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**"ANALYSIS OF DYNAMIC CAPABILITIES IN THE
INTERNATIONALISATION PROCESS"**

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ABSTRACT

Dynamic capabilities are firm's ability to integrate, build, and reconfigure internal and external resources and competences to address and shape rapidly changing business environments. In order to overcome internalization theory deficiencies, they have been advanced by eminent professor at Berkley University David J. Teece so as to explain multinational enterprise internationalization. Sensing specifically becomes the firm ability to identify business opportunities abroad. Seizing instead involves being able to address such foreign opportunities. Transforming is declined for the purposes of this study in the management of the relationship between headquarter and its subsidiaries and offices abroad. After having reviewed studies covering such issue, main purpose of this analysis is to investigate how dynamic capabilities manifest themselves in international expansion of a Multinational enterprise.

In order to do so, a qualitative case-study having as subject Telecom Italia Sparkle S.p.A. is presented. The company is a leading global international telecommunications provider with a significant international presence.

While sensing and seizing capabilities are easily identified and observed, company structural limits which do not make possible transforming capability nurturing are presented.

On the lights of such empirical analysis, theoretical contributions linking dynamic capabilities to internationalization rationale and entry-modes and managerial implications are provided.

PART I

DYNAMIC CAPABILITIES

1. Introduction

“Innovation has nothing to do with how many R&D dollars you have...It’s...about...how much you get it”.

Behind what Steve Jobs means by *“how much you get it”* it lies the concept of dynamic capabilities, developed starting from the end of the XX century by David J. Teece, eminent professor at the University of California, Berkeley.

In fact, listening to Job’s colleagues, his ability was to manipulate the reality, to get things done which were unimaginable or impossible to others. He was able to see beyond, not only reacting to the changing environment, but also trying to shape it, unveiling customers’ desires before they know them (Isaacson, 2011).

The global economy has drastically changed since the Industrial Age, which was characterized by mass production and supply- driven economy. Nowadays, almost each Industry is subjected to hyper-competition and rapid change (Teece, 2010).

Liberalization of labor and financial markets, the removal of barriers to trade, the increasing flow of information and data, in one word globalization, have altered the way in which business enterprises operate and compete.

The world has become flat and intermediate goods or services are now widely available (Friedman, 2005). In this system of global specialization, economies of scale or scope cannot be anymore source of competitive advantage since even small businesses can outsource to contract manufacturers which pass on the benefits of scale (Teece, 2007).

Instead, the development and the ownership of intangibles such as technological know-how emerges as base of competitive advantage (Teece and Pisano, 1994). Since the possession of knowledge per se does not guarantee any rent, this must be mixed with other intangibles and

physical assets to make a product. Therefore, the ownership or the control of complementary assets is of great importance (Teece, 1986)¹.

Given this macro-scenario, managers themselves recognize that enterprise success does not depend simply on being productive in R&D, introducing new products, adopting best practices and delivering quality products and services. In the meanwhile, enterprise should implement complementary organizational and managerial innovations, which stimulate and support firms' evolution (Teece, 2007).

In the following chapters the concept of dynamic capabilities, their nature and their micro-foundation will be examined in depth.

2. Dynamic capabilities: a new way to explain competitive advantage

The concept of dynamic capabilities was introduced the first time in 1994 by Teece and Pisano. Dynamic capabilities are described as the firm's ability to integrate, build and reconfigure internal and external resources and competences to address and shape rapidly changing business environments (Teece and Pisano, 1994).

For the authors, the adjective dynamic is used to underline the shifting character of the environment that, as previously mentioned, is characterized by fast competition and rapid innovation.

The term capability instead highlights the key role of strategic management in adapting, integrating and reconfiguring internal and external skills, resources and competences towards a changing environment.

In this sense, dynamic capabilities can be thought as the speed and degree at which the firms align their resources to the business environment. This is defined as the "*orchestration*" capability of the firm, through which management is able to find new value enhancing combinations inside, between and outside the firm (Teece, 2007).

Strong dynamic capabilities ultimately allow a company to build and renew its resources and assets both inside and outside its boundaries, orchestrating them in order to respond or even bring about changes in the business environment (Teece et al,1997).

¹ Complementary or co-specialized assets are assets that are uniquely valuable in combination (Pitelis and Teece, 2010).

They allow the enterprise to make conjectures about the development of customers' preferences, business problems and technology, fine-tune them and then act by realigning assets and activities in order to enable continuous innovation and change (Teece, 2014b).

