>Henry Chesbrough and Richard S. Rosenbloom, <em>The role of business model in capturing value from innovation: evidence from Xerox Corporation’s technology spin-off companies</em>, 2002</td>
<td>Not mentioned.</td>
<td>The paper offers an interpretation of the BM as a construct that mediates the value creation process. It translated between the technical and the economic domains, selecting the filtering technologies, and packaging them into particular configurations to be offered to a chosen target market. Heuristic logic is required to discover an appropriate BM, and an established firm is likely to preclude identification of models that differ substantially from the firm’s current BM. A start-up seems to be less constrained in the evaluation of alternative models. The initial BM is more of a proto-strategy, an initial hypothesis for how to deliver value to the customer, than it is a fully elaborated and defined plan of action. Identifying and executing a new or different BM is an entrepreneurial act, requiring insight into both the technology and the market.</td>
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<td>21</td>
<td>A. Osterwalder, <em>An e-Business Model Ontology for Modelling e-Business</em>, 2002</td>
<td>Not mentioned.</td>
<td>Reasons why academic research should be done in the area of BM and e-business models: - rare are the BM concepts and nonexistent a common understanding of what is meant by a BM; - it can be an adequate methodology and foundation for managerial tools and IS Requirements Engineering to react to the increasingly dynamic business environment.</td>
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<td>22</td>
<td>Jonas Hedman and Thomas Kalling, <em>The business model: a means to comprehend the management and business context of information and communication technology</em>, 2002</td>
<td>Relations with Industrial Organization, Process Perspective and Resource based view are analyzed and what results is that the BM is characterised by an integration of various theoretical perspectives such as I/O, RBV, Strategy Process, and ICT research, and addresses the interdependency between the components of the business context of ICT. All ICT can be viewed through the BM lens: they are resources, they affect, directly and indirectly, one or more activities, which in turn if well implemented, will improve the offering in terms of cost or quality, which will lead to higher profitability, higher economic value.</td>
<td>BM has to be managed and developed. The model can be studied in a cross-sectional dimension (the causal dimension, vertical in the outline of the model) but it also evolves over time (the longitudinal dimension, horizontal in the outline of the model) as managers and people from the inside, and as customers and competitors on the outside, continues to evolve. The economic logic of a CRM, ERP and SCM systems can be seen as the BMs.</td>
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<td>23</td>
<td>Yves Pigneur, <em>An Ontology for m-Business Models</em>, 2002</td>
<td>Not mentioned.</td>
<td>The future of m-business is very uncertain. Therefore it is recommended to adopt long-range strategic planning, scenario-based forecasting, and simulation approaches. Such approaches should be better supported and improved by conceptual modeling, ontology and other frameworks for defining and assessing business models.</td>
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<td>24</td>
<td>G.M. Mansfield and L.C.H. Fourie, <em>Strategy and business models – strange bedfellows? A case for convergence and its evolution into strategic architecture</em>, 2003</td>
<td>BM is characterised by innovation, functional integration and alliances, economic innovativeness and the ability to leverage value from its value chain. Relationships with configuration theory (Miller 1986), dynamic capability (Eisenhardt &amp; Martin 2000) and knowledge management (Skyrme 2000 &amp; 2001) are mentioned but not explained.</td>
<td>Internet business is evolving and firms are grappling with the new rules for competing successfully in the networked economy. Developing and implementing new or changed BMs requires entrepreneurial flair and careful management of risk. The leaders of such ventures develop BMs aimed at releasing latent value in technology but in the process become blinded to the fact that although the economic rules may be different, the basic ethos of business remains the same. This view may also have contributed towards the disregard for the value of strategy. Neither strategy nor business models, in isolation, indicate success for electronic businesses; both are required.</td>
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<td>25</td>
<td>Peter Seddon and Geoffrey Lewis, <em>Strategy and Business Models: What's the difference?</em>, 2003</td>
<td>Not mentioned.</td>
<td>BMs are like patterns in architecture and software engineering, successful solutions to some way in which firms create value, BMs come first. Combinations of BMs could be used for designing strategy: thinking in terms of combinations of BMs could enable strategists to mix and match various combinations of BMs to create new strategies for new and existing businesses.</td>
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<td>26</td>
<td>E. Faber, P. Ballon, H. Bouwman, T. Haaker, O. Rietkerk and M. Steen, <em>Designing business models for Mobile ICT services</em>, 2003</td>
<td>Relationship with ICT services.</td>
<td>Designing BMs is a complex undertaking because of the interrelatedness of the different blueprints. Different requirements (e.g. technical, user, organisational and financial requirements) need to be accommodated and balanced. Design choices in one domain may effect those of the other domains. Business developers also need to balance the interests of the involved actors. Key for understanding BM success is to investigate how changes in one design variable impact other design variables, and how market developments impact design choices.</td>
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<td>27</td>
<td>G. Camponovo and Y. Pigneur, <em>Business Model Analysis applied to Mobile Business</em>, 2003</td>
<td>Not mentioned.</td>
<td>Mobile business characteristics: mobility, network effects, exclusive control over important assets. At the centre of the Mobile business world is the user, who has the mobility-related needs. In order to fulfil these needs, we need three necessary and complementary blocks: communication (including the different networks that provide transmission capabilities), technology (composed by all the required hardware, including network equipment, Mobile devices and platforms), and the services (including applications, content and supporting services). These blocks are constrained by regulation and social context. Partnerships among actors are an important part of BMs. Different players require establishing partnership agreements with network operators and device manufacturers in order to support interoperability of the different solutions and ensure access to essential proprietary assets. The paper argue that BMs, that explicitly address mobility, network effects and natural monopolies issues and that are profitable to all the different players needed to provide an end-to-end solution, will be the most successful and sustainable.</td>
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- *technical* advancements open additional possibilities for collaboration with distribution and supply partners, for participation in virtual trading communities or dynamic virtual organizations, and for extending classic value chains to value networks.;  
- *individual*’s behavioural patterns in respect to technology acceptance and adoption;  
- *industrial* factors (like product characteristics, type of industry, suitable cooperation partners, competition..) affect an e-business model adoption;  
- *societal* factors affecting e-BM are Geographic, Cultural, Economic, Legal and Regulation, Ethical and Professional, Social Capital / Social Network, and Social Structure;  
- *organizational* impact is manifested in changes in the nature and structure of work at the intra- and inter-organizational levels, and creation of new types of communities. |
| 29 | L.W. Lam and L.J. Harrison-Walker, *Toward an objective-based typology of e-business models*, 2003 | Not mentioned. | The authors have classified a large number of existing e-business models and grouped them into fewer categories. This proposed typology not only clarifies the strategic objectives of the models, it also sheds some light on the formulation of an e-business strategy, or “e-strategy.”  
For start-ups and established firms, there are at least three different routes to establish a strategic Internet presence:  
- to take advantage of the Net and connect directly with customers and users;  
- to spot a structural hole in the Net and create a micro network that will connect isolated users or groups of people;  
- to use the Net as an additional media to build individual brands, promote certain products, and enhance competitive advantage. |
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<td>30</td>
<td>Donald Mitchell and Carol Coles, <em>The ultimate competitive advantage of continuing business model innovation</em>, 2003</td>
<td>Changing a single BM element in a way that substantially enhances a company’s ongoing performance versus the competition in sales, profit and cash flows is a BM improvement. While BM replacement entails improving at least four BM elements versus the competition. When the replacement provide product or service offerings to customers that were not previously available, it is called BM innovation. When a company pursues an ongoing process of developing and installing BM improvements, replacements and innovations, the process is called continuing BM innovation.</td>
<td>Ongoing BM innovation helps a company become more successful in two ways. First it can provide a path for prosperity because can overpower established advantages and size. Second, being opposed by competitors who are good in continuing BM innovation without upgrading one’s own BM is also a prescription for competitive disaster. Business process innovation faces two significant hurdles. First, optimizing one process can create or sustain inefficiencies and weaknesses in other activities or processes. Second, even with better processes, an obsolete BM is usually ineffective against a better one. In order to be a successful continuing BM innovator, a company must: establish an unchanging core vision for serving customers and other stakeholders that includes an expectations of regular BM changes; become more specialized and expert; adopt BMs that relate to irresistible forces in a flexible way; create processes for making innovations and improvements.</td>
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<td>32</td>
<td>E. van de Kar, C.F. Maitland, U.W. de Montalvo, and H. Bouwman, <em>Design guidelines for Mobile Information and Entertainment Services</em>, 2003</td>
<td>Not mentioned.</td>
<td>The case demonstrates that it is not possible to design a Mobile information and entertainment service without taking the value network of firms into consideration. The process of service design starts with the service formula, that guides the actors involved in the design and development of the service, as do the critical resources that attribute to the service concept under construction. Critical resources have to do with access issues: access to the necessary Mobile infrastructure, content, market segments and user communities, hard- and software platforms, etc. Providing access to these resources are all roles that have to be fulfilled by the involved actors cooperating in a value network.</td>
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<td>33</td>
<td>Alexander Osterwalder, <em>The Business Model Ontology. A proposition in a design science approach</em>, 2004</td>
<td>1) The business organization structure is about the material form the conceptual BM takes in the real world, such as departments, units and workflows. 2) The link between ICT and BM is particularly strong since ICT has been a strong enabler for a variety of innovative BM.</td>
<td>BM were perceived by executives and consultants as a tool to create a commonly understood language to improve communication and understanding of the fundamental questions of a business. A more rigid approach to BM is necessary in order to seize the possibilities detected with business practitioners. The rigorous ontological approach makes it possible to implement the BM concept into a computer-based tool by realizing the BM Modelling Language BM-L, an XML-based description language.</td>
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<td>34</td>
<td>George Yip, <em>Using strategy to change your business model</em>, 2004</td>
<td>Not mentioned.</td>
<td>BM and strategy are two different concepts that need to be distinguished by managers. Using one term – “strategy” – for both has served to create confusion for the last 40 years. It’s time to act upon the two terms and to think about them differently. BMs may shed important light on how we understand and practice strategy.</td>
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<td>35</td>
<td>Timber Haaker, Edward Faber, Harry Bouwman, <em>Balancing strategic interests and technological requirements for Mobile services</em>, 2004</td>
<td>When designing a BM one needs to take into account both customer value and network value. Creating customer value is not an easy task due to the difficulty of extracting user requirements and conflicting design requirements. Creating value for business actors (network value) is a complex task due to the conflicting strategic interests of partner organizations.</td>
<td>Critical design issues related to organizational domain (strategic interests): partner selection, network openness, network governance, and network complexity. Critical design issues related to technology domain (balancing requirements): security, quality of service, system integration, accessibility, management of users profiles.</td>
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- in a firm infrastructure model, corporate-accounting-system-oriented Mobile applications are dominant, supporting internal information flow and being aligned with the existing information systems,  
- a couple of promising business solutions such as Mobile commerce and personal information management are entering and enlarging the Mobile market,  
- the most prominent Mobile business application area is marketing and sales.  
A framework for measuring and analyzing a B2C BM is suggested.  
4 perspectives (user environment, interface, perception, information) are subdivided in effectiveness and measurement indices.  
The commerce model is the one most familiar to Mobile users and received a higher satisfaction level in all representative indices. However, overall B2C model satisfaction level is somewhat low, especially in the use environment and Mobile interface. |
| 37 | Scott M. Shafer, H. Jeff Smith and Jane C. Linder, *The power of business models*, 2005 | Not mentioned. | Four problems of BMs:  
- flawed assumptions underlying the core logic,  
- limitations in the strategic choices considered,  
- misunderstanding about value creation and value capture,  
- flawed assumptions about the value network.  
The probability of long-term success increases with the rigor and formality with which an organization tests its strategic options through BMs.  
BMs provide a powerful way for executives to analyze and communicate their strategic choices. Although there is some chance that firms with sloppily formulated BMs will succeed in the marketplace, the probability is low since the core logic for value creation and capture will not have been clearly thought through. |
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| 38 | James Richardson,  
*The Business Model: an Integrative Framework for Strategy Execution*, 2005 | Organizational design:  
- Nadler and Tushman (1997): process of designing organizational architecture which includes the work, the people, formal organizational arrangements and the informal organization. Design objectives: congruence of the architectural elements with each other and with the strategy.  
Strategy execution processes:  
- Kaplan and Norton (2000): strategy mapping framework based on their balanced scorecard that serves to clarify and communicate the links between the strategy and the objectives and metrics of the balanced scorecard.  
- Hrebiniak (2005): model of the strategy execution process with a comprehensive and detailed discussion about the content and process of each step, including formulating business strategy and short-term objectives, designing business structure and integration and employing incentives and controls. | The BM framework can be used in the strategy process to design or check on how the firm is executing its strategy, thus it serves to complete the description of the strategy. The three major components of the framework - the value proposition, the value creation and delivery system, and value capture - reflect the logic of strategic thinking about value. The paper presents the questions that the strategist has to consider in order to compare the business model framework with two prominent strategy execution frameworks (activity mapping and strategy mapping). |
| 39 | Alexander Osterwalder, Yves Pigneur and Christopher L. Tucci,  
*Clarifying business model: origins, present and future of the concept*, 2005 | BMs and Business Process Models;  
BMs and Enterprise Models;  
Relationship between BMs and time. | BM implementation and management include the "translation" of the BM as a plan into more concrete elements, such as a business structure (e.g. departments, units, human resources), business processes (e.g. workflows (responsibilities) and infrastructure and systems (e.g. buildings, ICT) [Brews and Tucci 2003]). Furthermore, the implementation of the BM must be financed through internal or external funding. The authors understand the BM as a building plan that allows designing and realizing the business structure and systems that constitute the operational and physical form the company will take. |
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<td>40</td>
<td>H. Tikkanen, J. Lamberg, P. Parvinen and J. Kallunki, <em>Managerial cognition, action and the business model of the firm</em>, 2005</td>
<td>The evolution of a BM is built on <em>managerial actions and cognitions</em> that focus on certain aspects of the BM. Cognitions are conceptual and operational representations that humans develop while interacting with complex systems. Cognitions act as a filter between the actors’ understanding of the inter-organizational environments and the intra-organizational context.</td>
<td>The main finding was that a BM is essentially both a cognitive phenomenon as well as being built on the material aspects of a firm. Benefits for practitioners: - Through BM framework, practitioners can investigate the evolution of their BMs. - BM framework is systemic. - BM is a cognitive mechanism. - BM framework has proven to be a useful tool in business education.</td>
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<td>41</td>
<td>Glen Martin Mansfield, <em>A strategic architecture and its role in enhancing the performance of commercial web-enabled enterprises</em>, 2005</td>
<td>Relationships with the resource based view (RBV) and the concept of innovation.</td>
<td>The result of the study is a strategic architecture, that is a complex construct derived to measure the competitive behaviour of a firm participating in the networked economy. It has relationships with: - BMs that give rise to the concept of value, - strategy that provides the strategic intent, - harmony, knowledge management and dynamic pliancy that provide the other bases.</td>
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<td>42</td>
<td>B. Kijl, H. Bouwman, T. Haaker and E. Faber, <em>Developing a dynamic business model framework for emerging Mobile service</em>, 2005</td>
<td>Not mentioned.</td>
<td>Mobile services: value networks of emerging Mobile services are more dynamic and complex than the old, rather static telecom centric value chains for Mobile services like voice communication. It is expected that more and more flexible value networks will arise and replace the current. By having a value network view, organizations are better able to recognize structural changes like this shift from traditional competition to complex networks of organizations. In Mobile service, one or more leading actors can be identified (especially Mobile Telecommunications operators): they are the most powerful and define where the centre of gravity and power of these value networks are. They also have a profound influence on BM redesign.</td>
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<td>43</td>
<td>Michael Morris, Minet Schindehutte and Jeffrey Allen, <em>The entrepreneur’s business model: toward a unified perspective</em>, 2005</td>
<td>A process of <em>experimentation</em> may be involved as the model emerges. In terms of the proposed framework, a firm’s model might be expected to evolve from the foundation level toward a more complete articulation of the proprietary and rules levels. Conceptually, it is possible to envision a BM life cycle involving periods of specification, refinement, adaptation, revision, and reformulation. An initial period during which the model is fairly informal or implicit is followed by a process of trial and error, and a number of core decisions are made that delimit the directions in which the firm can evolve. At some point, a fairly definitive, formal model is in place. Subsequently, adjustments are made and ongoing experiments are undertaken.</td>
<td>BM sustainability requires that model components demonstrate consistency = both internal and external “fit,” where the former is concerned with a coherent configuration of key activities within the firm and the latter addresses the appropriateness of the configuration given external environmental conditions. Internal fit includes consistency and reinforcement within and between the six subcomponents of the model. At the <em>foundation level</em>, the model is defined in terms of a standardized set of decisions that can be quantified. At the <em>proprietary level</em>, considerable scope for innovation exists within each model component. The model becomes a form of intellectual property, with some entrepreneurs actually obtaining patents for their models. <em>Rules</em> provide a clearer sense of the firm’s value proposition and are a source of guidance regarding actions that might compromise the value equation. One challenge concerns the translation of model components into operational decisions, where the importance of fit will likely differ by activity area.</td>
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<td>44</td>
<td>L. Lehmann-Ortega and J.-M. Schoettl, <em>From buzzword to managerial tool: the role of business models in strategic innovation</em>, 2005</td>
<td>Strategic innovation could be defined as a challenge to the prevailing economic model. It is a radically different strategy which changes the rules of the game by designing a new BM that makes a major change in the value for the customer and/or the value chain, thereby eventually outpacing the competition. The major change can stress one, two or all the components. The BM can be perceived as a useful instrument for developing a strategic innovation.</td>
<td>Three educational focuses: - teaching the concept of BM; - learning how to overcome prevailing mental models; - raising awareness of the need to combine intuition and creativity with analytical strictness.</td>
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| 46 | C. Kim, C. Choi, and Y. Park,  
*A Taxonomy of Business Models on Mobile Business: BM Patent Analysis*, 2005 | Not mentioned. | The classification proposed is somewhat different from classifications of literatures on BM classification which tried to cover all possible BMs relied on the intuition of researchers. Especially the results are derived from the sample data of BM patents that are applied from the commercial field. The result of this research could be used as a basic framework or starting point of the quantitative analysis of BMs. |
| 47 | Maitland et al.,  
*Mobile information and entertainment services: business models and service networks*, 2005 | Not mentioned. | Findings:  
- Of the two BM components, revenue model and membership benefits, the revenue model has a more easily understood relationship with governance.  
- While revenue sharing arrangements between network operators and content providers or intermediaries may be uniform, these arrangements become more varied as they move away from the end-user. A similar pattern can be seen in governance mechanisms. |
| 48 | Raphael Amit and Christoph Zott,  
*Business Model Design and the Performance of Entrepreneurial Firms*, 2006 | Novelty-centred BM design and performance → relation between BM and *innovation*;  
efficiency-centred BM design and performance → relation between BM and *imitation*.  
Interaction between novelty- and efficiency-centred BM design and performance. | BM is a useful unit of analysis for research on boundary-spanning organization design, as well as a locus of innovation that has hitherto been largely overlooked by entrepreneurship research. It can potentially help advance the emerging body of research on new organizational forms.  
Organizational design should extend beyond internal design to include a focus on the architecture of the transactions that a focal firm engineers with its partners, suppliers, and customers.  
The paper developed a theory of BM design that explains how value is created at the BM level of analysis and how it is captured at the focal firm level of analysis.  
To remedy the lack of methodology for conceptualizing and measuring BM design with a degree of granularity, the paper proposes a way to think about and measure BM design themes that are particularly relevant to the study of new organizational forms, innovation, and entrepreneurship. |
| 49 | Richard Lai, Peter Weill and Thomas Malone,  
*Do Business Models matter?*, 2006 | Not mentioned. | BM effects are larger than year effects and dominate industry effects when industry is measured at the comparative level.  
Future study: what could be an important element of strategy and organizational performance? |
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<td>50</td>
<td>Peter Keen and Sajda Quareshi, <em>Organizational Transformation through Business Models: a Framework for Business Model Design</em>, 2006</td>
<td>A BM may be thought of as a story that helps build and motivate an organization. In this context, it is noteworthy that many of the radical innovations in business are associated with well-known stories. Global Capabilities Sourcing GCS framework reframes “outsourcing” as a more general BM issue: 1- Specialist services: premium skills at a low cost burden. 2 - Assembly economy: low cost workers handle commodity tasks. 3- Outsourcing crisis creator: high labor cost burdens for commodity skills applied to commodity tasks. 4- Creative economy: premium skills at high labour cost burden.</td>
<td>The experiences of e-commerce seem to point to a conclusion: a company within an industry needs a strategy; a company aiming at becoming a new entrant, bridge industries, or create a new market space needs a BM first. A company within an industry that sees a major need or opportunity to transform itself will need to articulate those changes through a BM. That model in all these instances must provide a convincing logic of value-creation. BMs are generally a feature of startups, for the simple reason that they need a convincing logic and narrative. Transformation of organizational structures is the missing link through which BMs may make a real contribution.</td>
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<td>51</td>
<td>Susan Lambert, <em>Do We Need a “Real” Taxonomy of e-Business Models</em>, 2006</td>
<td>Not mentioned.</td>
<td>To advance from concepts to theory, it is necessary to order or classify the objects within the research domain. Recognition of similarities and differences between BMs and the development of classes of BMs are fundamental to BM research. Typologies and taxonomies are different concepts: - typologies are a product of deductive research; - taxonomies are derived empirically. A BM taxonomy shows the static relationships between objects.</td>
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<td>52</td>
<td>Saku Makinen and Marko Seppanen, <em>Strategic Management of Exploiting Technological Opportunities: Integrating Strategy to Operations with Business Model Concept</em>, 2006</td>
<td>Relationships with resources and dynamic capabilities exist but are not further explored.</td>
<td>Business model conceptualizations have their starting point in many cases to aid in implementation of strategies and linking strategy with tactical and operational level activities. This, however, cannot be fulfilled unless firm’s resources and their configuration are included explicitly in the definitions of business model concepts. Future research should address the problems of dynamic capabilities integrating BM to strategy and similarly integrating BM to resources.</td>
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<td>53</td>
<td>Pieter Ballon and Michael Van Bossuyt, <em>Comparing business models for multimedia content distribution platforms</em>, 2006</td>
<td>Not mentioned.</td>
<td>From the Mobile operator point of view, the objective of a multimedia content distribution platform should be in the first instance to reduce technical complexity while making possible new services, and only in the second instance to control costs and to enable fundamentally new BMs. For content providers a uniform content and applications plug-in interface is of most direct importance. A modular, evolving approach to content distribution platform deployment seems to be most suitable.</td>
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<td>54</td>
<td>Henry Chesbrough, <em>Business Model innovation: it’s not just about technology anymore</em>, 2007</td>
<td>- <em>Value Chain</em> (Internal structuring of activities); - <em>Value Network</em> (Strategic network of relationships); - <em>Competitive strategy</em> (BM is the basis for competitive advantage). Relationship with the concept of <em>Innovation</em> and <em>Technology/R&amp;D</em>.</td>
<td>Many organizations have a “BM innovation leadership gap”: no one person in the organization gap has the authority and the capability to innovate the BM; BM innovation clearly requires involvement of the top leadership. It takes a lot of time to develop BM experiments, obtain clear results, interpret and understand the results, and then carry out a broad deployment of those results. Top managers of the organization reached their level of responsibility by executing within the current BM. So that model is familiar and reassuring to them. An organization must give a senior manager the resources and authority to define and launch BM experiments. Companies also need ways to protect their BM experiments internally.</td>
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<td>55</td>
<td>Pieter Ballon, <em>Business modelling revised: the configuration of control and value</em>, 2007</td>
<td>In general, only the main BM design choice, related to value creation and capture, and/or to control, is identified, and is grounded within current thinking in strategic management, innovation management, industrial organisation, resource-based theory, and network economics.</td>
<td>It’s the alignment of control and value parameters that is of most relevance to business modelling. The paper has conceptualised BM design as the reconfiguration of control and value, and has proposed an analytical framework for making explicit the scope for choice when designing a BM for ICT services, products and systems. It has taken into account recent directions in BM research and practice.</td>
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<td>56</td>
<td>Bruce Rasmussen, <em>Business Models and the Theory of the Firm</em>, 2007</td>
<td>The role of the BM is to position the firm in the <em>value network</em> in such a way that the firm can capture value from its <em>innovation</em>. The development of the business model is not static but a dynamic process subject to change through <em>learning and adaptation</em>.</td>
<td>Chesbrough and Rosenbloom’s six functions offer a framework that can be enriched by integrating the theories of the firm. From this framework a set of hypotheses about value creation and its capture by the networked firm can be developed and tested.</td>
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<td>57</td>
<td>Ramon Casadesus-Masanell and Joan E. Ricart, <em>Competing through business models</em>, 2007</td>
<td>BM evaluation: what constitutes a good BM? Considering BMs in <em>isolation</em> to other player, there are four desirable features that result in BM <em>effectiveness</em>: alignment to goal; BM choices delivering consequences that move the organization towards achieving its objectives; reinforcement: choices complementing each others well; virtuousness: presence of virtuous cycles; robustness: ability of BM to sustain its effectiveness over time. Considering BMs in <em>interaction</em> with other players, the evaluation is much more complex.</td>
<td>BMs dynamics often generate feedback loops that can be virtuous (they strengthen some components of the model at every iteration) or vicious cycles. A desirable feature of BMs is the generation of virtuous cycles that move the organization towards its goals. BM of two companies are interdependent when the choices of one company affect the working of the other’s BM. How to reduce BM interdependence? Modifying the BM so that the organization moves to spaces where there are fewer points of contact between BMs; adding elements in the BM that help other players thrive so that no one has a large effect on the score of the focal company; keeping capacity low in commodity industries; growing the market or increasing product differentiation.</td>
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<td>58</td>
<td>Saku Makinen and Marko Seppanen, <em>Assessing business model concepts with taxonomical research criteria – A preliminary study</em>, 2007</td>
<td>Not mentioned.</td>
<td>The search for unified definitional grounds has inevitably resulted in confusion, which should not be viewed as a weakness, but rather as an indication that the field has advanced in its scientific inquiry. The field also shows indications of convergence in the basic definitions and functions of its core concepts. Therefore, the field of inquiry has proceeded to a phase in which the BM has become the intermediate unit of analysis in managing technological ventures arising from R&amp;D that has been called for, albeit leaving many questions unresolved. There is a dominance of descriptive conceptualizations of the BM.</td>
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<td>59</td>
<td>Thierry Verstraete and Estèle Jouison, <em>Three theories to frame the concept of business model in context of firm foundation</em>, 2007</td>
<td>BM is a combination of <em>stakeholder theory</em> ST, <em>convention theory</em> CT and <em>resource-based view</em> RBV: communication of the BM as a convention adapting the discourse to the various stakeholders; the resources are obtained from the one who hold them and that have to be convinced of the BM value (generic and specific value of exchange); the BM is a convention that optimizes the organizational configuration, i.e. the arrangement of the resources to make them competencies.</td>
<td>Further research: BM and the concept of entrepreneurial team (Translation Theory makes it possible to better understand the communication of the BM and can help the entrepreneurs to persuade); understanding the interest of the BM in singular entrepreneurial contexts, as the artisan company or the firm with fast and early internationalization; possibility of using cognitive cartography to help the entrepreneur to represent his BM; BM is an object making it possible to link the field of entrepreneurship to that of strategy.</td>
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<td>60</td>
<td>L.B. Methlie and P.E. Pedersen, <em>Business model choices for value creation of Mobile services</em>, 2007</td>
<td>Not mentioned.</td>
<td>Findings:</td>
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<td>- it is possible to categorize Mobile data services according to the importance of direct network effects, indirect network effects and intrinsic attributes in creating customer value.</td>
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<td>- the BM options suggested seem to explain only a minor part of the variation in service attributes.</td>
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<td>- Mobile specificity is by far the BM option with the greatest effect on service attributes.</td>
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<td>- governance form does not seem to consistently influence extrinsic attributes, but mainly has an effect on intrinsic attributes, in particular on service usefulness and quality.</td>
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<td>- the relationships between BM options and service attributes seem to be moderated by service category, suggesting that optimal BM choices may vary across service categories.</td>
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<td>61</td>
<td>C.H. Leung, <em>Evolution of the Business Model</em>, 2007</td>
<td>The work extends the BM design methods and tools research stream by proposing a higher abstraction level <em>modelling technique</em> to map the evolution of the BM, the BM chains, and BM networks. By integrating both <em>open innovation</em> and BM theory in the modelling technique, it is possible to visualize the embryonic evolution of the BM. The modelling technique shows that successful BMs will evolve over time after launch and are not static phenomenon’s after creation.</td>
<td>Due to shifting customer needs, markets, and competitive threats (Linder &amp; Cantrell, 2000), firms must constantly tweak their current BM and find new BMs in order to survive and grow (Tucker, 2001). BMs evolve over time in the way corporate strategists have designed it (changing number of technologies, BMs, and markets).</td>
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<td>62</td>
<td>Mutaz Al-Debei and Davison Avison, <em>Business Model Requirements and Challenges in the Mobile Telecommunications Sector</em>, 2008</td>
<td>Not mentioned.</td>
<td>Many external factors affect the digital BM of Mobile network operators. (1) Market Competitive Factors; (2) Financial Factors; (3) Cellular and Disruptive Technologies Factors; (4) Regulatory Factors; (5) Social and Cultural Factors;  Key characteristics of a BM: explicit, dynamic and open.  <em>Explicit</em> BM facilitate knowledge sharing and dissemination, and support operators analyzing and evaluating the feasibility of their BM in action.  BM need to be <em>flexible</em> in this turbulent and highly competitive industry.  <em>Open</em> BM allow ideas to come from any stakeholder and enrich the value network, enabling innovation that is required for value creation.  MNO’s crucial quality of service (QoS) parameters are: transmission speed of services, availability, usability, precision, coverage and reliability, security and privacy.  Optimizing BM of MNOs requires a holistic configuration of its interrelated dimensions and harmonization with operator strategy and its ICT-enabled business processes, in addition to alignment with the external environment concerns in general, and more specifically with industry forces.</td>
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<td>T.S. Hsu, Chuang, Yang and C.J. Hsu, <em>Study on Business Models For Electronic Commerce</em>, 2008</td>
<td>WEB 2.0 has already changed the business shape on the Internet. Providing interactive interfaces has become a main way to attract users to visit and stay on a commercial website. More and more websites are not only content providers but also content receivers. Users also play the role of content providers and earn money via posting information on the Internet.</td>
<td>New classification of e-commerce BMs:  - Supplier-oriented: Makes money via selling goods, services, and information on the Internet. Models: content provider, e-tailer, manufacturing.  - User-oriented: Makes money via spontaneous consumers’ interactions on the Internet. Models: community, user creating.  - Supporter oriented: Makes money via supporting the transactions on the Internet smoothly. Models: affiliate, brokerage, trust intermediary.  Most adopted model is affiliate followed by community and user creating.</td>
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- BM to capture value from technological innovation: profiting from innovation; “Public” goods and the bundling and unbundling of inventions and products; BMs as innovation.  
- The role of discovery, learning and adaptation. | Businesses need to be more customer-centric and to re-evaluate the value propositions they present in order to consider also how to capture value from providing new products and services.  
The different elements that need to be determined in a BM design are:  
- select technologies and features to be embedded in the product/service;  
- determine benefit to the customer from consuming/using the product/service;  
- identify market segments to be targeted;  
- confirm available revenue streams;  
- design mechanisms to capture value.  
To profit from innovation, business pioneers need to excel also at BM design, understanding business design options as well as customer needs and technological trajectories. A differentiated and hard to imitate BM is more likely to yield profits. |
| 65 | R. Casadesus-Masanell, J. Enric Ricart, *From Strategy to Business Models and to Tactics*, 2009 | BMs often generate virtuous cycles = feedback loops that strengthen some components of the model in every iteration.  
As the cycle spin, rigid consequences become larger. If those rigid consequences are valuable, virtuous cycles develop valuable *resources and capabilities*.  
Interconnection between elements in a BM is central (Lecocq, Demil, and Warnier):  
*RCOV Model* = dynamic view of a BM focused on value creation/capture  
- RC, resources and competencies;  
- O, internal and external *organization*;  
- V, value propositions | Strategy and BM, though related, are different concepts. A BM is the direct result of strategy but it is not strategy itself.  
Tactical interaction has well-defined rules of play because BMs constrain the tactical sets and game theory can be easily applied to predict competitive dynamics and outcomes. Strategic interaction is more complex:  
- the rules of the game are not well-defined;  
- the mapping between strategic choices and payoffs are much more complicated than in the case of tactics because for every modification in the BM, the designer needs to assess the effects that it will have on tactics;  
- it is usually hard to predict how a rival will react to a particular set of strategic moves. |
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| 66 | C. Zott and R. Amit, *Designing your future Business Model: an activity system perspective*, 2009 | *Strategic networks* are eventually networks of BMs. Each network member firm’s BM’s aim is to exploit strategic opportunities for value creation, and such opportunities are influenced and co-defined by other actors involved in the overall activity system. This study hence proposes to shift the focus on BMs from the single firm to the whole network of firms co-operating within the value-creating process of activities.  
*Activity system: key to understanding the firm’s BM*  
Activity system is a set of interdependent organizational activities centred on a focal firm, and encompasses activities that are either conducted by the focal firm or by partners, customers, or vendors. Interdependencies are central, they provide insights into the processes that enable the evolution of the focal firm’s activity system over time. They are created by managers who shape and design organizational activities and the links that weave activities together into a system. | Advantages:  
- A focus on activities is a natural perspective for entrepreneurs and managers who must decide on BM design.  
- The activity system perspective encourages systemic and holistic thinking when designing the BM of the future, instead of concentrating on isolated, individual choices.  
- A focus on activities allows to relax several assumptions made in the transaction cost economics literature. Focusing on activities allows to shift the focus to a focal firm that must make a decision about its BM design, of the two parties involved in a bilateral exchange, in practice only one has to make a decision about its BM, the focal firm. |
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| 67 | M. Johnson, C. Christensen and K. Henning, *Reinventing your Business Model*, 2009 | The BM construct proposed is built on and brings together elements coming from different research fields:  - Resource and competence view: Organizational design (e.g. human resources); ICT (e.g. equipment, technology, information, channel; etc.); Network of alliances; Intangible assets (brand)  - Business process design  - Finance (profit formula)  The paper also provides a list of traditional rules, norms, and metrics to leverage when assessing a BM’s validity, thus linking the concept to financial, operational, and other indicators. | When a new BM is needed?
5 strategic circumstances:  - the opportunity to address through disruptive innovation the needs of large group of potential customers who are shut out of the market entirely because existing solutions are too expensive or complicated for them.  - the opportunity to capitalize on a brand-new technology for wrapping a new BM around it or the opportunity to leverage a tested technology by bringing it to a whole new market.  - the opportunity to bring a job-to-be-done focus where one does not yet exist. A job focus allows companies to redefine industry profitability (ex fulfilling an unmet customer need).  - the need to fend off low-end disrupters.  - the need to respond to a shifting basis of competition.  We recommend companies with new BM be patient for growth to allow market opportunity to unfold, and impatient for profit as an early validation that the model works. |
<p>| 68 | M. Johnson and C. Christensen, <em>What are Business Models, and how are they built?</em>, 2009 | <strong>BM and disruptive innovation:</strong> Negligence or failure in BM innovation is the primary reason why leading incumbent firms in most industries typically fail when confronted by disruptive attackers. 3 enabling elements to each disruption: - technological innovation; - disruptive BM; - new value network.  Two types of BM innovation: - new-market disruptions; - low-end disruption. | Types of BM: (1) Solution Shops: Institutions whose resources and processes are structured to diagnose and recommend solutions for complicated problems. (2) Value-Adding Process Businesses: BMs typically bring things in that are incomplete or broken, add value to them, and then ship them out, repaired or more complete. (3) Facilitated Networks: Institutions in which the same people buy and sell, and deliver and receive things from each other.  <strong>Disruption within and across BM types:</strong> When an enabling technology makes it so much more affordable and simple for a new population of people to own and use a product, the disruption occurs within a type of BM. When an enabling technology makes it affordable and simple for a new population of people to produce or provide a product or service, then the disruption shifts the industry across the category boundary, to a different type of BM. |</p>
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<td>Frank Goethals, <em>The unified business model framework</em>, 2009</td>
<td>Not mentioned.</td>
<td>Despite the number of frameworks suggested so far, to this date no appropriate framework existed that enables the analysis, sharing, managing, prospecting and patenting of BMs and the specification of information systems requirements from BMs. This paper shows that to enable that functionality, a BM framework should be comprehensive and detailed. Companies can be innovative on one or more elements of BM framework diverse models. It is, however, important that they bring all elements in lign.</td>
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<td>70</td>
<td>Z. Lindgardt et al., <em>Business model innovation – When the Game Gets Tough, Change the Game</em>, 2009</td>
<td><em>Innovation</em> becomes BMI when two or more elements of a BM are reinvented to deliver value in a new way. Because it involves a multidimensional and orchestrated set of activities, BMI is both challenging to execute and difficult to imitate. Game-Changing moves: beating back intense competition, extending a BM with current customers, extracting brand value by extending the BM. Distinguishing BMI from product, service or technology innovations is important.</td>
<td>BMI can be most powerful when it is approached proactively to explore new avenues of growth. What can go wrong? Portfolio bloat, failure to scale up, pet ideas, isolated efforts, fixation on ideation, internal focus, historical bias. Key activities when striving for BMI: - uncovering opportunities (e.g. innovations to the value proposition, to the operating model and to the business system architecture), - implementing the new model, - building the platform and skills.</td>
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<td>71</td>
<td>F. Günzel and H. Wilker, <em>Patterns in Business Models: a Case Survey</em>, 2009</td>
<td>BM lifecycle: the development process from business idea to established business can be divided in three phases: opportunity recognition phase, the venture creation phase, and the market phase consisting of the sub phases market offering, maturity, and decline.</td>
<td>To structure the information gained from the case studies and project reports the Business Model Dynamics Framework (BMDF) is used. Analyzing the case study data we first looked at the reference BM in the venture creation phase. We use the following sequence for each reference BM: actor identification, defining relationships, quantification. Analysis shows a number of patterns common to the analyzed venture projects. These refer to several parameters – complexity, level of change and growth paths and appear in two forms: <em>patterns of development and patterns of structure</em>.</td>
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<td>72</td>
<td>Thierry Verstraete and Estèle Jouison-Laffitte, <em>The business model, a relevant concept in entrepreneurship training</em>, 2009</td>
<td>The practical use of the GRD model appears in two ways: in entrepreneurship pedagogy and in the guidance of company founders.</td>
<td>The BM answered the resources holders’ search of intelligibility of the type of business in which they set up themselves. Initially, the revenue model was claimed because, in particular on Internet, financers did not understand how it was possible to earn money. But the participation in entrepreneurial projects showed that the BM was not reduced to the revenue model because the interrogations to understand the project implied an explanation of the reasons encouraging the partners to adhere to it. Finally, the BM was at the core of a whole of relations of exchanges which it had sometimes to be created long before a business plan (BP) is finalized. So entrepreneurial process is represented from the idea to the business plan, passing through the Opportunity, the BM and the Strategic vision.</td>
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<tr>
<td>73</td>
<td>M. de Reuver, H. Bouwman and T. Haaker, <em>Mobile business models: organizational and financial issues that matter</em>, 2009</td>
<td>Not mentioned.</td>
<td>Design issues in the organizational domain: partner selection, network openness, orchestration of activities, and managing relationships with partners. Design issues in the financial domain: balance between costs, revenues, risks and pricing. Findings: organizational design issues affect acceptable role division; however financial design issues do not affect acceptable profitability directly but there is an indirect effect mediated by acceptable risks. Financial design issues directly affect acceptable risks. There is evidence to suggest that success factors are related, as acceptable role division leads to acceptable risks, which in turn affects acceptable profitability.</td>
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<tr>
<td>74</td>
<td>Antonio Ghezzi, <em>Emerging business models and strategies for Mobile middleware technology providers: a reference framework</em>, 2009</td>
<td>Not mentioned.</td>
<td>Three main emerging BMs for MTTP are identified: - “Pure play”, determined by a “Stay on core” strategic pattern; - “Full asset”, determined by a “Grow, wait and see” strategic pattern; - “Platform &amp; Content Management”, determined by an “Aggressive downstream” strategic pattern. The research represents a significant step towards the development of business modelling theory with reference to Mobile Middleware Technology Providers.</td>
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<td>75</td>
<td>Hiroyuki Itami and Kazumi Nishino, <em>Killing Two Birds with One Stone – Profit for Now and Learning for the Future</em>, 2010</td>
<td>Each firm should decide its boundaries taking into account what it can do better than other firms, i.e. its core competence or core invisible assets. The boundary of the firm, what it does inside its boundary, and how it relates to other firms outside its boundary - these three things together determine the identity of the firm, and are at the core of its business system design.</td>
<td>The profit model is very important, since it is the model that provides the firm with money, at least in the short term. But this has led its importance to be over-emphasized – the firm as a going concern has to aim for future growth potential, too, and so managers need to look for both profit opportunities for the short-term and learning potential for the long-term. In discussing the BMs for the future, aiming for two birds with one stone seems to be a must.</td>
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<td>76</td>
<td>Wendy K. Smith, Andy Binns and Michael L. Tushman, <em>Complex Business Models: Managing Strategic Paradoxes Simultaneously</em>, 2010</td>
<td>Not mentioned.</td>
<td>Traditionally, managers ask, ‘Should we implement A or B?’. Paradoxical strategies change this focus to: ‘How can we implement both A and B?’: this shift enables new BMs to emerge. Successful leaders in this context demonstrate both cognitive complexity - the ability to seek integration across seemingly contradictory tensions - as well as behavioural complexity - the ability to engage multiple leadership behaviours that may seem in conflict with one another.</td>
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<td>77</td>
<td>Yves L. Doz and Mikko Kosonen, <em>Embedding Strategic Agility: a Leadership Agenda for Accelerating Business Model Renewal</em>, 2010</td>
<td>Relationship with organizational leadership: the paper provides “The Leadership Action Agenda”.</td>
<td>Transforming the BM of a successful company is never easy as inertia, from many sources, defends the status quo. The article sets out practical, actionable steps that a CEO and a corporate leadership team can take to foster a more purposive - and more strategic – evolution and adaptation of BMs, making successful BM transformation more likely. Strategic agility is a keystone to having the ability to transform and renew BMs.</td>
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- descriptions of ‘kinds’ in a taxonomy.  
- model organisms for investigation.  
- recipes. | The developing analysis of BMs itself has prompted the expansion of taxonomies and typologies in ways which throw new light on the nature and role of BMs themselves.  
BMs also function as models in the scientific sense. They can be investigated as model organisms (as in biology) that stand in as representatives for a class of things. They function as laboratories that enable the scholar both to generate concepts and theories and to investigate empirical domains. The authors have explored the analogy of models as recipes to understand the role of variation and innovation within the constraints of ingredients and purposes, and their use by managers to motivate strategy changes, and to experiment with their organisations. |
| 79 | Henry Chesbrough, *Business Model innovation: Opportunities and Barriers*, 2010 | Relationships with: *experimentation, effectuation and organizational leadership*. | BM innovation is vitally important, and yet very difficult to achieve.  
Companies must adopt an effectual attitude toward BM experimentation. With discovery driven planning, companies can model the uncertainties, and update their financial projections as their experiments create new data. Effectuation creates actions based on the initial results of experiments, generating new data which may point towards previously latent opportunity. Organizations will need to identify internal leaders for BM change. |
The goal of a discovery-driven plan is therefore to learn as much as possible at the lowest possible cost, bringing us back to the theme of experimentation.  
One advantage is that one can experiment with BMs conceptually before any investment is required.  
Barriers: internal systems have no incentive to embrace a discovery driven approach. Giving staff the license to plan is a difficult assignment for many established companies, comfortable with the idea that good plans are ones that work out as expected. |
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<th>Author, Title, Year</th>
<th>Relationship between Business Model and other theories/constructs</th>
<th>Arguments and conclusions</th>
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<tr>
<td>81</td>
<td>Benoît Demil and Xavier Lecocq, <em>Business Model Evolution: In Search of Dynamic Consistency</em>, 2010</td>
<td><em>Dynamic consistency</em> is the capability to balance the trade-off between a BM’s consistency (and thus its performance) against the reality that (in most industries) it will be changing all the time, by continuously influencing and countering the dynamic movements inherent in the BM’s sequences, trends and drift with deliberate actions designed to keep it consistently balanced and aligned. Competence of managers to maintain or improve its performance. Three tasks: - monitoring the risks and uncertainties; - anticipating the potential consequences of both environmental and internal changes; - implementing deliberate actions to promote consistency between their BM components.</td>
<td>The observable sign of BM evolution is a substantial change in the structure of its costs and/or revenues - from using a new kind of resource, developing a new source of revenues, reengineering an organizational process, externalising a value chain activity - whether triggers deliberately or environmentally. Theoretically, changes in a firm’s BM may lead to an increase or a decrease in its performance in terms of margin which may constitute signals about its sustainability. However, poor BM performance may be only transitory and independent of the suitability of the BM design that is eventually envisaged. ‘Voluntary’ changes to the BM are the result of one or a set of decisions related to one or several core component, the emerging changes are unintended and partly beyond managers’ control. Such evolutions may come from the environment, but also from the unanticipated effects of voluntary decisions, or from the dynamics of the operation of the BM itself. Disequilibrium is a permanent characteristics of firm’s BM and changes in a BM will periodically produce new opportunities and threats.</td>
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<tr>
<td>82</td>
<td>A. Ghezzi, R. Balocco, and A. Rangone, <em>How to Get Strategic Planning and Business Model Design Wrong: The Case of a Mobile Technology Provider</em>, 2010</td>
<td>Not mentioned.</td>
<td>Ten mistakes to avoid at a strategic planning and BM design level: - stating the strategic objectives unclearly, and failing to translate corporate-level priorities into business-level goals; - misinterpreting the deliberate vs. emergent strategic planning dualism; - unbalancing the internal and external strategic analysis; - leaving the value system configuration unmapped; - underestimating the impact of exogenous factors, like market turbulence; - failing to assess the endowment of internal resources and link them to critical success factors; - missing the link between strategic planning, strategy analysis, and BM; - adopting a full technology-driven approach; - leaving the business value proposition unstated; - shaping the business modeling mix inconsistently.</td>
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PART 5