Below some of the numerous definitions given to dynamic capabilities during the years²:

- *“The capacity of an organization to purposefully create, extend, or modify its resource base”* (Helfat et al., 2009);
- *“The abilities to re-configure a firm’s resources and routines in the manner envisioned and deemed appropriate by its principal decision makers”* (Zahra et al, 2006);
- *“Those that operate to extend, modify or create ordinary (substantive) capabilities”* (Winter, 2003);
- *“The firm's processes that use resources - specifically the processes to integrate, reconfigure, gain and release resources to match or even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resources configurations as market emerge, collide, split, evolve and die”* (Eisenhardt & Martin, 2000);

Teece’s framework aims at explaining competitive advantage in mutated business contexts characterized by fast pace competition, rapid innovation and globalization.

Different approaches for strategic management have been proposed by scholars in order to explain sustainable competitive advantage (Teece et al, 1997).

Clearly the most influential is the one developed by Porter in 1980, which highlights those actions a firm can undertake to build defensible positions against competitors. Essentially, once firms choose an industry they consider attractive, they develop an entry strategy based on conjectures about competitors’ rational strategies and then acquire the assets to compete in such industry (Teece et al, 1997).

Then, the strategic conflict developed by Shapiro in 1989 follows. By using the tools of Game Theory, here the focus is on the actions which allow firms to keep their competitors off- balance through different techniques such as strategic investments, signaling and others (Teece et al, 1997).

The resource based perspective started with Penrose instead finds the source of competitive advantage in the specific capabilities and assets the firms are endowed with. Firms are then

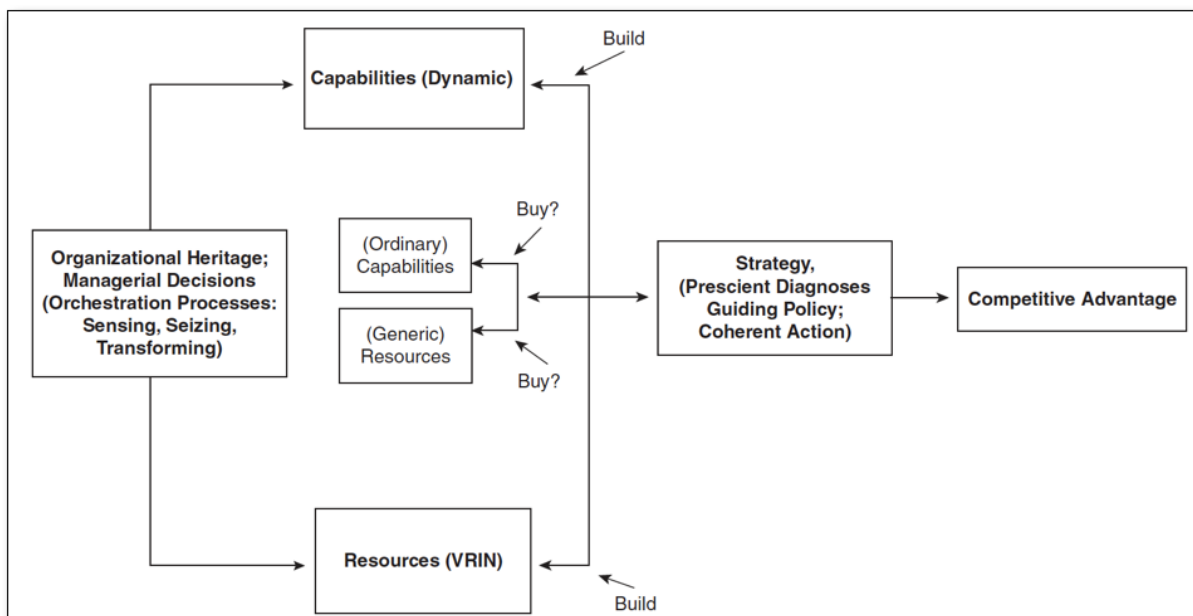
² For a more complete understanding of all the definitions given to dynamic capabilities please refer to Zahra et al (2006).

heterogeneous in terms of resources. In this case once firms identify their unique resources and decide in which markets those resources can earn the highest rents, they decide if those rents are better utilized by integrating into related markets, by selling the intermediate product or selling the assets themselves. Resources generating competitive advantage were defined by Barney as those satisfying the VRIN criteria (Teece et al, 1997)³.

Dynamic capabilities framework is a development and an extension of the resource based approach.

The resource approach implies that competitive advantage flows from heavy endowment or investment in the right resources. This static view of competitive advantage is integrated by the managerial coordination of resources, the orchestration capability just mentioned.

Figure 1. Logical structure of the dynamic capabilities paradigm



Source: Teece (2014a)

VRIN resources alone do not generate long-term enterprise value and the same is for dynamic capabilities. In fact, they must go hand in hand (Teece, 2014a).

How it can be easily understood by looking at Figure 1, this result can be achieved only if strong dynamic capabilities, VRIN resources and a good strategy are jointly present.