The Mobile Market and Business Models: a design reference framework for Mobile Middleware Technology Providers
2.5 THE MOBILE MARKET AND BUSINESS MODELS: A DESIGN REFERENCE FRAMEWORK FOR MOBILE MIDDLEWARE TECHNOLOGY PROVIDERS

Abstract
As Mobile Network Operators are turning their attention to value added services, the need for innovative platforms designed for mobile digital content management becomes evident. Such phenomenon is enhancing the role of Mobile Middleware Technology Providers (MMTPs) within the Mobile Content value network. The aim of this paper is threefold: to identify the core business model design parameters for MMTPs; to understand how these parameters are combined to give rise to differential business models; and to delineate what are the “strategic patterns” driving the models’ design choices. Through multiple case studies, 24 companies are analyzed. The findings allow to shape a business model reference framework which captures the core parameters, and to identify a taxonomy of three noteworthy business models currently adopted by MMTPs – “Pure Play”, “Full Asset” and “Platform & Content Management”–, associated respectively to three underlying strategic patterns: “stay on core”, “grow, wait and see” and “aggressive downstream”.

1 Introduction
Forced to face the gradual leveling off of voice revenues (Nomura, 2005; Arthur D. Little/BNP Paribas, 2005; Funk, 2009) that lead to a subsequent decrease of Average Revenue per User (Muller-Veerse, 1999; MacKenzie, O’Loughlin, 2000; Juniper Research, 2010), Mobile Network Operators (MNOs) are to cope with a new dilemma: how to generate revenues for sustaining their future growth. The answer seems to come from the development of a wide and appealing offer of value added, non-voice services, pertaining to the so-called Mobile Content segment (Maitland et al., 2002; Li, Whalley, 2002; Peppard, Rylander, 2006; Kuo, Yu, 2006; Noordman, 2006).

The height of stakes involved and the Incumbents’ commitment on this portfolio diversification strategy is testified by the size the market is rapidly reaching: the Mobile Content market relevance in the overall Mobile TLCs landscape is rising dramatically, as analysts expect that its global value, only partially hindered by the ongoing recession, will exceed 100 billion $ by 2013 (Informa, 2010; Juniper Research, 2010; Strategy Analytics, 2010, IDATE, 2010).
However, the strategic reorientation of MNOs will not be straightforward, and will not take place overnight. Specifically, on the technology architecture level, MNOs will need to introduce new solutions capable of overcoming the constraints and limitations of legacy systems and of the oversimplified Short Message Service Centers, not suitable for providing carrier-grade performances when dealing with “rich media” digital content. Such solutions are here named “Mobile Content and Service Delivery Platforms” (MCSDPs), and can be defined “as middleware platforms combining a wide set of functionalities – consistently aggregated into different modules, and equipped with network-side and device-side interfaces, thus creating an integrated suite with the purpose of supporting some or each phase of the mobile digital content creation, management & delivery process” (Sabat, 2002; Karvonen, Warsta, 2004 Ballon, Van Bossuyt, 2006).

The diffusion of second generation delivery platforms will enhance the strategic relevance of a new player typology: the platform supplier, from now on referred to as “Mobile Middleware Technology Provider” (MMTP). Such players, whose significance in the ICT-TLC environment is fairly indisputable – among this category, beyond Mobile-specific firms, we find internationally renown companies of the size of Alcatel-Lucent, Ericsson, HP IBM, Logica CMG, Microsoft and Qualcomm, listed in the first places of rankings for market capitalization (Financial Times, 2010) – are converging in the Mobile Content market from several neighboring business areas, and their moves can reshape Mobile Content’s Value Network, potentially determining unexpected competitive attritions between these new players and incumbents.

These new competitive dynamics deserve attention from both researchers and practitioners. In particular, questions arise concerning the strategies Mobile Middleware Technology Providers will elaborate to compete in the market, and the business models they will hence design and adopt.

The purpose of this paper is to explore which are the most critical choices – i.e. parameters or “building blocks” – to be made at a business model design level for a MMTP, to understand how such parameters are interrelated and can be combined to give rise to differential business models, and finally to delineate what are the most significant underlying strategies or “strategic patterns” that seem to be driving the first steps of MMTPs activity within the Mobile Content competitive arena.

As a result, a reference model will be created, whose main objective is to provide a description of the key parameters characterizing MMTPs’ business models, to identify
the extreme values such variables can assume, and to evaluate and assess the strategic implications of each building block choice. Moreover, the main existing combinations of parameters which shape the business models currently employed by this typology of companies will be analyzed and interpreted, so to make some inferences regarding the related overall strategies undertaken.

2 Literature Review

2.1 A definition for Mobile Middleware Technology Providers

The literature dealing with technology enablers for Mobile market is quite fragmented, and fails to provide a clear and unified definition of Mobile Middleware Technology Providers. They MCSDP vendors are alternatively called Application Platform Vendors (Turban, King, 2002; Kuo, You, 2006), “Navigation & Middleware Providers” (Fransman, 2001; Li, Whalley, 2002), “Middleware Developer & Provider” (Maitland et al., 2002), “Mobile Services Delivery & Support Providers” (Barnes, 2002), “Wireless Platform and Utility Application Provider” (Sabat, 2002), “Infrastructure Service Providers” (Karvonen, Warsta, 2004), “Application Providers” (Camponovo, Pigneur, 2003) “Middleware Platform Providers” (Ballon, Van Bossuyt, 2006), or, according to the Research and Consulting literature, “Content Enablement Platforms Provider”, “Mobile Content Delivery Platform Provider”, “Next Generation Service Delivery Platform Vendor” (Forrester, 2007; The Insight Research Corporation, 2007). Moreover, such players are also associated with several different sets of roles – i.e. set of distinct value added activities covered within a value system (Ballon, 2007) –.

This lack of homogeneity in definitions is mainly due to the current complexity characterizing the Mobile Content market, no longer describable through the linear Value Chain model (Porter, 1985), but shaped as a multi-layered and multidirectional Value Network (Hakanson, Snehota, 1989; Normann & Ramirez, 1994; Gulati et al., 2000) which results from the juxtaposition of different major value chains and systems (Gulati et al., 2000; Li & Whalley, 2002; Stabell, Fjeldstad, 2002; Huemer, 2006; Peppard & Rylander, 2006; Funk, 2009):
- Mobile Telecommunications;
- Information Technology;
- Media;
- Web and Electronic Commerce
As a consequence of the different points of view taken, different definitions and roles arise for Mobile Middleware Technology Providers. Focusing on the activities strictly related to creation, management & delivery of Mobile digital content, the Value Network considered is proposed in Ghezzi et al. (2009), and results from the composition of two parallel but interconnected layers – consistently with the “layered architecture” concept introduced by Huemer (2006):

1. **Content & Service Layer**, covering the activities related to the lifecycle management of mobile digital content and services;

2. **Platform Layer**, undercurrent to the previous layer, which comprises the activities of designing, producing and operating the middleware platforms destined for mobile content management and delivery.

![Figure 1. The Mobile Content Value Network](image)

The interconnection between the layers becomes evident with the activity of Content Publishing on the MCSDP. The Content & Service Layer can be divided into an “upstream chain”, encompassing the activities from content creation to its preparation for delivery, and a “downstream chain” considering the stages following the content commercialization.

The main focus of MMTPs resides within the Platform Layer: the middleware technology enablers are active in MCSDP design, manufacturing, provisioning – i.e.
supplying the platform to the customers, mainly MNOs and/or Mobile Content & Service Providers (MCSPs), operation – i.e. platform technical maintenance and upgrading, and management – i.e. overall handling of the platform’s functionalities, from content publishing to physical distribution, exclusively from a technological point of view; marketing and selling activities are therefore excluded from this area, and belong to the “Content Delivery & Market Making” activity. Nevertheless, an extension of the MMTPs domain to include one or many overtcurrent activities may be plausible: such alternative positioning, deriving from specific choices made at a strategy definition level, would however potentially determine a competition between MMTPs and MCSPs. The strategic implications of this scenario will be discussed later.

As a result of the Value Network model presented above, and given the range of activities topped by this typology of players, a unified and unambiguous definition of the player typology under scrutiny is offered: Mobile Middleware Technology Providers players are traditionally positioned on the Platform Layer – the technology enabling Value Chain for Mobile Content market, and their core role encompasses some or every activities related to the development of middleware Mobile Content and Service Delivery Platforms.

2.2 The literature state of the art on Business model design parameters

Starting from the seminal work of Timmers (1998) published on Electronic Markets, the concept of business model 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, Vitale, 2001). As Teece (2010) recently put it, the essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit.

As a literature stream, business model design has evolved from a piecemeal approach that looked for the single identification of typologies or taxonomies of models (Tapascott et al., 2000; Amit and Zott, 2001; Rappa 2001; Weil and Vitale, 2001), to one searching for the development of a clear and unambiguous ontology – that is, the definition of the basic concepts of a theory – (Osterwalder, 2004), that could be employed as a generalized tool for supporting strategy analysis of firms. In parallel, business model has become an extensive and dynamic concept, as its focus has shifted from the single firm to the network of firms, and from the sole firm’s positioning within the network to its entire interrelations and hierarchies (Ballon, 2007; De Reuver, 2009).
What is widely accepted by literature is that a business model shall be analyzed through a multi-category approach, as a combination of multiple design dimension, elements or building blocks. However, the proposed dimensions and interrelations are quite diverse, and the existing body of knowledge shows a lack of homogeneity (Johnson et al., 2008). Noteworthy attempts of providing a unified and consistent framework can be found in several works. Yu (2001) mentions different critical business model components such as assets, markets, customers, competitors, products, services, costs, prices, revenues, profits, market shares, economic scales, marketing strategies, competitive advantages. According to Hedman and Calling (2003), the conceptual business model should include elements such as customers and competitors, the offering, activities and organisation, resources and factor market interactions. Osterwalder (2004), in his proposed business model design template, identifies four key dimensions for a business model: infrastructure; offering; customers; and finance. Morris et al. (2005) propose a six-component framework for characterizing a business model, regardless of venture type, which comprehends: value creation; value target; internal source of advantage; firm market positioning; value capture; entrepreneur’s time, scope and size ambitions.

In his conceptual work, Ballon (2007) holds that the recurrent parameters a business model is built on can be brought back to the general concepts of value, i.e. the way a firm creates actual benefits to its customers and to itself through its value proposition and financial configuration, and control, i.e. the inter-firms or Value Network relationships the firm is involved in and controls over. For Johnson et al. (2008), a business model consists of four interlocking elements that, taken together, create and deliver value: customer value; profit formula; key resources; and key processes. Recently, Amit and Zott (2009) suggest two sets of parameters that systems designers need to consider: design elements – content, structure and governance – that describe the architecture of an activity system; and design themes - novelty, lock-in, complementarities and efficiency - that describe the sources of the activity system’s value creation.

The business model design literature is gaining growing interest within the Strategic Management research field (Ghezzi et al., 2010). Nevertheless, though intuitive (Bloodgood, 2007), the explicit relationship between strategy and business model is currently under-investigated: 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), innovation management and theory (Teece, 2010) are driving scholars to fill the existing literature gap, though the issue remains undoubtedly open.

The literature review on business model design allowed to individuate a further literature gap: as the Mobile Content segment is a relatively young market, and as the “advent” of MMTPs within such market’s boundaries is an extremely recent phenomenon, previous literature has focused on the analysis of focal players such as the Mobile Network Operators – e.g. see Peppard, Rylander (2006), Kuo, Yu (2006), Funk (2009) –, while only few consolidated theories on strategy creation and business model design in the market context and with reference to the specific player typology under consideration are present – e.g. Ballon, Van Bossuyt (2006), which however concentrates on the activities covered by the platform provider rather than on the comprehensive definition of the business model it adopts –.

Therefore, starting from the existing literature on business model design, and taking into account the building blocks so far pinned down, this research attempts to identify the key business model parameters for MMTPs, and to assess the strategic implications of the “parameters mix” actually employed by these players operating in the Mobile Content market.

3 Research Methodology

The present research is based on case studies, defined by Yin (2003) as “empirical inquiries that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. Qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomenon of business model design development within a given industry – i.e. Mobile Content – and with reference to a specific typology of players – MMTPs –, and thus at building new theory – or extending existing theories – on it.

To accomplish the previously identified research propositions, 24 in-depth exploratory case studies on MMTPs were performed. Coherently to the research methodology employed (Pettigrew, 1988), the firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both
similarities and differences considered relevant for the data analysis. The main predetermined filters used to discriminate among firms were:

1. the international reach of the firm – assumed if at least two national markets were served –. The filter is considered a proxy for the firm’s significance and for the generalizability of results;

2. the presence of a well-defined line of business – if not the core business – dedicated to the commercialization of Content and Service Delivery Platforms or platform modules. The filter allowed to discriminate whether the firm under scrutiny could be labeled as a “Middleware Technology Provider”, consistently to the definition provided in Section 2.1;

3. and the presence of an offer directed to the Mobile Telecommunications market. The filter allowed to narrow the dominion of analysis to those Middleware Technology Providers operating inside the Mobile Industry, either exclusively – such as Beeweeb, Mblox and Sybase – or as part of a fairly diversified business portfolio – as in the case of large diversified technology providers like Alcatel-Lucent, Ericsson, Logica CMG/Acision, Microsoft and Qualcomm –.

The following table provides the full list of analyzed companies.

**Sample of companies**

<table>
<thead>
<tr>
<th>Acatel-Lucent</th>
<th>Digital Factory</th>
<th>Microsoft</th>
<th>Qualcomm</th>
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<td>Bea Systems</td>
<td>First Hop</td>
<td>Nac</td>
<td>Reitek</td>
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<td>Beeweeb</td>
<td>HP</td>
<td>Neodata</td>
<td>Reply</td>
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<td>Comverse</td>
<td>IBM</td>
<td>Nokia-Siemens Networks</td>
<td>Sybase 365</td>
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<td>Dylogic</td>
<td>LogicaCMG/Acision</td>
<td>Openwave</td>
<td>TXT Polymedia</td>
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<tr>
<td>Ericsson</td>
<td>Mblox</td>
<td>Polarix</td>
<td>Xiam Technologies</td>
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**Table 1. Theoretical sample of companies interviewed**

A multiple case study approach reinforced the generalizability of results (Meredith, 1998), and the sample heterogeneity, which comprises quite diverse companies (in terms of dimensions, revenues and portfolio diversification), allowed to perform a cross analysis on parameters, to pinpoint differentials in terms of parameters combination – to see which variables changed and which remained constant going from one business model to another –, due to the presence of extreme cases, polar types or niche situations
within the theoretical sample (Meredith, 1998). The unit of analysis for each case study were the set of decision made at a business model design level.

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), multiple sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings –. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

From January to September, 2009, 72 semi-structured interviews – both face-to-face and phone interviews – were held with 65 persons identified as key participants in the firms’ strategy definition and business model design processes at different levels. The population of informants included top and middle managers – e.g. Presidents, Chief Executive Officers, Chief Information Officers, Chief Financial Officers, Marketing & Sales Managers, Project Manager, Software Engineers and Developers –. The semi-structured nature of the questionnaire made possible to start from some key issues identified through the literature, but also to let innovative issues emerge.

All interviews, carried out from the perspective of the “outside observer” – which ensures to obtain relative frank opinions from the interviewees, since the research is not directly involved and has no personal stake on the issues discussed (Mumford, 1985) – were both written down on extensive notes and tape-recorded, as suggested in Whalsham (1995), and then transcribed and analyzed separately by different researchers so to grant a multi-perspective analysis, thus limiting the perception bias risk (Eisenhardt, 1989; Meredith, 1998).

The identification of core topics the discussion of the process flaws could brought back to leveraged on practices borrowed from “Grounded Theory” methodology (Glaser, Strauss, 1967), which helps developing new theory or a fresh insight into old theory: after identifying the research “core categories” – i.e. the business model design macro-dimensions –, the related “conceptual categories” – i.e. the business model design parameters – were then isolated and described by means of applying the “open coding” technique to the interviews transcriptions.
Throughout the research, theory – represented by the literature review – is used as “part of an iterative process of data collection and analysis” (Eisenhardt, 1989), meaning that it is employed as an initial guide to design the study and the process of data gathering, though it is never intended to constrain emergent issues coming from the qualitative analysis, so to preserve the suggested considerable degree of openness to the field data (Orlikowski, 1993; Walsham, 1998; Yin, 2003). Therefore, the business model design variables identified through the literature analysis only constituted a starting point to guide the interviews: the identification of core business models parameters and the disentanglement of their combinations to create a thorough business model will represent a key finding of the present research.

4 The MMTP’s business model design core parameters and reference framework

The research carried out through the multiple case studies allowed to shed light on the core business model design parameters for Mobile Middleware Technology Providers. The findings are synthesized in the “MMTP Business Model Parameter Reference Framework” below provided, which identifies three macro-dimensions, in turn divided into 9 parameters.

1. **Value Proposition parameters.** Platform characteristics; Offer positioning; Platform provisioning; Additional services; Resources & competencies.
2. **Value Network parameters.** Vertical integration; Customer ownership.
3. **Financial Configuration parameters.** Revenue model; Cost model.

For each and every parameter, the “value range” is identified, i.e. the extremes values the variables can assume, which also represent the major trade-off between opposite choices; the main strategic implications deriving from alternative parameters adoption are also discussed.

**Platform characteristics**

As the MCSDP is the core element of MMTPs’ value proposition, its characteristics are a key parameter to be modeled, for they strongly affect the firm positioning. The main alternatives here are developing a modular and interoperable solution versus an integrated and stand-alone system. Should the platform be modular and interoperable, it would allow an easier and faster market diffusion – such choice being advisable for new entrants, searching for quick consolidation within the market (Blind 2005), thanks to the access to a wider customer base; however, to modularity and interoperability is often
associated the risk of easy substitutability. In addition to this, a higher modularity and interoperability of MCSDPs can also give rise to interesting “co-opetition” – coexistence of “cooperation” and “competition” – phenomena among MMTPs, where competitors on a project/product can be partners for the modular development of a different project/product. On the other hand, providing an integrated and scarcely interoperable platform slows down the market penetration process, but if the solution is adopted by MNOs or MCSPs, it strengthens the ties between the customers and the technology supplier, potentially generating lock-in effects.

**Offer positioning**

Offer positioning is related to the choice of developing a MCSDP devoted to the management & delivery of “mature” content – Sms, Mms, logos, wallpapers, ringtones and so on (Juniper Research, 2010; Portio Research, 2010; Pyramid Research, 2010) –, or meant to deal with more innovative and cutting edge services – like video services or Mobile Tv. While operating in traditional segments grants faster platform diffusion, but forces the MMTP to face a higher level of competition – with a risk of seeing a gradual “commoditization” of its products, the coverage of forefront areas could position the firm in attractive niches, but may even imply higher demand risks, as the uptake of such services is hardly predictable.

**Platform provisioning**

The MCSDP provision modality is an emergent parameter, particularly interesting in the case of MMTPs, as it influences the kind of relation the technology supplier creates with its business customers. Installation in MNOs’ or MCSPs’ house is a typical choice for standard, out-of-the-box solutions which only need parametrization, and implies both an increased technical independence on MNO/MCSP side, and a clear separation between customer-supplier businesses. A particular case of housing is represented by the choice of full outsourcing – coming from a cross-fertilization of the MCSDP market from the IT platform and System Integration markets, where this practice is widespread; in this alternative, the MMTP physically installs the platform within the customer’s structure, and thoroughly takes on its technical management. On the contrary, the hosting or Application Service Provisioning (ASP) option sees the MMTP maintaining the core platform within its perimeter, and supplying it to its customer following the “software as a service” model: this allows the technology provider to keep a greater
presidium on the platform, and to exploit both scale and scope economies on the platform provisioning infrastructure.

**Additional services**

Another original parameter for MMTP business model design, additional services refers to the complementary offer accompanying the MCSDP selling, which can range from a simple technological management of the platform’s operation – e.g. maintenance, upgrading etc. – to, in some rare case, as discussed in the next paragraph, a commercial management of the content and services published on the MCSDP itself. While the first choice is a natural consequence of the platform provider’s traditional role, the second implies an atypical evolution of MMTP positioning and market scope, and gives rise to the insurgence of a value network “structural equivalence” (Gulati et al., 2000) between MCSPs and MMTPs, thus determining competitive attrition among the two player typologies.

**Resources & Competencies**

As the “research based view” and the “dynamic capabilities approach” state, a firm’s collection of path-dependent core resources and competencies strongly influence its ways of seeking competitive advantage (Hamel, Prahalad, 1990; Teece et al., 1997). As a consequence, if the prevalence of technology oriented R&C makes a firm better disposed towards a mere technological partnership with its potential customers, the unbalance towards content oriented resources and capabilities enhance the MMTP tendency to propose itself as an “editorial partner” to MNOs, that is, a player capable of covering the activities of content creation, management and market making in the upper Content & Service value network layer.

**Vertical integration**

The level of vertical integration refers to the MMTP coverage of activities in the Mobile Content Value Network. A positioning on the Platform Layer activities denotes a clear choice of self-relegation to a peripheral place in the network, covering a technology enabler role which does not go beyond the MCSDP provisioning and management processes, and stays out the downstream chain that allows direct contact with the end user. Contrariwise, selecting a positioning embracing an integrated technological and commercial management of both the platform and the content published on it, puts the
MMTP in a more central role in the system, closer to the “network focal” – the MNO – and to the primary source of revenues – the end customer – (Gulati et al., 2000; Peppard, Rylander, 2006). Of course, such strategic choice implies a more direct competition with MCSPs.

**Customer ownership**

Strongly related to the choices concerning vertical integration, customer ownership deals with the nature of the relationship established between the MMTP and the end customer. An intermediated customer ownership on the Technology Provider’s part implies a higher reliance on MNOs and MCSPs; the MCSDP vendor only receives indirect revenues streams from its business counterparts. Instead, a direct relationship with the end customer enhances the MMTP position in the Value Network, causing competitive attritions with MCSPs.

**Revenue model**

The revenue model parameter refers to the kind of revenue streams flowing from the MNO/MCSP to the MMTP, that can vary from mere selling of the platform, to a full revenue sharing agreement on the content/services delivered through the MCSDP. The choices related to this element, are strictly linked to the platform provisioning parameter, and shall be considered extremely critical, because of their many implications on the firm’s overall positioning and strategy. While system selling is based on a spot and fixed revenue for the MMTP, and presupposes a clear distinction between its business and the ones of its customers, the full revenue sharing solution rests on a division of potential revenues coming from content/service selling to end customers. As such, the latter solution is strongly affected by the uptake and the consequent success of the service provided by MNOs and MCSPs; therefore, the MMTP revenues are spread on the whole service lifecycle, and are subject to a higher variance, for the technology provider is sharing not only opportunities, but also risks related to the service commercialization, finding itself in a “business sharing” condition. The case studies showed that system selling and revenue sharing agreements only represent the extreme endpoints of the *continuum* of solutions available: in between, players can select hybrid alternatives, such as:
the combination of a “start-up fee” – also known as “set-up fee” or “minimum granted” – covering MCSDP development and installation costs, and a “monthly rent” for the platform provisioning;
- a “monthly rent” integrated with a “consumption fee” after exceeding predetermined thresholds of usage;
- or else, a “start-up fee” plus a “revenue sharing” agreement.

Cost model
The cost model refers to the nature of investment undergone for MCSDP development. If the investment are concentrated on the MMTP side, the risks associated to the project are not shared, but the player can benefit from a greater strategic independence after the solution is created. In the case of joint investment between the MMTP and the MNO/MCSP, the risks related to the project are spread on several actors; still, the MMTP enjoys less freedom, as its choices will have to be aligned with the strategic priorities of its partners.