Strategy is fundamental in deploying firm’s unique resources and surpassing competitors. It can be defined as a “*coherent set of analyses, concepts, policies, arguments and actions which*

³ Most of VRIN resources are intangible and a market for them cannot be built. Know-how and learning are clear examples (Teece, 2014b).

respond to high stake challenge. It is made of a good analysis, a guiding policy and a coherent action" (Rumelt, 2012).

Dynamic capabilities are fundamental for the necessary adjustments firms must put in place. Because of non-tradability of assets like culture, values and organizational experience and their highly tacit component, dynamic capabilities must be built and are difficult to replicate by the firm itself (Teece and Pisano, 1994).

How does this translate into superior economic performance?

Abnormal returns can be generated because the idiosyncratic resources/ competences re-aligned so as to match the business opportunities are not priced by the market at their value to the buyer if he owns complementary and co-specialized assets (Teece, 2010).

Too low attention has been given to important theme such as innovation, learning and role of managers.

3. Clusters and micro-foundations of dynamic capabilities

The concept of dynamic capabilities could sound generic (Teece, 2007).

To solve this issue, Teece, Pisano and Shuen tried to understand which factors dynamic capabilities rest on (Teece et al, 1997):

- *Processes;*
- *Positions;*
- *Paths.*

Processes relevant to dynamic capabilities are coordination and integration, learning and reconfiguration.

The first one, coordination and integration, has to do with the organization of the activity inside the firm. It means combining the various resources in an entrepreneurial fashion⁴.

The second one, learning, is a dynamic concept that enables new production opportunities to be identified. Through practice and experimentation, it allows tasks to be performed more effectively. It requires codes of communications and coordinated procedures.

⁴ There is empirical research showing how the way production is organized by management determines differences in firms' competences such as quality performance (Garvin, 1988).

The last one, reconfiguration, means changing the firm’s asset structure in order to achieve the required internal and external transformation. It means recombining and modifying existing resources (Teece, 2014b).

Positions stand for the resources, not just balance sheet assets, the company endows with. Extremely important resources are human capital and knowledge assets.

The firm path represents the choices and the investments a firm makes following its strategy. Path dependencies must be taken into consideration since opportunities and future behavior follow from firm’s previous activities.

Successively, in order to shed lights on the question more precisely, three classes of dynamic capabilities were identified, each of them resting on a particular set of processes, skills, procedures, organizational structures, decision rules and disciplines.

Specifically, the classes of dynamic capabilities are (Teece, 2007):

- *Sensing*: identification, development, co-development and assessment of technological opportunities in relation to customers’ needs;
- *Seizing*: mobilization of resources to address opportunities;
- *Transforming*: continued renewal.

Figure 2. The interrelation between dynamic capabilities and strategy

Strategy kernel	Diagnosis	Guiding policy	Coherent action
Related dynamic capabilities clusters	Sensing	Seizing/Transformation	Seizing/Transformation
Nature of managerial orchestration	Entrepreneurial	Administrative	Leadership

Source: Teece (2014a)

Figure 2 emphasizes the interrelation between strategy (as defined by Rumelt) and dynamic capabilities.

While sensing contains a strong element of diagnosis, both seizing and transforming require a guiding policy and a coherent action (Teece, 2014a).

Moreover, Figure 2 highlights the nature of managerial orchestration which will be better analyzed in the following chapters.

Defining managerial traits, management systems and organizational design that will keep the enterprise alert opportunities and threats (sensing), execute those opportunities (seizing) and constantly morph (transforming) is the final goal of the dynamic capabilities framework (Augier and Teece, 2008).

The three clusters of dynamic capabilities take place inside the firm simultaneously and sometimes they overlap (Teece, 2010).

Some firms will be stronger than others in performing some or all the task (Teece, 2012).

Below, each cluster of dynamic capabilities will be briefly discussed.

3.1 Sensing (Teece, 2007)

Sensing is the most entrepreneurial class of dynamic capabilities.

It involves scanning, creating, learning and interpreting the business environment: broadly speaking what's going on in market⁵. In fact, as the market evolves, customers' tastes, product technologies and competitors' positioning might change and the firm should be able to detect it. Sometimes is not even a matter of searching new innovations, but of combining complementary innovations in order to solve a problem.

Once opportunities are recognized, then decisions on which technology to pursue and which market target to address need to be made while figuring out in which ways competitive forces will respond. In fact, competitors might not be aware of the opportunity or might evaluate it in a different way.

Sensing requires access to information as well as the ability to effectively recognize opportunities by making a sense of whatever kind of information is captured. This in turn depends on the individual knowledge and creativity.

It is preferable to embed scanning, interpretative and creative processes inside the whole enterprise instead of leaving them to a small and certain group of individuals. However, since much of what is gathered is of low importance, hypothesis development, testing and synthesis (filter) of the information obtained must be performed by top management.