<table>
<thead>
<tr>
<th>Business Model Parameter</th>
<th>Value Range (Trade-off)</th>
<th>Strategic Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform Characteristic</td>
<td>Modular, Interoperable</td>
<td>Easier diffusion/Substitution. Co-opetition with other MMTP.</td>
</tr>
<tr>
<td></td>
<td>Vertical, Stand-alone</td>
<td>Increased control. Lock-in/lock-out effects.</td>
</tr>
<tr>
<td></td>
<td>In-house installation</td>
<td>Increased MNO/MCSP technical independence. Separation between MMTP and MNO/MCSP business.</td>
</tr>
<tr>
<td>Platform Provisioning</td>
<td>Hosting (ASP)</td>
<td>MNO/MCSP reliance on MMTP technological infrastructure. Exploitation of scale/scope economies on the MMTP side. Focus on upstream technology activities.</td>
</tr>
<tr>
<td></td>
<td>Platform Management</td>
<td>Full technical service approach.</td>
</tr>
<tr>
<td>Additional Services</td>
<td>Content</td>
<td>Extension on downstream activities.</td>
</tr>
<tr>
<td></td>
<td>Marketing &amp; Sales</td>
<td>Competition with MCSP.</td>
</tr>
<tr>
<td></td>
<td>Technology oriented</td>
<td>Disposition towards technology partnership.</td>
</tr>
<tr>
<td>Value Proposition</td>
<td>Content oriented</td>
<td>Disposition towards editorial partnership.</td>
</tr>
</tbody>
</table>
As it will become clear from the framework description below, some building blocks were borrowed by previous models, while others, as not present in the existing literature or not made explicit, were modified or originally created through the empirical research to better express some aspects strictly linked to MMTPs.

In particular, the empirical field research carried out through the interviews show how the conceptual models proposed by Osterwalder (2004) and Ballon (2007) hold true concerning the general variables “value proposition”, “vertical integration”, “customer ownership”, “cost model” and “revenue model”. Still, core specific parameters emerge for the actor typology under scrutiny, with particular reference to the Value Proposition building block: the product’s characteristics, the way the offer is positioned with reference to the services it enables, the provisioning modality, the additional services bundled and the resources & competencies endowment the firm leverages to design its overall proposition have a significant explanatory power and deep strategic implications on the players’ overall competitive positioning.

In the next section, the noteworthy combinations of business models parameters, as emerged from the case studies, will be disclosed and presented through a first taxonomy, and the related underlying strategies will be described.

5 A taxonomy of the emerging business models and the underlying strategic patterns
After identifying the strategic implication of single business model parameters, the further step of the study focuses on discovering and interpreting MMTPs’ emerging business models and strategies driving their adoption.

The in-depth analysis on the theoretical sample of 24 firms allowed to identify a taxonomy of three main emerging business models currently developed and adopted by these players, corresponding to noteworthy specific combinations of parameters; such business models were then associated to three underlying “strategic patterns” that appear to be driving the players activity in the Value Network.

1. “Pure play” Business Model, determined by a “Stay on core” strategic pattern;
2. “Full asset” Business Model, determined by a “Grow, wait and see” strategic pattern;

<table>
<thead>
<tr>
<th>STRATEGIC PATTERN</th>
<th>BUSINESS MODEL TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Stay on core” Strategy</td>
<td>“Pure Play” Business Model</td>
</tr>
<tr>
<td>“Grow, wait and see” Strategy</td>
<td>“Full Asset” Business Model</td>
</tr>
<tr>
<td>“Aggressive downstream” Strategy</td>
<td>“Platform &amp; Content Management” Business Model</td>
</tr>
</tbody>
</table>

Figure 2. A taxonomy of MMTPs emerging business models and strategic patterns

The “Pure Play” Business Model is adopted by 7 firms out of 24 – among which are Bea Systems, Beeweb, Digital Factory, First Hop, Nec, Neodata and Openwave – and is characterized by: a value proposition strongly focused on technology, in terms of platform provisioning – in-house installation is preferred to ASP or outsourcing, additional services – restricted to platform management, and resources & capabilities mainly technology oriented; a clear positioning on the Platform layer of the Value
Network – distant from the end customer, bringing about a sharp distinction between the MMTP and MNO/MCSP businesses; and a financial configuration resting on fixed revenues and concentrated investments. The model is therefore defined “pure play” as the MMTPs employing it have pursued a consistent alignment between internal structure and external positioning, totally focused on the role of technology enablement.

![Diagram of “Pure Play” Business Model]

- **Value proposition** quite rigid, strongly focused on technology:
  - in-house installation preferred to hosting and ASP;
  - additional services restricted to platform management;
  - technology-oriented resources and competencies.
- **Value Network** positioning on the Platform layer:
  - distance from end-customer;
  - sharp distinction between MMTP and MNO-MCSP businesses.
- **Financial Configuration** resting on fixed revenues and concentrated investments.

**Figure 3.** The “Pure Play” business model type

The strategy determining this architecture is called “stay on core”, as all the informants of the firms comprised in the cluster declared that the business model design process was guided by the strategic choice of focusing on the traditional core business, oriented to the simple offer of technology. Other motivations leading to such conservative strategic positioning were the decision to restrain from representing a threat – real competition or even potential overlapping of activities – to their current customers, MNOs or MCSPs, and the unwillingness to internally develop *ex novo* the structure and know-how necessary for creating and commercializing digital content.

The adoption of “dirty” business models characterized by a non-transparent positioning towards the customers is explicitly criticized by Pure Players. In particular, the establishment of a full revenue sharing agreement is considered not advisable by the large majority of “pure play” firms – the informants belonging to 12 companies out of 14 labeled it as “way too risky” or “unfeasible”, for the following reasons:
the revenue models structure grants extremely low margins to the technology provider – ranging from 1% to 5% of the total revenue;

- revenue sharing relies too strongly on the delivered services’ performance, and usually turns into a “loose-loose” game for the MMTP – if the service is unsuccessful, a full coverage of MCSDP development and installation costs is not assure; yet, should even the service prove itself appealing to the market, the MMTP would often be forced to renegotiate the contract and reduce its share of margins, due to the higher bargaining power its customers possess.

Figure 4. The “Full asset” business model type

The “Full Asset” Business Model is adopted by 15 firms – specifically, Alcatel-Lucent, Dylogic, Ericsson, HP, IBM, LogicaCMG/Acision, Mblox, Microsoft, Nokia-Siemens Networks, Polarix, Qualcomm, Reitek, Reply, Sybase 365 and Xiam Technologies –. It differs from the “pure play” model in the tendency shown by these MMTPs to acquire and/or develop a wide portfolio of assets, resources and capabilities, not only related to the Platform Layer, but also to the Content & Service Layer. In some significant cases, these companies are also taking on the role of “third party relationships enablers”, providing contractual support finalized at interconnecting either with MNOs – Mblox and Sybase 365 – or generic Content Providers – Ericsson, Qualcomm –. Nevertheless, for the moment these players are not leveraging on their “full asset” portfolio, as their
actual coverage is still concentrated on technology activities, not being far from the positioning chosen by “pure play” MMTPs.

Analyzing the interviews, it is possible to argue that these firms are following a “grow, wait and see” strategy, as they recognize the value of creating a know-how on content creation and commercialization, and keep on investing on their pool of assets, but are still reluctant to abandon their traditional business. They would rather wait that the market, currently shaken by ongoing the Mobile-Web convergence phenomenon, takes a more defined shape, where they hold a consolidated position as a technology enabler; as soon as “time is right”, they may decide to exploit their high competitive potential, expanding their scope to the market making of content and services.

The “Platform & Content Management” Business Model is only adopted by 2 firms: Comverse and Txt Polimedia. Still, it deserves attention as its implications for the future development of the whole Value Network can be extremely significant. The MMTPs employing this model have extended their reach to the Content & Service Layer, embracing a integrated technical-commercial management of mobile digital content. Their value proposition lists to hosting solutions of platform provisioning, to additional services related to content market making, and to content-oriented resources & capabilities; their vertical integration is high, covering activities which grant higher
customer ownership; their financial configuration sees the possibility of establishing revenue sharing agreements, as well as joint investments.

Taking advantage of the evolved relationships cultivated with their partners – the MNO Vodafone in the case of Comverse, and the Italian Media Company Mediaset in the case of Txt Polimedia –, these players made innovative and explorative strategic choices, particularly aggressive in the downstream activities close to the end customer. Their aim is to contribute in creating the commercial ecosystem that represents the main outlet for their technology solutions, and at the same time to place themselves in a more central position in the network, closer to the network focal and to the end user.

The drawback of this new role is related to the competitive dynamics that it could generate. MCSPs could see their business threatened, and start perceiving MMTPs as competitors: to retaliate, they could try to strengthen the ties linking them to Content Providers and Operators, thus isolating the platform providers; the biggest MCSPs could also undertake a process of upstream integration, acquiring the skills to internally develop their MCSDP. However, as the phenomenon of overlapping between MMTPs and MCSPs is extremely recent and not yet generalized, its competitive evolutions are still hardly foreseeable, and shall be subject to future research.

6 Conclusions

The research allowed to identify the core business model design parameters for Mobile Middleware Technology Providers; moreover, it shed light on how these building blocks are currently combined by MMTPs to give rise to complete business models architectures, and what strategies drive such design choices.

Concerning the first major research objective – that is, the business model parameters identification –, the findings shows that some key business model parameters identified by the existing literature can be applied to MMTPs’ business model design activity—with specific reference to the work from Osterwalder (2004) and Ballon (2007) –, while others were missing or not made explicit. The framework has the power to entangle link Value Proposition parameters, which focus on how value is created for the customer through the product/service offer, to Value Network Integration parameters, which stress how the company interconnects to its external ecosystem and covers the core value creating activities, and finally to Financial Configuration parameters, which assess how the company is able to capture the created value through comparing different revenue and cost models.
With reference to the second research objective – the individuation of the analyzed players’ design choices, three noteworthy business model currently adopted by MMTPs – “Pure Play”, “Full Asset” and “Platform & Content Management” business models – were identified, associated respectively to three underlying strategic patterns – “stay on core”, “grow, wait and see” and “aggressive downstream”. Thanks to the rigor of the methodology employed, and to the width and significance of the theoretical sample analyzed, these research can be replicated, and its findings can be generalized.

The paper’s value for researchers can be brought back to its descriptive and normative contribution to Value Network and Business model design theories. Existing literature on Value Network – with specific reference to the Mobile Content Network – was extended, through the provisioning of a unified definition for the player typology under scrutiny and its role in terms of activities covered. Business model design literature was applied to the study of a new player typology, and original design parameters, as well as their combinations to create a first taxonomy of MMTPs business models, have emerged. Moreover, the relation between strategy creation and business model design was made empirically explicit, through the identification of business model design choices’ strategic implications.

The value for practitioners lies in the creation and provisioning of a “reference framework” capable of supporting the decision making process concerning business model design, as it presents strong ties between business model parameters and strategic implications.

The research represent a significant step towards the development of business model design theory, with specific reference to the rising role of Mobile Middleware Technology Providers. However, it does not analyze the potential different performances coming from alternative parameters selection. Beyond widening the theoretical sample of analysis, future works will have to concentrate on the identification of newly emerged strategic patterns, which result in alternative combinations of business model parameters, and to develop comparative or “benchmarking” analysis among them, in order to explain any differential in firms performances, pinpointing which single parameter or parameters mix may be seen as the origin of such deltas.

7 References list


PART 6

Mobile Middleware Technology Providers: a strategic positioning analysis reference framework
2.6 MOBILE MIDDLEWARE TECHNOLOGY PROVIDERS: A STRATEGIC POSITIONING ANALYSIS REFERENCE FRAMEWORK

Abstract

The paper develops a reference model to support the strategic positioning analysis of Mobile Middleware Technology Providers (MMTPs), shedding light on the business models and the strategic positioning currently adopted by this actor typology. The paper combines a literature review and a multiple case study approach – 24 in-depth cases based on 72 semi-structured interviews were performed – to deal with a significant and relatively new issue, i.e. the role of Technology Providers in the Mobile Value Network. Through the creation of a system of strategic clustering matrices, four key business models currently adopted by MMTPs – “Pure Play”, “Full Asset”, “Third Parties Relationship-focused” and “Platform & Content Management” – are identified, and insightful conclusions on the impact of these actors’ newly emerging influence on the market’s competitive dynamics are drawn. The framework created supports a wide set of Mobile Communications stakeholders – both incumbent and new entrants – in their decision making and strategy analysis process.

Keywords Mobile Communications, Strategy, Strategic Positioning, Competition, Business model, Mobile Content, Mobile Middleware Technology Providers, Mobile Content & Service Delivery Platform, Reference framework, Multiple Case Studies

I. Introduction

The recent strategic reorientation of Mobile Network Operators (MNOs) towards the Mobile Content market (Kuo and Yu, 2006) (Peppard and Rylander, 2006) – i.e. the market for value added, non voice services – to cope with the gradual leveling off of average revenue per user (Arthur D. Little, 2005) (MacKenzie and O’Loughlin, 2000), gave origin to a deep readjustment of the whole Mobile Value Network, in terms of actors involved and coverage of key activities related to the process of creating, managing and delivering mobile digital content and services.
Within such context, a relatively new actor typology emerged: the Mobile Middleware Technology Provider (MMTP), supplier of the “Mobile Content and Service Delivery Platform” (CSDP) used to create, manage and deliver the content portfolio developed by Mobile Network Operators (MNOs) and Mobile Content & Service Providers (MCSPs).

The existing literature dealing with middleware technology enablers for Mobile Value Network is quite fragmented, and fails to provide a clear and unified definition of Mobile Middleware Technology Providers (Barnes, 2002) (Li and Whalley, 2002) (Maitland et al., 2002) (Sabat, 2002) (Turban and King, 2002). In particular, questions arise concerning the business models Mobile Middleware Technology Providers will design and adopt to compete in the market.

A comprehensive definition of this actor typology can be found in (Ghezzi, 2009): Mobile Middleware Technology Providers are traditionally positioned on the Platform Layer – the technology enabling Value Chain for the Mobile Content market, and their core role encompasses some or each activities related to the development of middleware Mobile Content and Service Delivery Platforms, ranging from platform design to platform manufacturing, provisioning, operations and management.

Given the current market fluidity, these players have the opportunity to seize a more central role in the network, also extending their traditional business – focalized on the CSDP design and manufacturing – downstream, towards the commercial management of content published on their platforms. However, since such market making activities have always been a MCSP prerogative, this recent trend could cause strong competitive attritions.

Therefore, the purpose of this study is to develop a reference model to support the strategic analysis of Mobile Middleware Technology Providers, shedding light on the business models currently adopted, as well as assessing the potential overlapping of positioning between such actor typology and other incumbent players.

The resulting framework will be based on a mediation between the internal and external strategic analyzes, and will propose a system of classification matrices to obtain a strategic clustering of an extremely significant sample of companies classifiable as MMTPs.

II. Research methodology
In order to collect both qualitative and quantitative information concerning Mobile Middleware Technology Providers, the literature analysis on the Mobile Content market and value network was integrated by the adoption of the multiple case studies research methodology (Yin, 2003): from January to July, 2008, 24 in-depth exploratory case studies – based on 72 both face-to-face and phone semi-structured interviews – on MMTPs were performed, focusing on the identification of key strategic classification variables set of variables and dimensions. Coherently to the research methodology employed (Pettigrew, 1988), the firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data analysis. The main predetermined filters used to discriminate among firms, thus identifying which companies could be labelled as MMTPs, were: the presence of a well-defined line of business – if not the core business – dedicated to the commercialization of Content and Service Delivery Platforms or CSDP modules; and the presence of an offer directed to the Mobile Telecommunications market. The following table provides the full list of analyzed companies.

Table I. Theoretical sample of companies interviewed

<table>
<thead>
<tr>
<th>Sample of companies</th>
<th>Sample of companies</th>
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<tbody>
<tr>
<td>Aepona-Appium</td>
<td>Microsoft</td>
</tr>
<tr>
<td>Alcatel Lucent</td>
<td>Nec</td>
</tr>
<tr>
<td>Bea Systems</td>
<td>Neodata</td>
</tr>
<tr>
<td>Beeweeb</td>
<td>Nokia-Siemens Networks</td>
</tr>
<tr>
<td>Comverse</td>
<td>Openwave</td>
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<tr>
<td>Dylogic</td>
<td>Polarix</td>
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<tr>
<td>Ericsson</td>
<td>Qualcomm</td>
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<tr>
<td>First Hop</td>
<td>Reitek</td>
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<tr>
<td>HP</td>
<td>Reply</td>
</tr>
<tr>
<td>IBM</td>
<td>Sybase 365</td>
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<tr>
<td>LogicaCMG/Acision</td>
<td>Txt Polymedia</td>
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<tr>
<td>Mblox</td>
<td>Xiam Technologies</td>
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A multiple case study approach reinforced the generalization of results (Meredith, 1998), and allowed to perform a cross analysis on platform characteristics and their combinations – to see which variables changed and which remained constant –, due to
the presence of extreme cases, polar types or niche situations within the theoretical sample (Meredith, 1998).

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), multiple sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings –. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

III. The MMTP Strategic Analysis Reference Model

The development of the original MMTP strategic analysis reference framework follows three main steps.
At first, taking from a wide literature analysis and the case studies performed, an integrated external and internal strategic analysis is carried out, to identify the CSDP market’s opportunities and threats, as well as the core resources and competencies to leverage on so to create competitive differentials.

The second step requests the identification of noteworthy strategic dimensions or classification variables, drawn from the empirical case studies performed, whose relevance was determined by the impact on the companies’ positioning and business model. Such strategic dimensions are further crossed to create a system of classification matrices, capable of portraying the existing relative positioning of the analyzed companies.

The third and last step rests in performing a scenario analysis, in order to address the medium-term evolutionary trends in the strategic positioning and the business models adopted.

**A. Strategic External Analysis on the CSDP market**

According to the “Positioning School” approach (Mintzberg et al., 1998), a firm’s performances are strongly influenced by the market’s structure, in turn affected by the interaction of the competitive forces acting within it (Porter, 1980). However, competition cannot be narrowly defined, yet it goes beyond established industry rivals to include four other competitive forces as well: bargaining power of customers, bargaining power of suppliers, threat of potential entrants, and threat of substitute products or services (2008). It is then the intensity and the interplay of these forces to drive an industry’s profit up or down.

Therefore, to understand and assess the market returns issue, thus gaining a valuable insight on the market’s attractiveness, the renown “Five Forces” model will be applied and integrated in the overall framework of analysis.

As the initial, mandatory step of the external strategy analysis, a definition of the market under scrutiny shall be provided: the analysis focuses on the Content & Services Delivery Platforms market, a segment of the wider market related to Telecom’s Service Layer (Barnes, 2002) (Maitland et al., 2002) (Sabat, 2002).
The model’s application allowed to notice an internal competition of medium intensity, tempered by: the market’s high rates of growth (ABI, 2006) (ABI, 2007); the competitors’ heterogeneity; the platforms offer differentiability; and the relatively low exit barriers, due to the key assets reconversion. The new entrants threat is quite high, especially with reference to players coming from neighboring business areas within the ICT industry, because of the medium entry barriers and the low risk of coordinated retaliation by the incumbents. The threat related to the existing substitutive products, e.g. the Media Platforms and, to some extent, the generic Enterprise IT Platforms, will not constrain the diffusion of ad hoc CSDPs for managing mobile digital content. The suppliers bargaining power is low, while customers enjoy a significant power in the case of MNOs, and a medium power in the case of MCSPs. In the light of the previous consideration, the CSDP market is characterized by moderate to high attractiveness.

B. Strategic Internal Analysis: the MMTPs core resources & competencies

To integrate the previous external analysis, an internal strategic analysis was performed, with the purpose of individuating the core resources and competencies (R&C) a MMTP relies on to create a solid and sustainable competitive advantage (Barney, 1991) (Hamel and Prahalad, 1990).

As the existing literature does not define the set of key assets and know how for Technology Providers, the literature gap is filled through the case studies carried out. The R&C portfolio, whose identification took into consideration the “five tests” – inimitability, durability, appropriation, substitutability and competitive superiority – capable of discriminating from generic to critical assets and know how (Collis and Montgomery, 1995), is divided into two main categories: Platform Technology and Content Management.

Table II. MMTPS resources and competencies portfolio

<table>
<thead>
<tr>
<th>Category</th>
<th>Resources</th>
<th>Competencies</th>
</tr>
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The internal analysis will support the assessment of the different positioning and business models adopted by the competitors.

C. The Strategic Clustering of MMTPs

Taking into consideration the combined external and internal analysis performed, as well as the information and data collected through the multiple case studies carried out, the second major step in the model consists in the creation of a system of noteworthy “strategic classification matrices”, based on the crossing of significant classification variables identified through the literature analysis, as well as the case studies: such matrices allow to obtain a strategic clustering of the MMTP comprised in the sample of analysis, thus indentifying the main business model configurations currently adopted. The rationale followed to judge a dimension’s significance was its impact on the company’s strategic positioning and business model employed. The first classification variable identified concerns the actors’ value proposition: according to the key functionalities offered, it was possible to identify 5 distinct CSDP categories, characterized by different purposes (Ghezzi et al., 2009):

1. Content Creation Platforms, prevalently related to the activities of concept, development and production of the digital content or service. They offer tools
for service creation, workflow management, service testing, as well as for aggregation of internally produced and third parties uploaded content.

2. Content Management Platforms, mainly covering the activities spanning from content publishing to content delivery, offering several functionalities: content storage, publishing, aggregation, filtering, retirement; metadata management; digital rights and intellectual propriety rights management; content adaptation; authentication and access control; user & device profiles management; over-the-air configuration; third parties relationship management.

3. Business Management Platforms, meant to handle digital content in a wider business perspective, ensuring the integration between the specific VAS business and legacy systems – e.g. BSS/OSS, database and data warehouse, Customer Relationship Management, Enterprise Resource Planning, billing & accounting system. The key functionalities are related to service orchestration, reporting, portfolio and campaigns management, subscribers management.

4. Transactional Platforms, interconnected to MNOs’ systems, and supporting the activities related to the so called “CBA process”: content charging, content billing, and revenues accounting among the involved parties. These MCSDPs commonly possess some functionalities of SMS/MMS/WAP-based service delivery.

5. Transversal Platforms, showing cross coverage of modules and functionalities, that makes it difficult to identify a prevalent purpose, thus making them multi-purpose platforms.

The following figure shows the symbols employed in the overall technology provisioning matrices to identify each platform category.
The first matrix presented crosses two classification variables. “Additional Services Delivered” details the services integrated with the platform, that can assume the following values:

- Technology Management of a CSDP operations;
- Contractual Support, to enable the establishment of agreements with third parties
  - Content Providers (CPs) for content provisioning or MNOs for interconnections;
- Commercial Management of the content published on the platform.

Platform Provisioning Modality describes the way the CSDP is supplied to the MTTP customer. Three main choices are available:

- Selling;
- Hosting, where the MMTP keeps the platform in house and delivers it in Application Service Provisioning (ASP);
- Outsourcing, implying a platform installation within the customer’s business, with an overall management on the supplier’s side.

The first mapping gives rise to 5 different clusters or combinations of the 2 noteworthy variables.
Analyzing the matrix as a whole, the mere technology management of the platform emerges as the most popular alternative – followed by 17 companies out of 24 –: such finding testifies the large majority of MMTPs with pure technological background are prone to maintain their core business on technical activities. The contractual support alternative and the commercial management of mobile digital content, followed respectively by 4 and 3 firms, still represent a niche solution, though showing an interesting trend of extension of the traditional business scope characterizing MMTPs.