The whole firm and the individuals who are part of it need to be on alert in order to capture and anticipate any opportunities which could emerge from the business environment.

Management needs to make conjectures about future developing working hypotheses while taking decisions in order to choose path to be followed.

⁵ The continuous search for new technology, the effort to understand latent demand and the likely evolution of industry is consistent with Kirzner (1973) and Shumpetern (1934) views. The former stresses how entrepreneurs take advantage of disequilibria due to differential access to information making the economy move back to equilibrium. The latter emphasizes how they upset the equilibrium through new information, new knowledge and new opportunities.

Therefore, more decentralized organizations with greater local autonomy are preferred because the risk to be blindsided by market and technological developments is lower. Acting in such way it is easier to keep management informed and not isolated from the lower levels of the organization (Teece et al, 1997).

Certainly R&D activity helps sensing what's going on in the business environment in terms of new products and processes. This kind of search however is focused on core businesses and needs to be integrated by involving customers, suppliers and complementors.

As development in science emerges and customers' needs change, processes which tap with supplier and complementors' innovation are of great value⁵.

Sensing can be facilitated if supported by an analytical framework enabling filtering and calibrating opportunities. Such framework cannot be the Five Forces by Porter for the reason explained previously and should be the dynamic capabilities framework.

Summing up, sensing means:

- Gathering and filtering information from both inside and outside the firm;
- Making a sense of it;
- Figuring out implications for action.

3.2 Seizing (Teece, 2007)

Once an opportunity is sensed, then it has to be executed by committing financial resources to investments in development and commercialization.

Sensing and seizing are similar to two potentially incompatible activities discussed in managerial literature: exploration (research on new technology) and exploitation (selling mature products) (March, 1991)⁶.

More than decisions about when, where and how much to invest, the critical issue here is the selection of the specific business model and its organizational design which ultimately defines investment and commercialization strategies while supporting innovation⁷.

⁵ Innovation is not pushed from the firm to the market. Innovation is open to the external business ecosystem. (Chesbrough, 2003).

⁶ A solution is given by the concept of “*ambidextrous organization*” (O’ Reilly and Tushman, 2008).

⁷ In particular, the timing of investment depends on the existing firm’s position with respect to complementary assets; enterprises well positioned can wait, while those that are not must scramble especially if there are increasing returns by which “*who gets ahead stays ahead*” (Mitchell, 1991).

Creating, adjusting, crafting business model is perfectly in line with dynamic capabilities spirit and building an effective and efficient one is extremely important.

Business model describes how the firm creates value for its customers and how such value is captured by the firm; its function is to articulate the value proposition offered to the client, select the appropriate technologies and features, target market segments, define the value chain structure and estimate revenues and cost structure (Chesbrough and Rosenbloom, 2002).

Seizing opportunities means defining which are the enterprise boundaries as well. In innovation seeking firms this involves taking into account different aspects such as appropriability regime, complementary assets of both the firm and competitors and industry development phase (Teece, 1986).

Innovation stimulates integration for transaction costs and capabilities reasons, especially if capabilities are not widely distributed in the industry. Those assets that are in competitive supply instead will be outsourced.

As already stated, investment decisions, especially in high-technology industries, are not driven anymore by scale or scope but by co-specialization and customer themselves tend to focus on the system rather than on the single product.

Therefore, issues such as network effects and dispersion in the innovation of complementary products must be taken into account into seizing decisions.

Scouting opportunities and executing them are two activities that cannot be separated. The problems arise because inside the organization those who promote a new idea have to defeat those who rely on past successes (e.g. managers of established product lines) in order to overcome cannibalization bias, transforming internal views and facilitating new investments.

Capital budgeting techniques tend to support investments for which future cash flow are more probable and the bureaucracy of highly hierarchical organizations slows down the process of addressing innovation and new opportunities.

It turns out that management must be extremely sensitive to the presence of decision-making biases in investment processes in order to overcome them⁸. This in turn depends on the quality of enterprise's routines, decision rules, strategies and management leadership in business opportunities evaluation.

⁸ Among decision making biases there are the certainty and isolation effects. The former stresses the fact that less probable outcomes are discounted in decision-making with respect to outcomes that are certain. The latter is the result of considering options in isolation then undervaluing possibilities for risk pooling (Teece, 2007).

Summing up, seizing means:

- Committing financial resources to the development of the opportunities sensed;
- Designing the right business model;
- Overcoming decision making biases being cautious in evaluating intangibles such as co-specialization, path dependency and opportunity costs.

3.3 Transforming (Teece, 2007)

Identifying a new technological or market opportunity, designing a new business model and addressing new financial resources in order to sustain enterprise growth means being able to recombine assets and organizational structures while keeping them constantly aligned with market environment changes. This involves changing routines and procedures which are not functional anymore: in few words, it involves transforming.

Decentralization is fundamental in to keep decision-makers in contact with the customers and new technologies. In fact, too hierarchical structures tend to be isolated from the marketplace. For the same reasons, the multidivisional form (per product or geographic region) has been widely adopted by firms and has substituted the more traditional functional form. The goal is to achieve a greater accountability for managers' decisions shortening the recognition of opportunities time.

Transformation takes place in order to achieve organizational fit and co-specialization which can be between assets, strategy, procedures and structures.

Management has to be able to identify all the opportunities for co-specialization by buying co-specialized assets or building them.

Ability to manage learning and knowledge is important if firms want to sustain their transforming capabilities. Incentives structures have to be designed in order to produce new knowledge and sustain learning (Zahra et al, 2006).

Knowledge has to be well managed within and outside the firm (Chesbrough, 2003).

Especially when transferring proprietary knowledge and technology across enterprise boundaries, a corporate governance able to assist in the transfer of knowledge must be developed.

Summing up, transforming means:

- Changing routines and procedures which are not functional anymore while keeping sustaining learning and knowledge production;
- Overcoming inertia created by operational routines and capabilities, thus making firm's strategy more changeable;
- Making the firm change before it is mandatory.

4. Dynamic capabilities versus ordinary capabilities

Organizational capabilities can be generally thought as sets of current and potential activities which utilize firm's productive resources in order to make or deliver products or services.

By adopting a multidimensional perspective in defining organizational capabilities, such architecture, proceeding from the bottom to the top, can be disassembled in (Salvato and Rerup, 2011):

- *Individual skills*: the individual characteristics and abilities which determine job performance and depend on individual learning (Salvato and Rerup, 2011);
- *Routines/ Processes*: repeated action sequence about how enterprise gets things done. They might transcend the individuals involved (Teece, 2012);
- *Ordinary capabilities*: firm level assemblage of routines necessary to the execution of current plans which fall in the following categories: administrative, operations and governance (Teece, 2014b).
- *Dynamic capabilities*: they are a particular sub-set organizational capabilities. Dynamic capabilities are those capabilities which allow to change ordinary and operational routines. They are higher-order capabilities governing the rate of change of ordinary capabilities (Collis, 1994). Broadly speaking, if product development were an ordinary capability, then the capability to change product development capability would be a dynamic capability (Zahra et al, 2006).

In order to define dynamic capabilities it turns out to be extremely useful to differentiate them from ordinary capabilities, also defined operational capabilities or analytic capabilities.

Two measures of fitness can be adopted to discriminate between the two classes of capabilities: technical fitness and evolutionary fitness. The former is defined by how good is a capability in performing its function, while the latter is defined by how well such capabilities enable firm to survive and cope with the changing environment (Helfat et al, 2009).

Broadly speaking, ordinary capabilities are those capabilities which assist enterprises in “*doing the things right*” while dynamic capabilities assist them in “*doing the right things and in the right moments*” (Teece, 2014b).

Ordinary capabilities can be taught as the “*0 level capabilities*” of a firm: all the activities which allow firms to produce and sell the same product to the same customer over time, “*making them a living*” (Winter, 2003).

Ordinary capabilities can be benchmarked and measured against best practices, which are then ordinary capabilities too, the best ones.

It is quite immediate to understand that ordinary capabilities cannot be a source of durable competitive advantage. The know-how they are built on is even more explicit and can be easily acquired or learned by firms through outsourcing, consultancy or through investments in training (Bloom et al, 2013).

They are fundamental in achieving efficiency through the use of ordinary resources, but the continuous pursuit of such goal risks to undermine enterprise ability to effectuate change, causing internal inertia.

Dynamic capabilities instead allow enterprises to continuously build and renew their assets, reconfiguring them as needed to respond to or shape business environment (Pisano and Teece, 2007, Teece, Pisano and Shuen, 1997)⁹.

Dynamic capabilities direct ordinary capabilities to high demand uses, developing new capabilities and allowing asset realignment by coordinating internal and external resources to respond to or to shape business environment. Such managerial orchestration can be considered as playing the same function price plays in the market, but inside the firm (Teece, 2015).

By continuously realigning assets, in particular VRIN resources in order to validate conjectures about business future directions, firms are able to outperform competitors which are stuck with current resources and business model; this either because they do not sense the need to change either because they are not able to overcome the inertia just described.

Differently from ordinary capabilities which are built on best practices, dynamic capabilities are built on signature processes, result of firms’ heritage and past managerial decisions which make them hard to imitate (Teece, 2014b).

The specific strategic weight the two sets of capabilities described is different.