Figure 3. Additional Services Delivered / Platform Provisioning Modality matrix.

The second strategic clustering matrix aims at classifying the players in terms of their orientation towards platform technology or content management resources and competencies – starting from the consideration that such dimension of analysis heavily influences the current business model adopted, as well as the strategic options at hand –.
Through the matrix, 2 main typologies emerge:

1. Technology-oriented players – 8 companies out of 24 –, focusing their competitive strategy on the development of R&C related to CSDP design, manufacturing and installation, with no specific investment in the field of content management.

2. Service-oriented players – 16 companies out of 24 –, looking for the best trade-off between content management and platform technology R&C. These companies possess the highest inner potential, as they own a store of assets capable of enabling the provisioning of an end-to-end both technical and commercial service with reference to mobile rich media content.

The strategic map shows an evident gap in the “high content management R&C” – “low platform technology” quadrant, that could be explained with the unavoidability of
platform technology assets and know how for a MMTP, that can hardly configure itself as a pure content oriented firm: such positioning is currently taken on by MCSPs. Considering that, recently, the CSDP market segment saw the entry of many players coming from neighboring markets, a further relevant dimension of analysis to be taken into account is the “Business Area of origin”, so to understand how such factor affects the companies’ business models and the way they compete. The third strategic clustering matrix crosses the player typologies identified in terms of R&C they possess with 5 main business areas to which the analyzed players belonged: Mobile Content; Network Equipment; IT Platforms; System Integration and Software Engineering.

![Figure 5. Core Resources & Competencies / BA of Origin matrix.](image)

The map allows to identify 7 distinct clusters. Mobile Content players are concentrated in cluster VII, showing a clear tendency towards service-oriented R&C. The competitors originally related to Software Engineering are almost equally split between
technology-oriented – cluster V – and service-oriented R&C – cluster 6 –: the clusters are the most populated, testifying the closeness between this business and the one of CSDP development. The collocation of IT Platform Providers is definitely unbalanced towards technology R&C – cluster I and II –, confirming that such players decided to penetrate the market so to take advantage of contingent opportunities, adapting their offer of generic platforms without developing specific competencies. On the contrary, it is interesting to notice that the few Network Equipment Vendors – cluster III – and System Integrators – cluster IV – are showing a significant attention towards “soft” elements, far from their core business related to network infrastructure, building up a R&C portfolio also dedicated to content management.

Given the previously described strategic classification variables and the resulting matrices, the final strategic clustering allows to identify a taxonomy of the main business models currently adopted by MMTPs. The “Business Model” matrix is created by crossing two significant variables: the player typology in terms of R&C possessed, influencing the positioning and competitive potential; and the additional services delivered, detailing the typology of complementary services offered and so making explicit the value proposition and the tendency towards extending the traditional prerogatives proper of the platform management process, thus embracing commercial aspects.
Figure 6. Business Model matrix.

Through the strategic clustering, 4 distinct business models emerge:

1. **Pure Play Technology Providers.** The model is adopted by technology-oriented firms proposing a mere technical management of platforms. It is named “pure play” since a full coherence between R&C developed and platform management emerges, and the alignment between internal resources and external positioning perfectly falls back on the technological dimension. The cluster is populated by 8 companies, coming either from the Software Engineering market – e.g. First Hop, Microsoft, Neodata – or the IT Platform market – like IBM and Nec. These players opted for such solution in order to maintain their focus on their traditional core, to stay away from any conflict with their current and potential customers – mainly MCSPs –, and to avoid being forced to internally develop a new set of R&C related to the market making of digital content.

2. **Full Asset Technology Providers.** The model is employed by service-oriented players who, though having a rich R&C portfolio at hand, limit their offer to the
CSDP technology management, adopting a “wait and see” strategy on the content commercialization front. The width and depth of their resources and competencies, however, makes them high competitive potential players, and creates the conditions for a future expansion of their scope. Companies like Alcatel-Lucent, Bea Systems, Dylogic, HP, Logica CMG/Acision, Reitek and Reply belong to this cluster.

3. Third Party Relationship-focused Technology Providers. These service-oriented companies have enhanced their value proposition offering contractual support services for establishing agreements with their customers’ third parties – MNOs or CPs –. Examples of companies adopting such positioning are Ericsson, Mblox, Qualcomm and Sybase 365.

4. Platform & Content Management Technology Providers. The cluster is populated by a few service-oriented players – specifically, Comverse, Nokia-Siemens Networks and Txt Polymedia – that decided to extend their business to the embracement of the a true commercial management of content. Such innovative and atypical positioning is adopted by players with technical background that showed a remarkable openness towards and end-to-end applications and services management for their customers.

As a whole, the map shows how the large majority of the interviewed companies – 17 on 24 – are still focused on the technology management of the platform, and today do not pose a real threat to MCSPs for content management. However, the presence of innovative positioning related to contractual support and overall platform and content management, as well as the generalized tendency of creating a rich portfolio of R&C – 16 players are defined as service-oriented – could determine unexpected trends in the near future of the market.

D. Scenario Analysis: future trends in business models evolutions

In order to integrate the “static” strategic clustering, a scenario analysis aimed at dynamically evaluate the possible business models evolutions in the short-medium term was performed.
The findings show that, though many clusters are inclined to look for a business extension – through the increase in the range of additional services provided – or a R&C portfolio enhancement, only few players are actually moving along both dimensions, seeking a different competitive positioning – expressed by the business model employed. Specifically, some Pure Play TPs will shift to the cluster of Full Asset TPs, enriching their resources and competencies.

Unexpectedly, in the time interval under consideration, no significant trends taking the Full Asset TPs towards more innovative models are foreseen: these companies appear to be willing to leave their competitive potential unexpressed, under banner of their “wait and see” strategy.

Concerning Platform & Content Management players, quite diverse movements are registered, related to different underlying motivations and approaches towards the
downstream activities of content’ market making: Comverse seized a contingent opportunity offered by Vodafone to manage the market making of the operator’s ringbacktones service, and will most likely maintain this position with no further investments; Txt Polymedia, thanks to the close relationship with the Italian Media Company Mediaset, will work on extending its R&C portfolio related to content management; Nokia will explore an extension on both R&C and products/services, aiming at positioning itself not only as a Device Manufacturer and a Platform vendor, but also as a Content Provider and Aggregator.

IV. Conclusions and future works

The present study provides an original reference model for supporting the strategic analysis of Mobile Middleware Technology Providers. The framework is created through a research methodology integrating multiple case studies and a significant literature analysis.

The external strategic analysis allowed to conclude that the market for CSDPs is characterized by a medium to high attractiveness, while through the internal analysis the core resources and competencies for a MMTP were identified, and further divided in “Platform Technology” and “Content Management” categories.

The strategic clustering matrices led to the identification of 4 key business models currently adopted by MMTPs – “Pure Play”, “Full Asset”, “Third Parties Relationship-focused” and “Platform & Content Management” –, and the final scenario analysis drove to the conclusion that MMTPs will not pose a real threat to MCSPs business in the short-medium term, though a generalized trend of enhancing content-oriented resources and assets was noticed.

The paper’s value for researchers, on an industry-specific level, can be brought back to the creation of a reference framework capable of addressing the emergent phenomenon related to the rise of middleware platform providers within the Mobile Content market.

The study also offers an original contribution to Strategic Management as a research field: the framework proposed rests on the integration of an external and internal strategy analysis based on the Positioning School and the Resource Based View, respectively; and the model employs and typical internal analysis concept – the core resources and competencies endowment – with strategic positioning purposes – as a variable to interpret the competitive positioning of the actors under scrutiny –.
The value for practitioners lies in the provisioning of a valuable tool supporting a wide set of stakeholders – both incumbent and new entrants – in their decision making process and in the strategic interpretation of the competitive arena, allowing the identification of analogies and differences between different strategic clusters, as well as between different players within the same cluster.

The research represent a first attempt of defining the business models designed by Mobile Middleware Technology Providers. However, it does not analyze the potential different performances coming from alternative business models adopted. Future works will have to concentrate on the provided framework’s validation, as well as on the identification of a specific link between business models and achievable performances.

References


PART 7

A reference model for Analyzing Mobile Network Operators’ Strategic Positioning
Abstract
The revolutionary changes the Mobile Telecommunications Industries is going through are forcing the Mobile Network Operators (MNOs) to radically reshape their strategies, according to the newly emerged market’s value drivers. The purpose of this study is to provide an original reference model for supporting the analysis of MNOs’ strategic positioning. Employing the multiple exploratory case studies research methodology, the study identifies five dimensions or classification variables - Content creation & innovation management, Mobile Advertising integration, Communities and Social Networking focus, Charging & billing systems leverage and Network infrastructure management – through which describing and assessing an MNO’s strategic positioning; consequently the model is applied to the four Italian operators, so to obtain a validation as well as a picture of the adopted strategic positioning. The findings show two alternative and quite contradictory “strategic extremes” the operators are swinging between seem to be emerging: the Pure Carrier positioning, and the Media Company positioning. In between, the Smart Pipe positioning sees the operator making the most out of its assets, gaining the role of the third parties’ offer enabler.

Keywords: Mobile Telecommunications, Mobile Network Operators, Strategy, Reference Model, Multiple Case Studies

1 Introduction

After many years of unquestioned market leadership in the Mobile Telecommunications industry, mainly due to the possession of inimitable assets and to the unique relationship established with the end customer, the Mobile Network Operators (MNOs) are currently finding themselves in the midst of a period of turbulent market transition, where the different interacting dimensions of uncertainty make an accurate prediction of the environment’s development virtually impossible (Courtney et al., 1997).

The decline of voice services revenues (Muller-Veerse, 1999; Arthur D. Little, 2001;), the refocus on the Mobile Content segment, the crisis of the traditional “walled garden”
approach that drove to an higher openness to off portal, the rise of third parties with the need of developing appropriate agreements and revenue sharing models (Maitland et all., 2002; Olla, Patel, 2002; Kuo, You, 2006; Peppard, Rylander, 2006), and the imminent revolution determined by the clash with the Internet industry are only some of the challenges the operators are now forced to face. Therefore, in the short run, the key issue for MNOs will definitely be the structural rethink of their strategies and business approaches. When confronting this strategic priority, however, MNOs appear to be lacking a clear direction, and the strategies they are adopting are far from being unambiguous. Though initially all operators showed a strong interested in shifting from the “must carry” to the “must offer” paradigm – the first seeing the availability of the network infrastructure as the core asset and source of competitive advantage, while the second recognizing the role of the multimedia content and services portfolio provisioned as the true market essential facility, recently this trend seems to be inverted, and some players are starting to consider the option of withdrawing from the downstream activities of the chain to refocus on the core business, that is, the activities related to network provisioning. Given this gradual departure from the initial generalized approach, it becomes increasingly important to identify which are the main strategic positioning alternatives the MNOs can now adopt, as well as which core assets they will have to leverage on to succeed in the unsettled Mobile Value Network. Nevertheless, the undergoing radical internal and external changes make it more and more difficult to understand which drivers or classification variables will allow to discriminate from one strategic positioning to another. In the light of the portrayed situation, the purpose of this paper is to develop a model capable of supporting the strategic positioning analysis of Mobile Network Operators: through the definition of a set of relevant “strategic dimensions”, whose combination gives rise to a specific strategic positioning, the model will allow to infer how the operators are reshaping their business configuration, and what solutions are currently adopting. The study, focused on the MNOs operating in the Italian Mobile Telecommunications market, is structure as follows: at first, the research methodology employed will be analyzed; afterwards, the original MNOs’ strategic positioning reference model developed will be presented, and consequently applied to the four Italian MNOs; as a
conclusion, the study’s key implications will be discussed, and some indications for future works will be provided.

2 Research Methodology

The present research is based on case studies, defined by Yin (2003) as “empirical inquiries that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”.

Qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomenon of strategic positioning within a given industry – i.e. Mobile Telecommunications – and with reference to a specific typology of players – MNOs, and thus at building new theory – or extending existing theories – on it.

To accomplish the previously identified research propositions, from January to June, 2008, in-depth exploratory case studies on the 4 companies possessing a license for acting as a Mobile Network Operator in Italy – TIM, Vodafone Italy, 3 Italy and Wind – were performed. In addition to this, so to obtain a better insight concerning MNOs’ strategies and positioning, the 4 case studies, made of 16 interviews, were integrated by information collected through a further set of 90 case studies on “third party” firms involved in business activities with the previously identified operators. These additional case studies, performed in the same period of time, were carried out within the wider 2008 Mobile Content Observatory research (Bertelè et all., 2008). As a whole, 138 interviews – both face-to-face and phone interviews – were held with 110 persons identified as key participants in the MNOs’ strategy definition process at different levels, as well as informants belonging to third party firms. The population of informants included top and middle managers – e.g. Presidents Chief Executive Officers, Chief Information Officers, Chief Financial Officers, Marketing & Sales Managers, Project Manager, Software Engineers and Developers. The semi-structured nature of the questionnaire made possible to start from some key issues identified through the literature, but also to let innovative issues emerge.

The choice of focusing the research on the Italian Mobile Telecommunications context is justified by its very characteristics: on the one hand, the market is extremely mature
(Informa Telecoms & Media, 2008), but on the other it has always been positioned at the forefront in industry innovation at a global level (Bertelè et al., 2008).

Coherently to the research methodology employed (Pettigrew, 1988), firms were not randomly selected, but the theoretical sample was made of firms that conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data analysis.

A multiple case study approach reinforced the generalizability of results (Meredith, 1998), and allowed to perform a cross analysis on the variables under scrutiny, to pinpoint differentials in terms of strategic positioning – to see which variables changed and which remained constant going from one alternative to another, due to the presence of extreme cases, polar types or niche situations within the theoretical sample (Meredith, 1998).

Since the research needed to focus to different subunits of analysis, the embedded (i.e. multiple unit of analysis) case studies was adopted. The scheme of analysis developed included the following main units of analysis:

- company profile;
- business model components;
- products and services performances;
- value network positioning;
- strategy developed.

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), multiple sources of evidences or research methods were employed: interviews – to be considered the primary data source, analysis of internal documents, study of secondary sources – research reports, websites, newsletters, white papers, databases, international conferences proceedings. This combination of sources allowed to obtain “data triangulation”, essential for assuring rigorous results in qualitative research (Bonoma, 1985).

3 The strategic positioning analysis reference model

The research carried out through the multiple case studies allowed to shed light on the key dimensions or classification variables that make it possible to discriminate from
different strategic positioning alternatives, thus making inferences on the main configurations the Italian MNOs are adopting.

The findings are synthesized in the “MNO strategic positioning reference model” below provided, which identifies five macro-dimensions:

1. *Content creation & innovation management*: it expresses the operator’s presidium of the upstream activities related to content creation, aggregation and publishing, as well as the overall process of content & services portfolio innovation, typically performed by third parties – Content Providers (CP) or Mobile Content & Service Providers (MCSP). A high level of involvement in the control and management of third parties’ offers published “on deck”, i.e. on the operator’s mobile portal, indicates that concentrating in the Mobile Content segment represent a strategic priority for the MNO.

2. *Mobile Advertising integration*: it refers to the integration of Mobile Advertising within the operator’s overall business model. An high diffusion of Advertising-based models promoted by the operator expresses its vocation to act as a “Media Agency”, consequently extending its core business towards neighboring and complementary areas.

3. *Communities and Social Networking focus*: it expresses the operator’s approach towards Social Networking and Community value added services. Such services clearly represent the new differentiation driver of the Mobile Content offer, the only element capable of increasing the end customer’s “stickiness”. Thanks to the concept of interaction Social Networking relies on, which constitutes the true value of mobile communications, this service category shall become the package all other services like Infotainment, Mobile Games, Music and Video, are bundled in: by placing the content in the middle of users interactions, the operator can exploit all the offer portfolio synergies at his hand, thus creating a unique user experience. Therefore, the choices related to the role the MNO decides to take on regarding Social Networking – also with reference to the possibility of integration with the Web Instant Messaging communities – will strongly affects its positioning, reflecting its resolution of either actively covering the downstream activities of the Mobile Content value network, or to relegate itself to data traffic transferring. In fact, should the operator give up the control of Social Networking, and grant its customer base an access to the Internet Instant Messaging communities, it would attract a large number of potentially new users, benefiting from revenues from data
traffic; on the other side of the coin, however, it would risk to cannibalize its traditional messaging services – like Sms and Mms, losing the related sources of revenues.

4. Charging & billing systems leverage: it concerns the exploitation of the operator’s charging and billing proprietary systems and the provision of such core asset to third parties, to enable the mobile transactions between them and the end users. Being the operator the only actor within the Value Network qualified to charge and consequently bill the content and services cost to the end users’ credit, third parties’ offer shall inescapably pass through the establishment of an agreement with the MNO to rely on its unique systems. The higher the leverage on this asset, and the wider the number of partners with a granted access to these system, the more open the operator towards third parties: in such scenario, the MNO is configured as a facilitator and enabler of other player’s business.

5. Network infrastructure management: it indicates the extent to which an operator focuses on the provisioning of network infrastructure functionalities to third parties, like interconnection, connectivity, data transfer and network operations management. An high rank on the network infrastructure management dimension shows the MNO’s willingness to concentrate on the role of “bit pipe” provider.

While variables 4 and 5 are mentioned in literature – for instance, see Kuo, Yu (2006) and Peppard, Rylander (2006), the other three are originally identified through the case studies, thus representing an extension to existing theory.
The original “MNO Strategic Positioning Pentagon” model shows the combined coverage of the five dimensions, drawing a perimeter that delimitates the current MNO’s business scope.

Different combinations of the previously identified dimensions can give rise to three main strategic positioning an MNO could adopt:

1. the Media Company positioning;
2. the Pure Carrier positioning;
3. the Smart Pipe positioning

The Media Company positioning sees the MNO strongly involved in the end-to-end activities related to the creation, management and delivery of mobile digital content. The operator exerts a strong control on the content published on the mobile portal and on the related revenues, typically establishing revenue sharing models where limited margins are paid off to third parties. At the same time, the MNO is interested in acquiring a significant share of the revenues related to Mobile Advertising, and tries to operate as a Media Agency as well.
Therefore, an operator positioned as a Media Company will be characterized by an unbalance towards “Content creation and innovation management” and “Mobile Advertising integration”.

The Pure Carrier positioning, on the contrary, is based on the refocus on the original core business, that is, the activities related to the network infrastructure and the provisioning of its functionalities – e.g. interconnection, access, connectivity, bandwidth. The logic underlying such reorientation, similar to the trend that took place in the Internet market involving the Internet Service Providers, is that the MNO has gone too far in extending its reach on the value network activities, abandoning its core and entering new areas it does not have the right resources and competences to cover. Therefore, by giving up the direct control of some downstream activities, by granting access to its customer base to new entrants – like the Web Companies – and by concentrating on data transfer, the MNO would significantly increase the network’s traffic, benefiting from higher revenues from network provisioning. The risk related to this option is to experience a depletion of the operator’s role: after having undertaken heavy investment to install the infrastructure and acquire 3G licenses, it would not be able to retain an adequate share of the revenues it is enabling.

Within the model, this positioning is expressed by the prevalence of “Network Infrastructure management” and, to some extent, of “Charging & billing systems leverage” dimensions over the others.

In between these two “strategic extremes”, a continuum of alternative solutions are available. The most significant that is worth mentioning is the emerging Smart Pipe strategic positioning.

In such configuration, the MNO leverages on the overall range of its core assets, i.e. the network infrastructure, the 3G licenses, the charging & billing systems, the proprietary distribution channels, the strong brand awareness, the direct access and deep knowledge of its customer base – in terms of users profiles and behavior – to propose a portfolio of enabling and facilitating business services to the market’s third parties – e.g. MCSPs, CPs, Advertisers. Therefore, the MNO takes on the role of enabler and facilitator of its partners’ offer: on the one hand, withdrawing from some downstream activities more related to the market making of content and services; but on the other, enhancing its undercurrent position of foundation of the whole value system.

The “Smart Pipe” concept stresses the fairly new combination of a “bit pipe” role, where the MNO mainly acts as a carrier, with a more far-seeing thorough management
of its assets. According to this vision, the network, from being the operators’ core business, becomes “core to their business” (Nordmann, 2006).

The revenues streams the operator benefits from are mainly related to data transfer, charging & billing fees, advertising fees and a further fee for the provision of data and information concerning the end user – track history, profiles and preferences, usage data etc.

A Smart Pipe positioning is characterized by a focus on the Charging & billing systems leverage and the integration of Mobile Advertising modes, as well as by a heavy control over Social Networking, seen as the “umbrella service” under which all others are bundled.

After having described the original model’s constitutive variables, in the next section it will be applied to the four Italian MNOs, so to test the framework validity and get a valuable insight on the actual “state of the art” concerning the operators’ strategic positioning.

4 The Model application to the Italian MNOs

The application of the model to the 4 Italian MNOs allows to gain a significant insight on the main strategic positioning alternatives these actors are currently adopting, as well as to obtain a first model validation.

According to the both qualitative and quantitative information collected through the case studies, an Interval or “Likert-like” scale was employed to evaluate the coverage of each dimension: a 0 to 5 ranking was then associated by the authors to each classification variable for every MNO. The rationale followed implies that the higher the ranking on a given variable is, the more the operator focuses on such dimension in shaping its strategic positioning.

The operator Wind seems prone to adopt a Pure Carrier positioning: its recent investments are mainly directed towards the enhancement of the network infrastructure management, as well as towards the proper leverage on charging & billing.
The i-mode business model adopted – licensed from the Japanese operator NTT DoCoMo – and the related revenue sharing agreements, characterized by high shares granted to content and service providers, leave wide discretion to third parties, without a strict control over their activity; the access to the operator’s billing platforms is also granted with little constraint to a plethora of partners.

The MNO focuses its Mobile Content offer on Infotainment browsing rather than innovative and multimedia services; moreover, the integration of Mobile Advertising is only at an embryonic stage.

The operator Vodafone Italy appears to be moving towards the renewal of its role, through a significant trend of openness to third parties – a survey performed within the research showed that the number of content providers on “hybrid” or “friendly off-net” mobile sites, i.e. partners’ external sites with a link on the operator’s portal, was characterized by an annual growth rate of 400% from 2007 to 2008; at the same time, a new pricing policy eliminating the navigation costs for the users on hybrid sites was introduced, paralleled by a strengthened control over the key assets of Social Networking services – reflected by the acquisition of the Web 2.0-oriented company Zyb, and the launch of the mobile social network platform “Vodafone Friends” – and of

Figure 2: Wind Strategic Positioning.
charging and billing systems. In addition to this, a strong effort has been put on the development of Mobile Advertising.

In the light of these consideration, it is possible to claim that the MNO is currently positioned as a Smart Pipe.

![Diagram](image_url)

**Figure 3: Vodafone Italy Strategic Positioning.**

Concerning the operator 3 Italy, last entrant in the market, the model confirms its effort in positioning itself as a Media Company, because of the high innovation of the services offered – also confirmed by the significant investments in Mobile TV and on the DVB-H standard, and the heavy reliance on Advertising-based models, counterbalanced by some limitations and criticalities in the network-related performances.
As regards to TIM, the market leader in terms of customer base, what emerges from the model’s application is a “fuzzy” positioning, laying between the Media Company and the Smart Pipe solutions. In fact, on the one hand the operator has a strong focus on the network infrastructure and the charging & billing platform assets – inherited by its mother company, the ex-monopolist for fixed telephony Telecom Italia; on the other, however, it shows a remarkable interest in developing Social Networking services – a vivid example of this approach is represented by the “TIM Tribe”, as well as Mobile Advertising models. The control of content published on portal is also high.
As a whole, it is possible to argue that the strategic positioning alternatives emerging through the model’s application are significantly diverse. To tackle the “wind of change” blowing on the Mobile Industry, the players seem to be taking different directions, trying to exploit the current market’s fluidity to reposition themselves and lay the foundations for future sustainable competitive advantages over the competitors, both incumbents and new entrants.

It is hard to predict which model will prevail in the medium-long run: however, as soon as the market situation will consolidate, and as the positioning adopted will crystallize, the choices made today will strongly impact on the operators’ performances and chances of success.

5 Conclusions and future works
The research provides an original reference model for supporting the strategic positioning analysis of Mobile Network Operators. The findings show that the analysis of the reshaped operators’ positioning goes through the definition of new key strategic dimensions.
In fact, the model identifies an original set of 5 variables – Content creation & innovation management, Mobile Advertising integration, Communities and Social Networking focus, Charging & billing systems leverage and Network infrastructure management, where the first three are newly defined and were inferred from the case studies performed.

Concerning the variables combinations, two alternative and quite contradictory “strategic extremes” the operators are swinging between seem to be emerging: the Pure Carrier positioning, and the Media Company positioning. In between, the Smart Pipe positioning sees the operator making the most out of its assets, gaining the role of the third parties’ offer enabler.

The rigor of the qualitative research method employed and the theoretical sample’s significance grant, reliability and, to some extent, the generalizability of the model’s results. The number of case studies, and the fact that the model’s variables are drawn from a wide sample of cases, while the model is then applied only to a subset of the analyzed firms – that is, the 4 MNOs, also contribute in limiting the issue of tautological validity the model may be burdened with.

The paper’s value for researchers can be brought back to the extension of Strategic Analysis theories with reference to the Mobile Telecommunications Industry, thanks to the creation of a model capable of identifying newly emerged strategic dimensions and positioning alternatives.

The value for practitioners lies in the provisioning of a tool for mapping existing and future strategic positioning adopted by MNOs, thus gaining a valuable insight on these player’s moves, as well as on the market’s competitive configuration.

The paper represent a noteworthy attempt of developing an ad hoc model for supporting strategic analysis on the Mobile Industry. However, it does not shed light on the different performances acquirable through the adoption of a given positioning. Future works will have to concentrate on making the relation between positioning and performances explicit, and on carrying out a benchmarking analysis of the different alternatives available.

In addition to this, concerning methodological soundness, the model shall be applied to a different sample of MNOs, in order to test its validity outside the first sample which originated it, so to solve the issue of tautological validity.

References


PART 8

A resource-based framework to assess discontinuities in the distribution paradigm and their effect on incumbents’ strategies: the case of Mobile Network Operators and Application Stores
2.8 A RESOURCE-BASED FRAMEWORK TO ASSESS DISCONTINUITIES IN THE DISTRIBUTION PARADIGM AND THEIR EFFECT ON INCUMBENTS’ STRATEGIES: THE CASE OF MOBILE NETWORK OPERATORS AND APPLICATION STORES

Abstract

The discontinuity determined by a shift in the distribution paradigm in place has deep strategic implications, with specific reference to the resources, competencies and capabilities firms leverage on to achieve competitive advantage.

Taking stock of a wide literature review on Strategic Management’s Resource-based View and Dynamic Capabilities Approach to ground and test the definition of “core” resources, competencies and capabilities, and adopting multiple case studies on an extensive set of relevant companies as the empirical research method, the present study analyzes the upfront issue related to the rise of the Mobile Application Store model as a substitute to the original Mobile Portal model from the incumbent Mobile Network Operators perspective, and proposes a resource-based framework to address the issue of how a distribution paradigm change can affect a firm’s resources endowment.

The original framework is built on three main steps, encompassing: identification and categorization of resources, competences and capabilities before and after the discontinuity takes place; application of literature-derived tests to assess the actual core status of traditional and emerging resources; and provisioning of strategic guidelines to support the management of the resources portfolio, as reclassified according to the discontinuity outcomes.

The framework can have both a methodological, a descriptive and a normative value. In addition to its academic significance, its adoption as an internal strategy analysis tool can benefit a wide set of stakeholders facing critical discontinuity conditions on the distribution side.

Keywords: Distribution paradigm shift; Resource-based View; Dynamic Capabilities Approach; Mobile Application Store; Mobile Communications.

1. Introduction

A swift change in the distribution paradigm in place can shake the very foundations of a market’s structural and strategic environment. In different stages of history, advancements and innovations in the way goods and services were delivered from
sellers to buyers, in how these actors were related and in the kind of technologies, systems or channels deployed to enable such linkage have heavily affected a business’ value creation and value capture drivers [1]. In a recent past, the dramatic change brought in by the adoption of Internet as a distribution channel and the subsequent rise of e-commerce contributed to radically reshape the market structure and competitive landscape in many industries [2][3][4].

When a paradigm shift of such magnitude takes place, questions are raised concerning the actual achievability and sustainability of competitive advantage – i.e. a continuative superior profitability if compared to competitors [5] – determined by new technological paradigms, and regarding the chance of sustaining a first mover’s advantage based purely on technology [2][6][7][8]. As argued in several studies, technology alone is more of a “strategic necessity” [6], an “hygienic competitive factor” essential for survival, yet not supporting the creation of a defendable advantage [8]. Gaining competitive advantage requires an effective integration of such distribution paradigm within the overall strategic vision [9]. Moreover, a widely accepted standpoint in Strategic Management holds that creating a sustainable advantage based on information technology requires to complementary leverage on unique resources that cannot be easily replicated or leapfrogged by potential competitors [6] [10], or to develop the capability to pursue continuous innovation [11][12]. First or early entry alone cannot become the source of a true advantage, unless it is related to a firm’s existing core assets and industry dynamics [7][13][14].

These considerations reveal the importance to assess the resources, competences and capabilities endowment a firm relies on to compete – e.g. brand; specific industry expertise; market essential facilities; customer base and control of customer point of contact; ability to deal with certain organizational or system complexity; and so forth [2] – when confronting the strategic challenges determined by a distribution paradigm change, analyzing how such endowment is influenced and potentially reshaped by the emerging technology and business dynamics.

Much has been said about the virtualization of the physical enterprise through the Internet. However, a less evident but equally intriguing case of battle for dominance in the service distribution model is currently taking place: it involves the Mobile Content market, i.e. the market for mobile non-voice digital content and services, where the traditional Mobile Network Operator-centred “Mobile Portal” model is challenged by an emerging alternative system, the so-called “Mobile Application Store” model, initially
introduced by a newcomer but quickly adopted by incumbent players – included, paradoxically, the Operators themselves –. Such case provides a fresh and clearly delimited context for empirical research and testing on distribution paradigm change’s effects on resource endowment, so as to revisit a significant issue from a strategic point of observation.

This paper aims at addressing the issue of how the introduction of a new distribution paradigm, alternative to the dominant one and enabled by innovative technologies and systems, affects a market’s core resources, competences and capabilities (R&C&C) grounding competitive advantage. The “Mobile Application Store” case constitutes a recent, under-investigated and noteworthy real example, which allows to make both industry-wise and more general strategy-wise inferences.

Taking the perspective of the dominant actor or focal firm within the value network – i.e. the MNO – [15] [16], the study addresses the issue of core resources shift – the “dependent variables” – determined by a variation in distribution – the “independent variable” –, analyzing and assessing: what resources, assets and competences remain core notwithstanding the paradigm change; what are not any more vital; what core R&C&C emerge due to the new paradigm; and what are the main strategic implications for the variation pinpointed.

The decision to focus the study on the Mobile Telecommunications context is also justified by the significance of the players involved: Mobile Network Operators, Device Manufacturers, Web and Media Companies and Software Developers are listed companies with a global reach, characterized by top-ranked market capitalization values (e.g., see [17]).

Taking stock of a wide literature review on Strategic Management’s Resource-based View and Dynamic Capabilities Approach to found and test the definition of “core” R&C&C, and leveraging on multiple case studies as an empirical research method, the paper pictures and compares the traditional Mobile Portal model and the Application Store “anomaly”, and proposes a dynamic framework to guide the R&C&C change assessment. The framework can have both a methodological, a descriptive and a normative value. In addition to its academic significance, its adoption as an internal strategy analysis tool, if properly adapted, can benefit a wide set of stakeholders facing critical discontinuity conditions on the distribution side.

2. Strategic management background on resources, competencies and capabilities
The fundamental question driving the field of Strategic Management is why different firms obtain different performances, and how firms achieve and sustain competitive advantage. To answer such core question, several approaches towards Strategic Management as a discipline emerged [18]: this literature review focuses on two different research schools risen in the late ’80s and throughout the ’90s, the Resource-Based View (RBV), and the Dynamic Capabilities Approach (DCA). Contrarily to the so called “Positioning school”, inaugurated by Michael Porter’s [19] breakthrough work on competitive strategy, which focused on Industry-related competition, Resource-based view and Dynamic Capabilities Approach took a new, inward perspective when analyzing a firm and its ability to achieving superior performances than its competitors, claiming that the sources of competitive advantage ultimately come from the firm’s endowment of internal core resources, competences, assets and capabilities.

The RBV attempted to overcome the Positioning Schools’ limitations – e.g. the concept of competitive advantage coming mainly from strategic positioning; the almost exclusive attention to external environment and market attractiveness analysis; the excessive static character and the emphasis on strategic planning instead of its implementation; and the tyranny of the business units – [11][20] getting the managers to look inside, instead of just outside, their corporation boundaries. According to the resources and competences-based view, firms are a unique collection of tangible and intangible resources and competences [21][22].

For Wernerfelt [23], resources are tangible and intangible assets tied semi-permanently to the firm. Moreover, some resources give an advantage to their owner by making other parties facing higher costs and/or lower returns associated with the acquisition of that resource.

Hamel and Prahalad [10][20], in their well known study “The core competence of the corporation”, provide a definition of core resources and competences, described as “a specific area of expertise within a firm, resulting from the harmonization of complex technology streams and working activities”. Notwithstanding the nature of these resources and competences, the RBV holds that the very possession of such distinctive assets constitutes the basis of a company’s competitive advantage. And these resources, contrarily to what happens to physical resources, do not deteriorate in time, but they grow through application and sharing. As a whole, according to the RBV, strategy becomes the development of a cross-functional and cross-SBU architecture aiming at creating a wide portfolio of core resources and competences.
The Dynamic Capabilities Approach [11][12] can be seen as an extension of the previous RBV model. The DCA focuses on identifying the dimensions of firm-specific capabilities that can be sources of advantages, and to explain how combinations of competences and resources can be developed, deployed and protected. Such approach deals with exploiting existing internal and external firm-specific competences, as well as developing new ones, so as to dynamically renew competences to achieve congruence with the changing business environment. The dynamic capabilities theory’s main argument is that the distinctive and difficult to replicate competitive advantage of firms lies with its firm-level distinctive competences/capabilities, in turn organized in three categories: Managerial and organizational processes – the way things are done in the firm, or what might be referred to as its routines, or patterns of current practices and learning; Positions – specific assets; Paths – the strategic alternatives available to the firm, and the presence or absence of increasing returns and attendant path dependencies. A firm’s competitive advantage rests fundamentally on processes, shaped by positions and paths.

Hamel and Valikangas [12] revisit the DCA tenets by adding that in “hypercompetitive” environments [24], dependable advantage is a superior capacity for reinventing a firm’s business model before circumstances forces it to: such capacity is labeled “strategic resilience”, and deals with continuous reconstruction, that is, innovation in organizational values, processes and behaviours that systematically favour perpetration over innovation.

Identifying and developing valuable resources, competences and capabilities is far from being an easy task [25]. Responding to this issue, a wide group of authors propose several tests to allow the identification and verification of whether a resource or asset is strategic or “core”, and may therefore constitute the basis for achieving and sustaining competitive advantage [11][20][21][23][26].

A holistic and synthetic set of conditions to fulfill so to verify if a resource or competence is core is proposed by Collis and Montgomery [22], who draw from and bring together previous studies on the field. In order to be considered core, a resource or competence shall pass five tests.

1. “Inimitability”: hard to copy, thus limiting competition and generating profitability over time, thanks to physical uniqueness, path dependency, causal ambiguity – it is hard to isolate the value creating resource and to reproduce it – and economic
deterrence – as for overcapacity, a heavy investment on the resource, paired to a limited market receptiveness, deters competitors from reproducing it.

3. “Appropriability”: creating value which is easily captured by the firm.
4. “Non-substitutability”: hardly replaceable by a similar, substitutive resource.
5. “Competitive superiority”: relatively superior to other resources possessed by competitors.

3. Methodology
The present research is based on case studies, defined by Yin [26] as “empirical inquiries that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. Qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomenon of a distribution paradigm shift within a given industry – that is, Mobile Content – characterized by a high level of dynamicity and competitive turbulence, and at thus building new theory, or extending existing theories, on it [28].

To accomplish the previously identified research propositions, from March to September, 2009, twenty-six in-depth exploratory case studies based on sixty-eight semi-structured interviews were performed. The cases analyzed companies classifiable as follows:

- Mobile Network Operators – Telecom Italia Mobile; Vodafone; Wind; H3G;
- Device Manufacturers – Apple, RIM, LG, Nokia, Samsung Electronics, Sony-Ericsson;
- Mobile Content & Service Providers – Buongiorno, Dada, Zero9;
- Web Companies– Fastweb, Google, Microsoft, Yahoo;
- Mobile Platform & Operating System vendors – Microsoft, Opera, Symbian;
- Software Developers – GetJar, Handango.

Coherently to the research methodology employed [29], firm sample was not randomly selected, but firms were picked as they conformed to the main requirement of the study, while representing both similarities and differences considered relevant for the data
analysis: though the study selected the MNO as the reference actor, the choice of including Operators’ third parties and competitors in the sample allowed to obtain a multi-perspective view on the phenomena under scrutiny.

The semi-structured nature of the interviews made possible to start from some key issues identified through the literature – such as the MNOs resources portfolio as described by previous literature –, but also to let any innovative issue emerge from the open discussion. Informants were first asked to describe the current, traditional distribution model in place within the Mobile Content market from their own perspective, stressing its pros and cons (with questions like “What actor has the predominant role?”, “How the system of relationships works like?”, and so on); later, they were requested to identify the main perceived and expected changes in the strategic landscape brought in by the introduction of Application Stores as an alternative distribution paradigm. They were also asked to address how such changes could affect the actors’ strategies – with specific focus on resources, competences and capabilities endowment –, identifying the main opportunities and risks implied.

The identification of the core topics the discussion could lead back to was based on practices borrowed from “Grounded Theory” methodology [30], which helps developing new theory or a fresh insight into old theory: after identifying the research “core categories”, the related “conceptual categories” were then isolated and described by means of applying the “open coding” technique to the interviews transcriptions.

A multiple case study approach reinforced the generalization of results [31], and allowed to perform a cross analysis on platform characteristics and their combinations – to see which variables changed and which remained constant –, due to the presence of extreme cases, polar types or niche situations within the theoretical sample [31]. 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” [27][32], several sources of evidences or research methods were employed: interviews – to be considered the primary data source –, analysis of internal documents – both official and informal –, study of secondary sources on the firm – research reports, websites, newsletters, white papers, databases, conferences proceedings –. This combination of sources allowed to obtain “data triangulation” or “perceptual triangulation”, essential for assuring rigorous results in qualitative research [33].
Throughout the research, theory – represented by the literature review – was used as “part of an iterative process of data collection and analysis” [32], meaning that it was employed as an initial guide to design the study and the process of data gathering, though it was never intended to constrain emergent issues coming from the qualitative analysis, so to preserve the suggested considerable degree of openness to the field data [27][28].

4. The distribution paradigm shift in the mobile content market

4.1 The traditional Mobile Portal model and its founding resources and competences

The Mobile Content market emerged as MNOs started looking for alternative sources of revenues to cope with the decline of voice services marginality and Average Revenue Per User [34], soughing to exploit both network and device-related advancements through the market making of multimedia digital content and service. From the market’s early beginnings, Operators had managed to shape Mobile Content with few constraints, taking advantage of their uncontested bargaining power based on unique assets like: the Mobile network infrastructure; the charging, billing and accounting systems; the strong brand identity; the large customer base and customer control through the SIM card [35][36]. Such central position within the value network gave these actors the chance to exert a competitive dominance and control on third party Mobile Content & Service Providers (MCSP) and Mobile Technology Providers (MTP), the originators and enablers of value added services offer [16].

On the operational level, the content and service distribution paradigm has mainly developed around the “Mobile Portal” model: the portal represented the interface through which end customers could have access to content and service offer, was it “white label” – i.e. MNO branded – or third parties’ – i.e. MCSPs, MTP, Media Companies, Web Editors, and generalist Content Providers –. Based on Mobile network protocols – such as Wireless Applications Protocol (WAP) –, often pre-installed on mobile devices, and usually MNO branded and owned, the portal aggregates an offer of different services (Games, Video, Personalization, Information & Entertainment, etc.); once the customer has searched and selected the desired content, it can proceed to the purchase through different procedures – for example, “click to buy” WAP billing, or SMS billing through short code –; all these “mobile billing” methods can be carried out by the MNO alone, through its unique mobile charging and billing systems.
Operator then performs the accounting or sharing of the generated revenues with third parties involved in content creation, bundling, delivering etc., according to previously set revenue sharing agreements.

In accordance to the overarching strategic orientation, the Mobile Portal has been managed in a direct and tightly constrained manner by MNOs, who adopted a “protectionist logic”. This approach, termed “walled garden” or “closed access”, contemporarily implied a downstream or demand-side – towards end customer – and an upstream or offer-side – towards business third parties like MCSP – control of content offer [37]. On the demand side, MNOs aimed at making their offer strongly proprietary and generating lock-in effects on the customer base: users could only have access to their Operator’s portal, and this rule was enforced by both technological means – e.g. blocking the gateway to halt navigation in other sites, or setting the mobile browser so to deny the possibility to freely digit a page’s URL – or pricing actions – e.g. imposing unsustainable data traffic fees for extra-portal navigation –. On the offer side, MCSPs, MTPs and content owners were kept far away from the end customer, unable to make direct profits from content selling, and forced to accept non-incentivizing revenue sharing agreements. The Operator had built a thought-to-be impregnable gatekeeper role.

Recently, some advancements were made concerning openness to third parties, examples of which are the higher access granted to “off portal” mobile sites managed by third parties – sometimes directly linked to the Operator’s portal in the so called “hybrid site” or “friendly site” model –, fairer revenue sharing, and the outsourcing of portal sections’ management to third parties. However, these incremental improvements were not enough to spare the market from new entries: the paradigm was to be shaken by an alternative model, coming from outside the traditional business boundaries, and presenting several intriguing characteristics.

### 4.2 The Mobile Application Store anomaly

The previous picture characterizes Mobile Content as a market with significant growth potential, yet dominated by an actor typology – the MNO – willing to control such growth within a closed distribution model, based on the possession of unique assets. Though entry barriers erected were high, some trends and innovative moves allowed to overcome or lower them, making way for challengers. Concerning technology, the fast-improving capabilities of mobile devices – e.g. high resolution screens, broadband
wireless connections, easy-to-use graphical interfaces – provided subscribers with improved tools for content fruition [38], while the growing Web-Mobile convergence opened new competitive spaces to the industry.

Taking advantage of this fairly new “enabled scenario”, a company coming from outside the market was to make a strategic move that could change the competitive landscape. Apple Inc., the Cupertino, California-based electronic corporation, deployed a strategy based on leverage, linkage and learning [39] to obtain a latecomer advantage: it leveraged on strong assets like its brand reputation and its innovative iPhone device launch – that, in itself, was labelled a “blue ocean strategy”, capable of changing the competitive rules of the game [40] –; it linked this proposition to other businesses where the company already built a stronghold, that is, its iTunes content distribution and billing system, in order to exploit synergies and cut down investments; and it learned from the business model characterising the NTT DoCoMo iMode environment, with high level of third parties independence and incentivizing revenue sharing, yet overcoming its criticalities by applying it to a single, closed device, where quality could be easily controlled even if the system was opened to external developers. This resulted in the set up of an alternative content, service and application distribution paradigm that could actually jeopardize the MNOs dominant position, breaking up the carrier-centric industry structure and opening the gates to a wide array of new entrants.

As emerged from the interviews and the secondary sources analyzed, the “Apple Store” model shows a number of significant differences if compared to the traditional Mobile Portal.

From a technological point of view, application stores as mobile digital distribution platforms do not constitute a radical innovation, being quite similar to software libraries or marketplaces controlled by Web software distributors like Handango, Handster, PocketGear and GetJar. However, the innovation lies in translating this Computer-based and Web-oriented nature in the Mobile context: leveraging on new smart phones features and capabilities, stores can be accessed from different networks – e.g. mobile, Wi-Fi, fixed-line –, are mostly populated by software application and are characterized by improved quality of presentation – e.g. classification, search and discovery – directly impacting on user experience.

From a business point of view, changes have even stronger implications. First, the model relies on the widespread PC-based iTunes system, in a “master-slave” relationship. This choice, making the most out of the ongoing Mobile-Web
convergence, enables the migration of a wide Web customer base towards the additional Mobile channel, with – potentially – lower barriers to adoption and weaker resistance to change; moreover, since the iTunes applications purchase process works through a “direct billing” model, based on alternative channels – e.g. credit card; Paypal; bank transfer; Web user accounts – capable of leapfrogging mobile billing architectures, it may determine a shift towards a new charging and billing system not in the Operators’ hands.

Second, the application creation and distribution paradigm’s underlying idea is to grant higher openness and independence to third parties, following a “self-publishing model”: not only traditional third parties like MCSPs, but mainly single developers are provided with easy to use, widely interoperable and inexpensive – if not free – platforms and tools to create an application, publish it on the store – following the “editorial approval” from Apple –, govern its retailing policies concerning prices and presentation, directly selling it to end customers and receiving fair shares of the revenues created – about 70% –, and monitoring their offers performances through analytical and reporting tools. This free model may stimulate an “open garden” approach directly on developers, theoretically enabling a Mobile Content “long tail”, while granting the overall quality by maintaining a strict control over the device and the Software Development Kit (SDK).

Third, from an offer perspective, the store’s Web-oriented nature allows to pair the mature mobile content and service offer with Internet-based software applications; the higher complexity of software application also makes room for more sophisticated purchase methods like in-app billing, or appealing advertising-based services; at present, the Apple Store avoids convoluted marketing solutions that led to advert selection and customer distrust problems in the traditional content market, like application subscriptions – implying “push” delivery of a given content or service paid through weekly/monthly fees – and branding of store pages – this practice, based on selling on-portal space to advertisers, could limit the presentation quality and heavily constrain the accessibility of niche applications, thus cutting the long tail –. Again, these aspects positively influence the customer experience of the “open but closed” [41] system shaped.