In mathematical terms, it could be said that ordinary capabilities can take values from 0 to 1 while dynamic capabilities can take both positive and negative values ($-\infty < d.c. < +\infty$).

⁹ Dynamic capabilities develop also in response to different situations, others than environmental, such as the internal pressure for change. (Zahra et al, 2006).

Potentially, dynamic capabilities can confer firms a considerable competitive advantage over rivals. However, they can be weak and originate misguided actions (Teece, 2007). Only if the benefits arising from their use balance the costs from sustaining them, an investment in their building is preferable to simple ad-hoc problem solving¹⁰ (Winter, 2003). To reassume, Figure 3 reports the differences explained above.

Figure 3. Differences between ordinary and dynamic capabilities

	Ordinary capabilities	Dynamic capabilities
Purpose	Technical efficiency in business functions	Congruence with customer needs and with technological and business opportunities
Tripartite schema	Operate, administrate, and govern	Sense, seize, and transform
Key routines	Best practices	Signature (upgraded) processes
Managerial emphasis	Cost control	Entrepreneurial asset orchestration, leadership, and learning
Priority	Doing things right	Doing the right things
Imitability	Relatively imitable	Inimitable
Result	Technical fitness (static efficiency)	Evolutionary fitness (ongoing learning, capability enhancement, and alignment)

Source: Teece (2014b)

5. Routines versus entrepreneurial action

Going back to the definitions reported in the beginning of the part, Eisenhardt and Martin (hereafter EM) define dynamic capabilities as *“the firm’s processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die”* (Eisenhardt and Martin, 2000).

Despite the fact that in EM opinion in fast moving environments dynamic capabilities break down into unstable and experiential simple rules, following their definition such capabilities are specifically defined as processes and routines. Examples like M&A, alliancing, product development and resource allocation processes are made by the authors¹¹.

Moreover, EM characterize those processes as best practices, by affirming that while dynamic capabilities may be *“idiosyncratic in their details”*, they also exhibit *“commonalities”* that make them equally effective across firms (Eisenhardt and Martin, 2000).

¹⁰ Firms are always pushed to cope with changes, also if they do not have dynamic capabilities. They may be pushed into high paced, contingent and creative firefighting mode, called ad hoc problem solving. It is not routine, not highly patterned and not repetitious (Winter, 2003).

¹¹As example, Yahoo alliancing process consists in a two-rules routine: no exclusive alliance deal; the basic service provided by the deal must be free (Eisenhardt and Martin, 2000).

As it is easy to understand this definition of dynamic capabilities as best practice is completely at odds with the one offered by Teece.

Below two quotes by Teece that makes clear how these views cannot coexist:

- “A well understood and replicable best practice is not likely to constitute a dynamic capability” (Teece, 2007): in Teece opinion EM are simply referring to what he recognizes as ordinary capabilities (Teece, 2014b);
- “Dynamic capabilities reflect an organization’s ability to achieve new and innovative forms of competitive advantage” (Teece et al, 1997): if dynamic capabilities were best practices they could not be source of competitive advantage. Because of their commonalities and equifinality they would not comply with VRIN criteria.¹²

Strictly related to this, it is the role played by the managers inside the firm: are they passive automata in cost optimization model which have prevailed in modern economics or entrepreneurs?

In Teece opinion, dynamic capabilities are the combined result of organizational routines, entrepreneurship and management.

Dynamic capabilities are certainly rooted in change routines (e.g., product development along a known trajectory) or analytical methodologies (e.g., of investment choices) but also in creative managerial and entrepreneurial acts (Teece, 2010).

Indeed, routines set how projects are run but not how they are sensed, prioritized and selected (Teece, 2012).

That is to say it there are actions by top management which are simply intuitions and result of its instinct.

Therefore, unlike ordinary capabilities, dynamic capabilities might rest also on the skills and knowledge of one or few executives who represent the limit to which the firm can grow by sensing new opportunities, developing new business models and leading organization transformation (Augier and Teece, 2008)¹³.

¹² Managers start from different positions, take unique path but end up with capabilities that are similar in terms of key attributes (Eisenhardt and Martin, 2000).

¹³ Innovation can be either routinized or independent. The former is pursued by large companies to survive but is not enough. The latter is the pure view of the entrepreneur which brings the idea out of his mind rendering it a viable business reality. It is through dynamic capability that independent innovation can be pursued by large companies (Baumol, 2002).

The term “*entrepreneurial management*” defined by Teece means that top management entrepreneurial and leadership skills are required in order to sustain dynamic capabilities and assets orchestration, including the change of routines (Teece, 2012).

The former is needed to sense technological and market opportunities starting developing conjectures about the future path of the firm.

The latter is necessary for implementing the needed changes in order to keep firm in tune with the environment. As entrepreneurial management has a vision of the future, leadership is needed in order to have others share the same vision. As previously highlighted, this is extremely important for making an organization transform.