Taking advantage of the favourable momentum deriving from the iPhone launch, and deploying a smart advertising campaign meant to educate the market on application fruition, Apple was able to get the most out of its Store, placing it in a different
competitive dimension than the traditional portals, so to protect and consolidate it from any retaliation or counterrevolutionary strategy incumbents could [42]; as to December 2009, 100,000 different applications were published on the Apple Store, and more than 2 billion were downloaded. Though numbers of downloads are inflated by free applications, the magnitude of this phenomenon allow to infer that Mobile Application Stores will provided new sap to the Mobile Content market. According to recent studies, in 2009, from 2,3 to 2,5 billion apps were downloaded from application stores around the world – 90% of which came from the Apple Store –; revenues from apps have reached 4,2 billion $ in 2009, and will grow to 7 billion $ in 2010, 600 million $ coming from advertising [38][43][44].

Academic studies on the subject are still missing, due to its novelty: yet, analysts agree on the argument that the mass deployment of app stores impact upon existing distribution content channels, affecting the distribution of entertainment and content revenues within the mobile ecosystem, and creating new strategic opportunities and challenges [44].

And the players move appear to be proving them right. The distribution paradigm pioneered by Apple was subject to imitation by a wide range of actors orbiting around the business area: Application Stores are becoming a “bandwagon” every player appear to be eager to jump on – surprisingly, also those who should oppose it, that is, the Operators –.

The Apple Store “kin” counts several heterogeneous members: MNOs – AT&T’s MEdia Mall; China Mobile’s Mobile Market; O2’s Limus; Orange’s Application Shop; Sprint Nextel’s Software Store; Verizon Wireless’ VZAppZone; Vodafone’s 360° –, Device Manufactures (DM) – Nokia’s Ovi Store; LG’s Application Store; Palm’s Software Store; RIM’s Blackberry App World; Samsung’s Applications Store; Sony Ericsson’s PlayNow Arena –, Mobile Platform (MP) and Operating System (OS) vendors – Google’s Android Marketplace, already counting 16,000 published applications [38]; Microsoft’s Windows Marketplace for Mobile; Symbian’s Horizon – and Software Developers (SD) – AppsLib; GetJar; Handmark; Mobihand; SlideMe –.

Given the amassing of companies in the business arena, a competitive tussle can be easily foreseen.

The strategies in place, the advantages sought for and the risks ran by the different actors provide a vivid picture of the strategic changes determined by the advent of an alternative distribution paradigm, and suggest a shift in the value assignable to resources
and competences. Taking the MNO perspective, the following section will present a reference framework to address the issue, assessing what variations occurred in the core resources requested to build and sustain competitive advantage, providing original categories to classify the new resource portfolio and suggesting valuable strategic guidelines to manage it.

5. The MNO-oriented resources, competencies and capabilities assessment framework

Throughout the multiple interviews connected to the distribution paradigm change from a Mobile Portal to an Application Store model, several strategic topics were brought to the attention of the researchers – e.g. market structure and value configuration; strategic “rules of the game”; strategies to induce or avert change; business models adopted; timing of entry or technology adoption; nature of competition and sustainability of competitive advantage –: however, the emerging underlying theme or central recurring issue was the impact of such shift on the resource, competence and capability endowment of companies involved. Therefore, this matter was found to be the “core category” [30] of the research. Through applying the “open coding” method proposed by the Grounded Theory approach, the main “conceptual categories” related to the core category were labelled and identified. Such categories corresponded to the set of resources, competences and capabilities affected by change.

Hence, a framework is developed which supports the incumbent’s R&C&C assessment in presence of a distribution paradigm discontinuity. The framework comprises three main steps (Figure 1).
The first step sees the identification of the R&C&C — both related to technology assets and to broader business domain — as derived from the case studies. These resources are then categorized according to three original concepts:

- **traditional core**, or resources that are thought to be core in the traditional, consolidated paradigm — represented in this case by the Mobile Portal distribution model —, before the discontinuity under scrutiny takes place;
- **traditional hygienic**, or resources that are thought to be a “strategic necessity” rather than distinguishing core dimensions in the traditional paradigm, before the discontinuity under scrutiny takes place;
- **emerging core**, or resources that are thought to be rising as core in the innovative paradigm — that is, in this case, the Mobile Application Store model —, after the discontinuity under scrutiny takes place.

The second step is focused on the application of the five literature-derived tests to the previously case-derived R&C&C portfolio resulting from the distribution paradigm discontinuity, so as to verify its actual core status — i.e. contribution to the achievement and sustainment of competitive advantage —. The resources are alternatively labelled as core, semi-core or non-core, according to their outcomes of the testing process.
Chapter 2

The third and last step builds on the categorization results of the previous one, in order to provide strategic guidelines for managing the newly emerged R&C&C portfolio and driving the firm’s business strategy accordingly.

5.1 The classification of the case studies-derived core resources, competencies and capabilities

Leveraging on the case studies performed and refining the analysis through the industry-specific literature review carried out, a list of thought-to-be core R&C&C for Operators was derived. The list was further divided into three original macro-categories, which took into account the consolidated or emerging nature of each element, as well as its impact on competitive advantage – core or hygienic –. Each category was in turn divided in “Technology-wise” and “Businesswise” R&C&C.

“Traditional core R&C&C” grouped those resources that were considered to be core within the Mobile Portal paradigm, before the paradigm discontinuity tool place.

Technology-wise:

- **Network Infrastructure**: possession of Mobile Carrier Network. As traditionally claimed by the existing literature on the Mobile Industry [35] [36], and testified by the four case studies on Mobile Network Operators (TIM, Vodafone, Wind and H3G), the network infrastructure and the related 3G licenses are considered the core asset for an Operator; whenever the network coverage is limited or underperforming (as in the H3G case), this can determine a competitive disadvantage, thus reinforcing the idea that the network is an essential facility.

- **Charging-Billing-Accounting Systems**: possession and control of transaction enabling systems. The criticality of these systems can be inferred both from the case study conducted on the four Operators, and from those focused on third parties: MNO’s partners – like Mobile Content & Service Providers Buongiorno, Dada, Zero9, and Media Companies like The Walt Disney Company, EA Mobile, Universal Music, and Warner Music – argue that their inability to get direct access to end customers’ credit strongly limits their bargaining power and competitiveness; the Operators’ unique resources and assets related to charging content, billing it and sharing the revenues deriving from its selling among business partners make them enjoy higher performances and ground their competitive advantage.

- **Gatekeeping systems (Mobile Portal)**: control of end customer access to value added services offer. The four Operators interviewed state that the Mobile Portal has
been enhancing their “gatekeeper role” of the Mobile Content and Mobile Browsing offer. This assertion is confirmed by Mobile Content & Service Providers and other Content Creators and Software Developers, as they have to compete harshly for “virtual on-shelf space” on the Portal pages, or at least to be linked to it in the “hybrid site” model, since this visibility can determine their offers’ success or failure; in the worst case, being excluded from the “on portal” world dramatically decreases the chances to even get customers to access and know about a given player’s Mobile offer (as it happened to some Software Developers).

*Businesswise:*

- **Brand reputation:** possession of a company brand with high customer awareness. The intensive marketing campaigns Mobile Network Operators like Vodafone, Tim, H3G, and to a lesser extent, Wind, have been investing on in the last years has contributed to create an uncontested brand reputation. Other “market giants” in the Web or the Media industry like Apple, Google, Microsoft, Yahoo, The Walt Disney Corporation, Mediaset, Sky, Warner and Universal can match the Operators brand awareness in general terms, but when dealing with the Mobile market, MNOs are without doubts the customers’ point of reference. Quoting the interview to a Marketing & Sales Manager of a Media Company: “*We are bigger than them, our brand is as solid as a rock: but when you talk Mobile, customers don’t seem to care that much. The only brand they seem to look at is their Operator’s*”.

- **Customer Ownership:** control of end customers’ profiles and credit through the Sim card. Another unique asset in the Operator’s hands, Sim cards not only memorize a customer’s credit, but also store other key personal information the MNOs could exploit to customize their offer and outperform rivals. In all four case studies focused on Operators, as well as in other 18 cases dedicated to third parties, customer ownership was labelled as a core resource and asset Operators can rely on to compete: Device Manufacturers proved to be particularly sensitive concerning this issue, as the presence of the Operators’ Sim card inside their device substantially constrained their chances to control the end user’s behaviour through the mobile phone itself.

- **Relationship with MCSP partners:** network of alliances with MCSP intermediaries for value added services offer management and market making. Vodafone, TIM, and to some extent Wind and H3G indentified the collaboration with trusted and skilled parties as a critical asset to manage, advertise and innovate.
their Content offer. Also, some Media Companies and Content Owners like Sky, Mediaset and EA Mobile recognize the role of Mobile Content & Service Providers as trusted intermediaries between them and the Operators, to better place their original content offer. On their side, the three MCSPs interviewed were obviously interested in claiming their role was strategic for the Operators to compete in the market.

“Traditional hygienic R&C&C” grouped those resources that were considered a “strategic necessity” – that is, essential to compete but not grounding a sustainable competitive advantage – rather than core within the Mobile Portal paradigm, before the paradigm discontinuity took place.

*Technology-wise:*

- **Network Functionalities:** management of network-related services – e.g. interconnection, connectivity, data transfer, localization, network operations management, customer service. While the network in itself is considered a core asset, apparently it is not so for the provisioning of its functionalities, whose enabling role was largely underestimated by the Operators. MNOs see the management of network-related services as a sort of a “necessary evil” they had to confront, more of a set of value-destroying rather than value-generating activities: only Vodafone stated it recently started developing a “Smart Pipe” strategy which should aim at shaping a Business-to-Business offer based on network functionalities, though details of such strategy were not disclosed as they had not yet been approved by the top management.

*Businesswise:*

- **Relationship with Software Developers:** network of alliances and agreements with third party value added services and applications developers. The collaboration with Software Developers was present in the Mobile Portal paradigm, though according to the Operators and other players (including the Software Developers themselves) was not considered a core resource; this depended on the very nature of the traditional content offer, that was not characterized by particularly complex service and application design activities, therefore not requiring a heavy linkage to developers. Moreover, given the visibility mechanisms set up by the operators on their Portals, only consolidated companies with considerable amounts of resources to invest on advertising and a wide range of services to offer could afford to have their content and services published on the Portal’s window: this made it virtually
impossible for single developers to propose their few services and applications through the Operators’ channels.

- **Relationship with Mobile Platform and Operating System vendors**: network of alliances and agreements with third party MP and OS providers. In the Mobile Portal paradigm, mobile platforms and operating systems are seen by Operators as a device-related feature, not directly impacting on the achievement of competitive advantage; vendors of such systems admit that before the Application Store Paradigm rose, they had not been able to gain market power by imposing their solutions as an essential enabler of a rich-media content & service offer, thus suffering from the perceived commoditization of their core products.

- **Relationship with Device Manufacturers**: network of alliances and agreements with third party DM. Though the cell phone is the object every Mobile user has in his or her hands all day long, Strategic interactions between Operators and Device Manufacturers has been developing to a great extent like traditional buyer-supplier relationship, where both parties had comparable bargaining power but were also aware of being substantially depending on one another, and . Moreover, the rarity of exclusive supply agreements between Device Manufacturers and Operators for the provisioning of high-end models convinced the Operators they could not ground an inimitable and sustainable advantage only by partnering with the right Manufacturer at the right time: such exclusive contracts were indeed perceived as unappealing by DMs who wished not to constrain their penetrable market by establishing too a strong link with one or few Operators; and before the advent of smartphones and innovative, high-performing models, MNOs themselves were not yet considering devices a potential driver to increase subscriptions to their brand, and this made them undervalue the importance of relating with their manufacturers.

- **Financial solidity**: capacity to efficiently gather and allocate financial resources. The financial equilibrium Operators can achieve is seen more as a prerequisite to operate in the market than a real source of advantage, especially for MNOs, who have always been characterized by an uncontested “financial health”.

“Emerging core R&C&C” grouped those resources that were considered to be rising as core within the innovative Mobile Application Store model, after the paradigm discontinuity took place.

*Technology-wise:*
- **Self-Publishing Platforms**: provisioning of systems and tools – e.g. open Application Program Interfaces, open and easy to use SDK, pricing control, analysis and reporting – to enable third party’s independent management of value added service offer. Many case studies on third parties like Device Manufacturers – Apple, RIM, Nokia, Samsung Electronics –, Web Companies – Google, Microsoft –, Mobile Platform & Operating System vendors – Microsoft, Opera, Symbian – and Software Developers – GetJar, Handango – identified self-publishing platforms as a new asset that can ground competitive advantage in the emerging Application Store paradigm: these players argue that such publishing tools and platforms may be provided to software developers in a free and open manner, but still they are embedded in a more complex development environment that is typically proprietary – e.g. in the case of Apple and RIM – or to some extent controlled by the providing brand – e.g. in the case of Google Android –; in addition to this, getting a wide pool of developers to learn about and use a given set of developing and publishing tools can generate lock-in effects and switching costs that bind those developers to the providing company. Therefore, the ability to control such assets can be crucial in the newly shaped environment. This statement was to some extent confirmed by the interviews on Vodafone’s managers, who claimed to be committed to create their own self-publishing tools to attract a wider developer base.

- **Gatekeeping systems (Mobile Application Store)**: control of end customer access to applications offer. Several interviewed companies labelled the possession of a Mobile Application Store as the new gatekeeping systems an Operator – or even other actors – could rely on to outperform competitors. Interestingly, this asset was identified as core by those actors that were to some extent excluded from the Mobile Portal environment – like Device Manufacturers: Apple, RIM, LG, Nokia, Samsung Electronics, Sony-Ericsson; Web Companies: Fastweb, Google, Microsoft, Yahoo; Mobile Platform & Operating System vendors: Microsoft, Opera, Symbian; Software Developers: GetJar, Handango – or only played a secondary role in it – like some Media Companies: The Walt Disney Corporation, Warner Music, Universal Music –. Mobile Content & Service Providers showed to be still anchored to the Mobile Portal paradigm, in which they were able to carve out a nice position for their offer, and disregarded Stores as critical assets. Operators’ stance with reference to Application Stores was instead contrasting: while TIM and Wind did not show a significant interest in the new phenomenon, Vodafone and H3G declared
they were investing to leverage on the new instrument right: beyond the marketing-oriented advantages related to riding the new market’s buzzword, they are developing an Application Store strategy well rooted in their general strategic vision, in the attempt to exploit their wide and cross-device, cross-OS customer base to set up an hybrid model where the Mobile Portal and the store coexist rather than being overlapped, and the more diffused and intuitive mobile billing is used instead of direct billing. Vodafone will differentiate the offer by leaving mature content and access to third parties’ links on-portal, while dedicating the store to Internet, W3C-standard based applications; H3G is planning to keep the traditional content and application offer separated, so to set differentiated revenue sharing models and avoid the “Trojan horse” trend, that is, fake applications linking to off-portal third party sites.

Businesswise:

- **Relationship with Web Companies**: network of alliances and agreements with third party Web Companies (WC). Informants argued that in a convergent world, setting up strong agreements with those companies coming from the Web – e.g. Facebook, Google, Microsoft, Yahoo – that are capable to attract huge customer bases and leverage on strong branded services can become an important resource for Operators to generate data traffic, create joint bundles of offer – like those promoted by Vodafone to include navigation in “partner sites” such as Facebook, Google and MSN in their Mobile Internet subscriptions – and stimulate content, services and applications demand.

- **Open innovation**: ability to breed and lead internal and third party innovation within an ecosystem of separate though interacting entities [47]. According to all third parties interviewed, and to all Operators as well, the growing complexity and the high rates of innovation that are beginning to characterize the Mobile Content & Mobile Internet Value Network are making it almost impossible for a single network member to either generate innovation internally as a stand-alone entity, or to control the partner-generated innovations through a closed model. On the contrary, a dynamic capability that is gaining increasing importance and recognition is that of harnessing collective creativity through what we can define “open innovation”. Because of the Mobile-Web convergence and the Application Store paradigm, Operators are now faced with an offer complexity they can no longer face alone or breed in a “closed garden”, but they rather need to leverage on their focal
positioning in the value network to orchestrate the relationships with a plethora of
third parties, all playing a part in the multi-step innovation process.

- **Resilience**: capability to continuously anticipate and adapt to business changes. As
the market is becoming more and more turbulent and dynamic than in its early
stages of history [35][36][42], Operators are currently forced to constantly face such
dynamicity. Therefore, a very intriguing dynamic capability that could be
extrapolated by the interviews on Vodafone, TIM, H3G, Buongiorno, Dada, Nokia,
Apple and Google is what we label “resilience”, that is, the assimilation of the
paradoxical concept that “change is a constant” in the business context of reference:
being flexible, adaptive and farsighted helps in shaping strategies that can
continuously renew the sources of competitive advantage, thus making it truly
sustainable.

5.2 The application of the 5 literature-derived tests to the identified R&C&C and
assessment of their contribution to competitive advantage

The previous list is an aggregation and elaboration of the empirical results as derived by
the case studies: since the purpose of the research is to delineate how the distribution
paradigm shift changes the nature of existing R&C&C in order to identify the new
MNO core R&C&C endowment – by demoting previous core resources or promoting
hygienic and emerging resources to the core status –, each resource or asset listed shall
be further analyzed through the “lenses” offered by the synthetic five tests proposed in
Collins, Montgomery [22], so to infer whether it can actually be considered a core
element affecting the firm’s strategy. Hence, the second step of the MNO-oriented
reference framework designed crosses the sixteen R&C&C to the five test of
inimitability, durability, appropriability, non substitutability, and competitive
superiority. For each crossing, we point out if the given resource passes the test with a
“strong” or “weak” correlation to the underlying characteristic – e.g. hard imitability;
slow depreciation, etc. –.
Figure 2. The evaluation of the resources, competences and capabilities status through the five tests

Following the theoretical tenets, a resource is labelled as “core” if it passes all five tests with a strong correlation or up to one test with a “weak but strengthening” result, while it is judged as “non core” if it is found deficient on one or more tests; to take in-between results into fair account, we introduce the notion of “semi-core” to identify resources characterized by a weak correlation concerning two or more tests – that may lead to criticalities in the resulting competitive advantage’s sustainability –. To integrate this static view by adding a dynamic perspective to the analysis, we also underpinned the short-medium term trend the resource under scrutiny was subject to, indicating whether its core value was rising or dropping – e.g., for the open innovation capability, appropriability is to some extent critical, though the issue is expected to be solved in the short-medium term –. The choice of making this testing process researchers-led and not informants-led is based on the assumption that researchers possess a more holistic and methodologically rigorous view, being capable of basing their judgement on the whole pool of data and information collected through the multiple cases, and on methods and tests drawn from and grounded in existing literature.

As shown in Figure 2, applying the five core tests to the different R&C&C allows to shed light on the shift determined by the new Application Store and the broader Mobile
Web phenomenon, evidencing which resources and assets have resisted the “wind of change”, which “emerging” elements have actually risen to a core status and which have fallen apart to a non core or competitive hygienic situation.

Within the “**Traditional core**” category, the only resources that held their core status were:

- **Network Infrastructure.** Despite some substitutability issues depending on the rise of alternative network technologies like WiFi, the Mobile Networks still possess some unique characteristics – like localization features, high coverage, non-replication due to its link with 3G licenses and so on – that makes those “structured” Operators who own it have a clear infrastructural advantaged if compared to other unstructured competitors – like, for instance, Mobile Virtual Network Operators –. The

- **Brand reputation.** As the tests show, till now the shift of paradigm could not undermine Operators’ brand awareness. This is largely confirmed by a number of surveys Vodafone, TIM, Wind and H3G carried out on their customer bases to verify if the perception their customers had on their Operators’ quality and image had worsened in the last year (surveys were conducted throughout 2009): Operators claimed no “brand depreciation” was evidenced. However, this intangible asset’s competitive superiority is to some extent threatened by the strong brand awareness characterising certain categories of newcomers, like Web Companies.

- **Customer Ownership.** The importance of the Operators’ Sim card as a means to control customers’ credit and profile – as emerged in Vodafone, TIM, Wind and H3G case studies, as well as in some cases dedicated to Device Manufacturers –, paired with the absence of any alternative model or tool that could substitute the Single Identity Module, make the resources and assets related to “customer control” pass all five tests.

The other resources, competencies and capabilities that were labelled by the informants as core in the Mobile Portal paradigm were demoted to a semi-core or even a non core status:

- **Charging-Billing-Accounting Systems.** This set of previously unique assets lost ground because of the confrontation to direct billing channels promoted by the Application Store paradigm: CBA system can no longer be considered a durable and non-substitutable asset. This is confirmed by the fast success gained by some Application Stores who leveraged on alternative billing systems – e.g. Apple Store and Android Marketplace –, and by the growing interest shown by different players
to build up a direct billing channel, that also resulted in some competitive attritions – e.g. Nokia reported significant problems in its relation with the Operator Orange, as the latter refused to provide access to Mobile Billing features to Nokia’s Ovi Store, since it directly competed with the Operator’s Portal –; however, Mobile Billing is a competed away but still important asset due to some characteristics like pre-installation and ease-of-use.

- Mobile Portal Gatekeeping System. It lost its core value, which was competed away by the Application Store model and the Mobile Web access. This result is confirmed by the growing interest of several Operators (like Vodafone and H3G) in pairing or even substituting their old Portal with a new Store: choices which may undermine this asset’s durability.

- Relationship with MCSPs. This resource shared a negative fate with the previous resources, as these actors’ intermediation role is bypassed by the more direct relationship established with developers and content owners. The interviews with the three MCSPs showed these players are currently foot-dragging, being still focused on mature content and apparently unable to reshape its competitive positioning according to the new hype. Should the end customer show to favour direct billing rather than Mobile billing, in the middle-term Mobile Content & Service Providers may even risk to lose their intermediary role within the ecosystem.

In the “Traditional hygienic” category, several changes took place.

- Network Functionalities management. This asset assumed higher importance due to the widened range of third parties enabled to enter the Mobile Content business area and deliver services and applications: these players need access to a business-to-business offer of network-related services, in turn requiring Operators to adopt a “Smart Pipe” strategy [45], as Vodafone explicitly claimed to be doing, aimed at exploiting the Mobile network potential.

- Relationship with Device Manufacturers, Software Developers, Mobile Platform and Operating Systems vendors. The higher market openness and the lowered entry barriers resulted in a growing importance of developing relational competences towards key actors like DMs, MP and OS vendors, as these players may choose to directly compete in the content and applications market by setting up their own store – as it is happening for all the 8 companies interviewed that belong to these three clusters –; moreover, the new paradigm’s rules made Developer-related network
externalities emerge [46], with Operators competing with one another to attract the wider pool of developers, as their number and know-how positively influences the final offer quality.

- Financial solidity. This resource, instead, remains more of a strategic necessity than an actual source of advantage.

In the “Emerging core” category, the following results were obtained:

- Self-publishing platforms. These new assets are recognized as valuable means to attract developers, as testified by the significant effort put in place by both challengers – e.g. Apple, Google, Microsoft – and incumbents – Vodafone, Nokia, Opera, Samsung, Sony-Ericsson, Symbian – to create easy-to-use, open and free-of-charge toolkits for developing services and applications. In the short-medium term, when the Application Store context will become increasingly consolidated, players will strive to solve the inimitability and non substitutability issues currently burdening their open solution by erecting some protections or barriers.

- Relationship with Web Companies. Given the growing importance of Mobile-Web convergence the Application Store relies on, MNOs will also have to learn dealing with WCs, the latter counting on a huge customer base, on a strong brand reputation and on innovative, appealing Web-based services. Again, this result is confirmed by the intensification of partnership agreements between Operators and Web giants to bundle their service offer – all the four Operators interviewed have set up Mobile Internet offer involving facilitated access to a set of Websites, following what we may call an “enlarged garden” logic, an hybridization between the Mobile Portal world and a fraction of partner Websites: still, some durability issues can emerge as soon as the WCs gain a real foothold in the Mobile Content market, as they might chose to select a more aggressive stance towards the incumbents.

- Gatekeeping role (Application Store). Though this may seem surprising, neither the Portal nor the Store are classifiable as core assets, as the competitive dynamics in place, seeing a true competitive tussle related to App Store launch with few entry/exit barriers and with some appropriability issues related to the high percentage of free apps published, suggest that no player will be able to base its competitive advantage on such gatekeeping systems only: it is not the store as a new presentation model – a gate to the Mobile Web universe – in itself to “do the magic”, it is rather the whole strategic conditions its underlying paradigm brings about, which is described by the newly emerged and heterogeneous set of core
R&C&C, to influence the achieved performances. The Application Store, therefore, is the “tip of the iceberg” of the underneath strategic revolution determined by the convergence of several industries: Web, Mobile and Media.

- **Open Innovation.** To confront the environmental complexity associated with the wider participation of different actors to the content, services and applications creation, management and delivery process, the Operators shall also develop open innovation capabilities [47], dealing with the ability to lead, orchestrate and create value from innovation spread throughout a variegated ecosystems. The significance of such dynamic capability was derived by the growing openness characterizing the Operators’ approach towards the Mobile Content & Internet market, that often lead to the externalization or outsourcing of some key innovation activities to trusted third parties – like Vodafone, TIM H3G and Wind did with their MCSP partners concerning their traditional Mobile Portal offer, and appear to be willing to do with the universe of Software Developers in the Application Store world –: in this newly shaping ecosystem, the Operator’s role will shift from that of “innovation concentrator” to that of “network innovation orchestrator”. As intuited by the literature on the subject (see [53]) and as confirmed by the case studies performed, open innovation strategies are burdened with some appropriability and value capture issues. Still, Operators are interiorizing this philosophy and are learning how to fill this sustainability gap: the 4 MNOs in the sample are indeed starting to make ecosystem-driven innovation the bulk of their strategies.

- **Resilience.** Finally, in the light of the high level of turbulence the Mobile industry is subject to, the MNOs are requested to develop a transversal dynamic capability we label “resilience”, that is, the capacity to continuously renew resources and competences to achieve congruence with the changing business environment. The importance of such capability is demonstrated by the commitment some Operators interviewed – especially Vodafone and H3G – showed with reference to embracing the new paradigm and all the modifications to the current strategies and business models it could bring about. Rather than the attempt to feed the Application Store hype and jump on this bandwagon, the internal and external consistence of the strategies shaped by these actors demonstrated a radically new way of conceiving their business and the way to operate in it: to draw a parallelism with military strategy, competitive warfare in the Mobile Content arena is not any more about “trench war”, with strongholds to defend and a clear border between enemies and
allies; it is more of a “movement war”, where swift changes can take place on a
daily basis, borders are fuzzy, and strategy shall be flexible enough to adapt. H3G
and Vodafone also constitute fairly good examples of how to capture value from
resilience: by making constant change – either on the content and services portfolio
level (H3G), or on the very strategic approach to the market (Vodafone and its
“Smart Pipe” strategy) – a “motto” for their marketing campaigns, these players are
also managing to enhance their brand recognition and value.

5.3 The identification of strategic guidelines to drive the management of the
emerging resources, competencies and capabilities portfolio

The categorization of resources, competencies and capabilities constitutes a key step for
analyzing comprehensively the outcomes of discontinuity, since, from a static
perspective, it allows to draw a map of the core dimensions which represent a valuable
source of competitive advantage. Taking a dynamic perspective on such classification,
however, can support the generation of strategic guidelines for correctly managing the
newly emerged R&C&C portfolio, in order to allocate efforts and investments towards
defending what is core and strengthening what can become core in the long run, holding
what is necessary for operating in the business, while divesting from areas which are no
longer significant. In turn, such practical guidelines on the management of internal
resources can become an input for the strategic decision making process, so as to shape
business strategies accordingly.

Figure 3 below shows how the reclassification outcome – both in terms of its static,
core/semi-core/non core values, and in its dynamic vision of resources appreciation or
depreciation – is paired to a clear set of management guidelines. The crossing of the
static and the dynamic evaluation gives rise to six significant combinations.
### RECLASSIFICATION OUTCOME

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<tr>
<th>CORE R&amp;C&amp;C - Rising</th>
<th>STRATEGIC GUIDELINES</th>
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<td>• Resilience</td>
<td>Enhance</td>
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<td>• Open Innovation</td>
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<th>CORE R&amp;C&amp;C - Steady / Dropping</th>
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<tr>
<td>• Network Infrastructure</td>
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<td>• Customer Ownership</td>
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<td>• Brand Reputation</td>
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<th>SEMI-CORE R&amp;C&amp;C - Rising</th>
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<th>SEMI-CORE R&amp;C&amp;C - Steady / Dropping</th>
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<td>• Network Functionalities</td>
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<th>NON CORE R&amp;C&amp;C - Rising / Steady</th>
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<td>• Gatekeeping system (Store)</td>
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<td>• Financial solidity</td>
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<th>NON CORE R&amp;C&amp;C - Dropping</th>
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<td>• Gatekeeping system (Portal)</td>
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<td>• Relationship with MCSP</td>
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<th>Resource classification</th>
<th>Strategic Guideline</th>
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<td>Core and steady trend</td>
<td>Nurture</td>
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<td>Core and dropping trend</td>
<td>Monitor</td>
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<tr>
<td>Non-core and rising/steady</td>
<td>Hold</td>
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<td>Non-core and dropping</td>
<td>Reshape or divest</td>
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Figure 3. The Strategic Guidelines for the R&C&C portfolio management according to the reclassification outcome

Resources classified as core and showing either a steady or a dropping trend in their value shall be defended, so as to preserve their contribution to competitive advantage. Beyond customer ownership, well guarded by the Sim card system, this is the case for network infrastructure and brand reputation assets, the former threatened of substitution by different networks, the latter potentially losing competitive superiority when compared to other global brands: MNOs will be required to shape their strategies so to avoid losing the contribution of such assets, which grounded their existing advantage, and on which they invested heavily in the past years.

Resources classified as core and showing a rising trend in their values shall be enhanced, so as to maintain a safe performance gap between the company’s and its competitors’ portfolio of leading – since competitors would probably try to build their own advantage on those core R&C&C with growth potential –. This is the case for open innovation and resilience, two dynamic capabilities still suffering from appropriability issues on the MNO side, and on which some dangerous competitors are focusing to create an alternative ecosystem and develop a new source of advantage – as the case studies on Apple, Nokia and Google show –.
Resources classified as semi-core and showing a steady or dropping value trend shall be monitored carefully, so as to spot early any change in their status or trend: they may become eligible to be promoted to the core status, or they may fall to the non core status. The CBA system and the network functionalities do have an impact on the Operator’s competitive advantage, and they must be controlled and analyzed to see whether their negative involution can be inverted; the appropriability of the resource relationship with Web Companies is jeopardized by the growing important such new entrants are gaining inside the Mobile market, though the threat of direct competition could be avoided if sustainable hybrid Mobile-Web business models are developed.

On the other hand, resources classified as semi-core and showing a rising value shall be nurtured, so as to take the opportunity to enlarge the pool of core resources a firm relies on. Relationship with Device Manufacturers, Developers and OS vendors and the related asset of self-publishing platforms are to be selectively but dedicatedly cultivated by Operators: identifying and linking to the right business partners and developing an affectionate developers base will be crucial for prosperity – and in the long run, maybe for survival –, given the harsh competition for contributors to application development every open innovation project experiences as soon as its pool of open access resources – e.g. the developers themselves – are scarce or close to depletion [53].

Resources classified as non core are not to be abandoned indistinctively: before considering the divesture option, they might be reshaped to renew their value contribution, or at least hold as hygienic R&C&C, being necessary to compete. The Portal gatekeeping systems might be revitalized or at least differentiated from the Store, should the Operators decide to maintain it in parallel with their Store – this appears to be the choice of Vodafone, TIM and H3G –; in the same way, Operators may try to rearrange their relationship with Mobile Content & Service Providers, as these players strive to reposition their offer in the converged Mobile-Web marketplace. Should this reshaping strategy prove unfeasible or unsustainable, the MNOs may opt for divesture.

Those non core resources which instead show a steady or a variable trend, and are to some extent necessary for operating in the business, should be held: this is the case for financial solidity, and also for the Application Store itself, which is required for presenting an offer to the end user.
### Table 1. The R&C&C Portfolio Synergies Identification Matrix

This step of the framework provides practitioners with a straightforward guide to manage the resources portfolio, which can be also employed to carry out a benchmarking analysis of competitors. However, the simple nature of the guidelines proposed shall not drive to overlooking the complex interplay of different resources, competencies and capabilities, which can deeply affect one another. For instance, while Operators can decide to divest from the Portal, they must be aware that such choice will force them to migrate the Portal content – and users – towards the Store, potentially affecting its presentation features and customer experience – due to a “content galore” and “branding” of pages; also, should the Operators decide to cease their relationships
with Service Providers, they should consider the repercussions on CBA systems and network functionalities, of which MCSPs are currently the main consumers.

A preliminary phase of synergies identification as in Table 1, which spots the positive or negative reciprocal influences of resources, can help avoiding committing dreadful mistakes that may weaken core resources and consequently jeopardize competitive advantage.

VI Discussion and conclusions

A shift in the overall paradigm entangling how goods and services are delivered and presented to end customer, by what actors and according to which strategies and business models has deep strategic implications concerning key firms’ core resources endowment.

The R&C&C dynamics show a trend towards the transformation in competition nature and strategic positioning. Coherently to what several authors argue, the changes in the market structure – e.g. higher complexity and interdependency – and in the internal resources portfolio determined by new distribution channels also affected the way firms relate, creating new opportunities [9], and bringing about a shift from pure competition intended as aggressive contrast [19] to a hybrid process of interaction that combines competition and cooperation [48][49][50][51]. This study provides empirical evidence that such forced “co-opetition” situation can be encountered in the Mobile market with reference to the competitive dynamics involving MNOs, DMs, WCs, and MP&OS vendors, “friends and foes” at the same time: the pre-existing competitive balance was shaken by the Mobile-Web convergence and the alternative models it enables, forcing the value network focal firm to newly develop or improve relational competences, as well as dynamic capabilities like open innovation and resilience to capture Schumpeterian rents within a heterogeneous system.

Innovations also force incumbents and newcomers to shape their strategy and business models accordingly. The strategic move put in action by Apple exploited the limits of the Operators initial over-controlling strategy: to break into the well-guarded Content market, it put up an indirect assault [52] that crept from outside the business area’s boundaries as traditionally conceived; the innovation was so radical that it abruptly altered some “rules of the game” [40]. As this newcomer’ and other followers’ revolutionary moves came into play, incumbents were forced to take a stance on the undergoing change. Following a scheme to classify counterrevolutionary strategies
proposed in D’Aveni, Gunther [42], MNOs seem to be adopting a “shaping” and “absorption” strategic response to tackle this innovation: they are trying to embrace and interiorize it rather than contrast it. It may appear they hyperactively jumped on the Application Stores bandwagon too quickly, mostly for marketing reasons, with the risk of wasting resources and destroying existing strengths without acquiring new ones. Still, given the push towards free or advertising-based models – with the largest share of revenues coming from data traffic – Web Companies are trying to transfer to the Mobile market, Operators may also be interpreting Stores as a “necessary evil”, the only way to preserve part of the original premium model.

As shown in this concluding section, the distribution paradigm shift is a complex, multifaceted issue: the proposed framework supports both researchers and practitioners in assessing this condition of critical discontinuity, and it is characterized by interesting properties. It holds a methodological value, as it introduces original concepts of R&C&C categories (traditional core, traditional hygienic and emerging core) and R&C&C evaluation (core, semi-core, non core). It has a descriptive value, as it supports the identification and dynamic description – which compares the *ex ante* with the *ex post* context, before and after the paradigm shock – of the discontinuity represented by the swift change in the distribution model, also filling the gap between managerial perceptions – the thought-to-be-core resources collected in the first step – and rigorous assessment – the application of the literature-based tests –. And it shows a normative value as well, since it delivers a set of general strategic guidelines to drive the process of managing a firm’s R&C&C portfolio, and in turn reshape the business strategies accordingly.

Future research shall be directed towards the provisioning of framework validation in different contexts characterized by high discontinuity, where a resource-based approach can disclose major strategic implications and help managers to identify, to evaluate and to take good care of the true sources of their competitive advantage.

**References**


Chapter 3

3 CONCLUSIONS AND FUTURE DEVELOPMENTS

3.1 A CONCLUSIVE APPROACH LINKING THE STRATEGIC DIMENSION INVESTIGATED

The present PhD Thesis’ has dealt with the upfront issue of strategy analysis within the ICT-intensive and volatile Mobile Telecommunications environment, specifically focusing on the relationship between core strategic dimensions, such as:
- Strategy definition and Strategic Planning;
- Business Model Design and firm performance;
- Value network Configuration;
- Innovation;
- Internal Resources, Competencies and Capabilities management;
- Exogenous and endogenous discontinuity assessment.

A conclusive approach linking strategic planning and discontinuity is synthesized and proposed in Figure 3.1.
The approach argues that the traditional 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. **Discontinuity assessment**.

Strategy formulation refers to the traditional planning activity, which relies on the Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis so as to identify opportunities and threats.

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 studies carried out allow to infer that such step is mainly related to a concretization of strategy in terms of:

- the company’s Business Model, which operationalizes the selected business strategy according to a set of significant parameters or building blocks, namely “Value Model”, “Value Creation and Delivery” and “Value Capturing” – for a thorough discussion of the business model design unified framework proposed, see Chapter 2 – Part 4 –, and drive a firm’s performance;
the Value Network Configuration, seen as the interrelation and strategic interplay of different business models adopted by different firms operating within the business area – e.g. the Mobile Industry –;

- the exploitation of the resources, competencies and capabilities endowment – as spotted in the internal strategy analysis phase – 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 –, to the adopted business model, and to the business area’s value network configuration.

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

The nature of discontinuity can be twofold:

- **environment-driven**, if it is triggered by outbound phenomena and events which are not directly controllable by the single firm – e.g. industry-wise technological convergence –;

- **enterprise-driven**, if it springs from inbound processes or dynamics, either implicitly – e.g. emergent resources, competencies or capabilities not resulting from a clear strategic commitment, unexpected innovations – or explicitly – e.g. deliberate strategies catalyzing innovation and creativity (Hamel, Prahalad, 1994; Kim, Mauborgne, 2004) –.

Assuming that strategy is concretely executed through designing a business model, configuring a set of value network relationships and leveraging on a portfolio of resources, competencies and capabilities, 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 business model application –;

- **value network configuration** – resulting from the interplay of strategic relationship among different firms –;

- **resources, competencies and capabilities core status**, that is, 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:
- **business model performance radical variations** – outside a given range of values defined for each and every business model parameter, as discussed in Chapter 2 – Part 4 –;

- **value network reconfiguration** – determined, for instance, by entry or exit of market players, new value creating/destroying activities emerging, change in the government of strategic interdependencies among firms, as described in Chapter 2 – Part 2 –;

- **resources, competencies and capabilities modifications in terms of their core/non core/hygienic status and contribution to competitive advantage** – see Chapter 2 – Part 8 –.

When a discontinuity is identified through such analysis of variations, the overall strategic alternative currently pursued by the firm – and executed through its business model, its choice of collocation within the value network and its policies for resources, competencies and capabilities management – might 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 replanning appears necessary. The variation of business model, value network and core resources endowment outcomes hence become a “vector” of input for a new strategic replanning process meant to take into fair account the discontinuous event.

As a whole, according to the conclusive approach presented above, the constructs of Value Network and Business Model, together with the resources endowment, are originally reinterpreted in a new role within the Strategic Planning process, since they serve as tools to spot any exogenous or endogenous discontinuity, consequently triggering a process of replanning on the basis of the newly emerging context.

### 3.2 THESIS FINDINGS AND VALUE

Strategic Management within uncertain, volatile and dynamic environments is a major issue both academics and executives are to address and cope with. The present PhD Thesis provides a set of rigorous strategy analysis model with a straightforward value for managers, as they can support the phases of strategic re-planning after discontinuous events, business model design, value network analysis and resource management.
In the light of the previous discussion, the PhD Thesis’ main contributions can be synthesized as follows.

The Thesis, through the vast literature review and the longitudinal exploratory single case studies as a methodology, crafts an overall Reference Framework for Strategy Analysis of the highly volatile, ICT-intensive Mobile Telecommunications Industry. Consistently with such Reference Framework, the Thesis hence provides a set of original strategy analysis models with significant and intriguing implications.

- The Value Network model is applied to the empirical context of reference, so as to:
  - identify the key activities performed to achieve the network objective – i.e. service delivery and market making –;
  - define the main actor typologies involved;
  - and shape a set of feasible noteworthy network configurations, further analyzed in terms of their strategic implications.

- The Business Model concept is reviewed and originally revisited so as to provide a unified framework – based on an extensive literature analysis on the subject – to be further applied to the significant actor typologies under scrutiny. The relationship between Business Model Design, Strategy & Strategic Planning, and Innovation is also fully discussed.

- The hot topics and open issues related to Strategic Planning and Business Model Design in dynamic, volatile and discontinuous environments are disclosed and discussed.

- The Value Network configuration and Business Model performance are reinterpreted in a new role within the Strategic Planning process, being tools to spot any exogenous or endogenous discontinuity and trigger a process of re-planning on the basis of the newly emerging context.

- The impact of volatility on a firm’s resources, competencies and capabilities (R&C&C) is addressed, and the importance of a proper resource management is restated through the provisioning of an original framework supporting the assessment of traditional and emerging R&C&C ex ante and ex post the discontinuous event.
The Thesis’ main strengths, as inferable from the above mentioned contributions, are the following:

- the focus on a significant set of strategic issues within an intriguing and relatively recent Industry;

- the comprehensiveness of the overall reference framework’s scope, which allows to tackle several noteworthy issues related to the interplay between Strategic Planning, Business Model Design, Value Network configuration, innovation and discontinuity;

- the extensive, detailed and integrated literature review, which bridges many literature streams, disciplines and constructs, so as to shape combined original strategy analysis models;

- the rigor of the research methodology employed and the richness of the theoretical sample, which allowed to gather a huge amount of primary and – to a lesser extent – secondary data and information through 140 longitudinal single or multiple case studies and qualitative interviews on a comprehensive set of actors operating within the industry under scrutiny.

The Thesis’ findings have a significant value for the following stakeholders:

- academics, as the work deals with the upfront issue of strategy analysis in ICT-intensive and volatile environments, specifically focusing on the relationship between core strategic dimensions such as: strategy definition and strategic planning, business model design, value network configuration, innovation, resource management and exogenous/endogenous discontinuity;

- managers/practitioners of both incumbent and new entrants firms, as the provided models can support the phases of strategic analysis and re-planning after discontinuous events, business model design, value network analysis and resource management

3.2.1 LIST OF PUBLISHED FINDINGS

A comprehensive list of the PhD Thesis findings published on international scientific outlets – Journals, Book Chapters and Conference Proceedings – is provided below.

Journal Publications

2. GHEZZI A., RENGA F., BALOCCO R., PESCETTO P. (2010). Mobile Payment Applications: offer state of the art in the Italian market. INFO, ISSN: 1463-6697

Book Chapters


Conference Proceedings


3.3 RESEARCH LIMITATIONS AND FUTURE DEVELOPMENTS

As any piece of work striving to capture complex and dynamic real-world cases within rigorous models, the presented Doctoral Thesis shows a number of limitations. The general work’s limitations can lead back to the following issues.

- Width of the research scope and complexity of the research questions. The Thesis’ scope is significantly wide and its aims are ambitious. However, these issues are to some extent solved by the fact that the paper collected attempt to focus the analysis on a set of key issues – e.g. the relationship between strategy, business model design, value network configuration, innovation, resource management and discontinuity – and on a narrower set of actors – apart from Chapter 2 – Part 2, whose aim is to identify the broad set of players involved in the market under scrutiny, each study is carried out through by taking the perspective of a specific “strategic subject” or actor of reference, e.g. Mobile Network Operators, Device Manufacturers, Mobile Middleware Technology Providers —. The choice of restricting the actual research scope to significant strategic dimensions and key actors makes for a less dispersive and more consistent analysis.
Focus on theory building and qualitative exploration, explanation and exploitation, rather than quantitative theory testing. The Thesis deals with upfront strategic issues, thus it takes a qualitative stance towards research: qualitative research methodology was chosen as particularly suitable for reaching the research objectives, which aim at understanding the complex phenomena related to strategy analysis within a given ICT-intensive industry – that is, the Mobile Telecommunications Industry – characterized by a high level of volatility and competitive turbulence, and at thus building new theory, or extending existing theories, on it. As a consequence, the research effort is focused on the qualitative generation of original models rather than on its testing on different samples or contexts, or through quantitative methodologies. Models validation will need to be left to future research efforts.

Apparent “reactive” nature of the conclusive approach presented in Figure 3.1. The strategy analysis models generated with reference to Step 4 – Strategic Discontinuity Assessment of the Reference Framework may appear to be promoting a reactive rather than a proactive stance among Mobile players, as they focus on how to act after a given discontinuity took place. However, as explained in Section 3.1, the guidelines provided in terms of Business Model Design, Value Network Configuring and Resources, Competencies & Capabilities Management, if consistently and iteratively applied, can make the approach proactive, i.e. capable of supporting the enterprise-driven generation of a positive discontinuity. This overall approach shall be seen as integrative to the traditional environmental scanning activity (Aguilar, 1967; Ansoff, Slevin, 1968; Fahey, King, 1977; Daft et al., 1988; Ebrahim, 2000) – pertaining to the external strategy analysis phase –, the competitive differentials generation (Porter, 1985; Peppard, Rylander, 2006) and the resources endowment management (Hamel, Prahalad, 1990; Collis, Montgomery, 1995) – belonging to the internal strategy analysis phase –; they could also benefit from an integration with an innovation perspective pushed by several innovative strategic paradigms (e.g. Goldman et al., 1995; Hamel, Prahalad, 1994; Kim, Mauborgne, 2004), explaining how to ignite innovation and creative discontinuity, not only how to govern it.
Study-specific limitations are discussed within each stand-alone paper collected in Chapter 2.

The disclosure of the aforementioned limitations can support the setting of the agenda for future research.

The first, straightforward direction for future developments is related to providing validation and testing through quantitative methodologies for the qualitatively-derived models crafted.

In addition to this, future research should focus on the completion of the analysis proposed by the Reference Framework with reference to all the significant Mobile actors identified in Chapter 1 – Section 1.2; the Thesis focused on the provisioning of strategy analysis models which considered some key players – mainly MNOs, DMs, MMTPs – as the strategic actor of reference, and future research should be devoted to scrutinize some emerging players such as Web and Media Companies, whose currently fuzzy strategic positioning may sooner or later heavily influence the industry evolution and strategic dynamics.

Finally, given the broad scope and ambitious aims of the work of Doctoral Thesis, whose findings may potentially have a significant impact on Strategic Management literature stream far beyond the specific Mobile environment investigated, future research effort should be put in looking for models generalization to different empirical contexts – e.g. the New Televisions Industry – characterized by similar traits, such as: the complexity of the market structure; the proliferation of market players and feasible strategies to adopt; and the intensity of radical innovations and volatile dynamics.
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