Entrepreneurs do not exist only in small firms and economic theory should recognize the importance of managers’ role in allocating resources under conditions of deep uncertainty, something price cannot regulate.

Lining up specific assets, developing new ones and integrating them into a well-functioning production and marketing system cannot be left up to the market by managers since a market for high- specificity assets simply does not exist or is extremely thin (Teece, 2015).

Entrepreneurial management can be performed by one exceptional leader or a strong team.

It is possible to have a TMT (top management team) responsible for corporate strategy, communication, integration and creation of new capabilities (Teece, 2015).

Below a quote by Steve Jobs, reported by Teece in his paper of 2012.

“... there is no system. That doesn’t mean we don’t have process. Apple is a very disciplined company, and we have great processes. But that’s not what it’s about. Process makes you more efficient. But innovation comes from people meeting up in the hallways or calling each other at 10:30 at night with a new idea, or because they realized something that shoots holes in how we’ve been thinking about a problem ...”

Broadly speaking, Steve Jobs is saying that Apple has great processes but it is not simply all about it. There something more than routines on which firms build their dynamic capabilities. That is non- routine strategizing and entrepreneurship.

Since dynamic capabilities cannot be routed only on the skills of individuals, those traits should be embedded into corporate culture, routines and capabilities. Attention should be paid in designing business model to find the right combination to achieve organizational identification and loyalty (Augier and Teece, 2008).

Sensing, seizing and transformational processes should be settled and enriched throughout the entire organization while finding the right feedback to top management.

The processes upon which the three clusters of dynamic capabilities rest are performed throughout the organization. Entrepreneurship itself should be extended to all the organization (bottom-up approach). TMT is responsible for the final decision but acts also on the ideas and the opportunities sensed by all the levels of the organization.

6. Conclusions

First part just concluded aims at introducing and explaining the framework of dynamic capabilities advanced by Teece and Pisano in 1994.

Peteraf, Di Stefano and Verona (2013) report the sharp increase in publications and citations around the them which has taken place between 2000 and 2013.

However, inconsistencies, different and diverse definitions emerge from literature (Zahra et al, 2006). Therefore, dynamic capabilities definitions, nature and micro-foundations have been explicated in order to better frame the issue. They represent the firm's ability to integrate, build, and reconfigure internal and external resources and competences to address and shape rapidly changing business environments (Teece and Pisano, 1994). Together with VRIN resources and a good strategy they are source of firms' competitive advantage (Teece, 2014a).

For the purposes of my study sensing, seizing and transforming capabilities, the three clusters identified by Teece (2007) are more than best practices. They are abilities, capacities which start from the top-management but embrace the whole organization.

Comparing dynamic capabilities to mere routines would mean continuing avoiding to consider management as idiosyncratic factor of production bringing unique and valuable characteristics to the firm.

PART II

FIRMS' INTERNATIONALISATION AND DYNAMIC CAPABILITIES

1. Introduction

The dynamic capability framework discussed in the first part is applied to multinational enterprises and more in general to the internationalization of firms¹⁴.

Difficult to imitate and globally exercised dynamic capabilities are foundations of multinational enterprises competitive advantage, especially in business environments characterized by high degree of volatility and competition (Augier and Teece, 2007).

Research has paid much more attention to the consequences of internationalization rather than on the factors driving this process (Tseng et al, 2007).

With this respect, Internalization theory has enhanced the understanding of this phenomenon mainly by appealing to market failure and transaction costs issues (Teece, 2014a, Al-Aali and Teece, 2014).

The first prong of internalization theory, the most developed (Buckley and Casson 1976, Dunning 1981, Rugman 1981, Teece 1975, 1976, 1981), is concerned with Coasian transaction cost theory. Resource availability, on the other hand, plays a fundamental role in firms' international growth and internationalization decision is affected by internal resource condition (Tseng et al, 2007). Therefore, the second prong focuses more on resources and capabilities transfer but has remained underdeveloped with respect to the first. Dynamic capabilities

¹⁴ A multinational enterprise is business firm that sets strategy and manages operations for the development and the utilization of income generating assets in more than one country in the pursuit of profits over time (Teece, 2014).

framework can integrate such prong and reconcile international business literature with the one of strategic management (Luo, 2002, Teece, 2014a).

In order to achieve performance in international markets, firms must balance their exploitation and exploration activities (Prange and Verdier, 2011). Once they possess distinctive resources, they have to deploy them globally while continuously upgrading them (Luo, 2000).

The topics introduced here will be deepened in this part so as to lay the theoretical foundations down for an empirical analysis of dynamic capabilities in multinational enterprises.

2. Dynamic capabilities in international expansion (Luo, 2000, 2002)

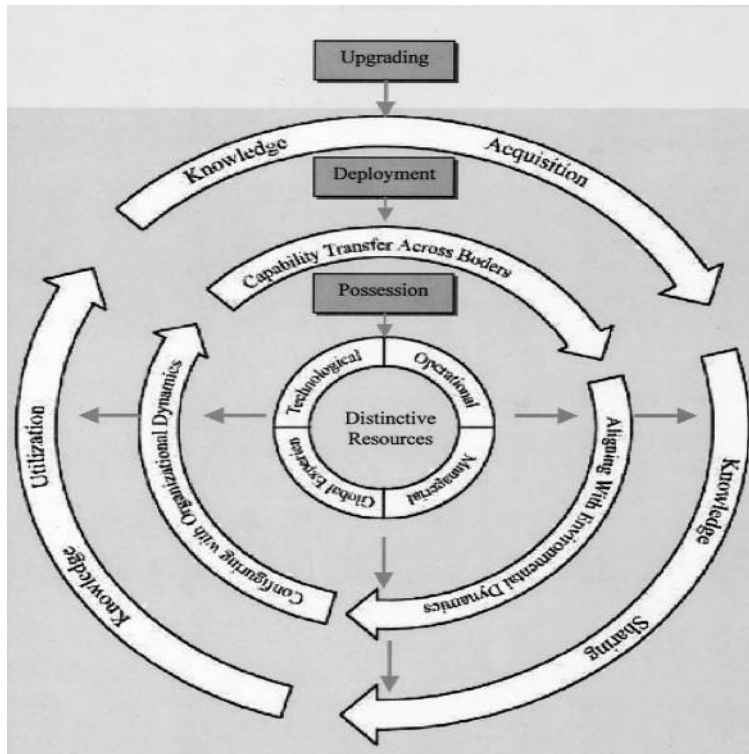
The capacity of a firm to survive in the international business environment depends on its dynamic capabilities. Rent generating resources alone cannot guarantee the adaptability, innovativeness and sustainability required by internationalization process.

Today, capability exploitation and enhancement play a decisive role in determining the outcome of international expansion because it is only with them that firms can overcome the liability of foreignness and newness. The former stands for the extra-costs incurred in operating abroad with respect to local firms. The latter indicates the extra-commitments in terms of product and market incurred to compete with firms operating in the business for a longer period of time (Zaheer, 1995, Oviatt & McDougall, 1994).

As depicted in Figure 4, three types of dynamic capabilities are involved in international expansion:

- *Capability possession*: having a strong base of distinctive resources;
- *Capability deployment*: allocating efficiently distinctive resources abroad;
- *Capability upgrading*: building new bundles of resources and capabilities.

Figure 4. Dynamic capabilities in international expansion



Source: Luo (2000)

Below each type of dynamic capability involved in international expansion will be briefly discussed. Then, determinants of capability deployment will be investigated.

2.1. Capability possession (Luo, 2000)

Firms which want to engage into internationalization process must possess distinctive resources. Distinctive resources can be considered as those assets, knowledge or capabilities which are firm specific and can generate economic return for the firm.

Dynamic capabilities of the firm lie in its ability to create, assemble, transform those resources which are the basis for the development of new capabilities.

Distinctive resources include particular set of capabilities which must be possessed by firms before expanding internationally (Kogut and Zander, 1992). Specifically, they can be disaggregated into:

- *Strategic capabilities*: they include technological and operational capabilities. Technological capabilities are patents, product development, process innovation trade secrets and need to be supported by foreign industries and demand in order to be source of competitive advantage. Operational capabilities are marketing, distribution and relationship capabilities, which are fundamental for firms seeking a market position in

a foreign country. This involves also being able to network with the local partners, especially when firms do not establish their own sales and distribution channel abroad;

- *Organizational capabilities*: they include managerial skills and international experience. The former is involved in human resources management as well as in the coordination systems, information flow, management, administration and control of the international firm. Thanks to the routinization of operational capabilities, knowledge of specific foreign markets can be institutionalized and shared among different sub-units. The latter is knowledge about specific markets which can become then a firm capability.

For international expansion, rather than physical assets and economies of scale, distinctive resources are represented by knowledge based capabilities and resources.

Summing up, capability possession:

- means possessing distinctive resources which are firm specific and are source of competitive advantage;
- articulates into the possession of knowledge based capabilities such as technological, operational and managerial capabilities.

2.2. Capability deployment (Luo, 2000)

Once you possess the right resources you have to allocate and exploit them¹⁵. In this sense internationalization offers firms more possibilities to exploit distinctive resources.

Resource deployment must align properly with environmental dynamics in order to generate economic returns¹⁶. Highly volatile markets are much more difficult to be controlled but at the same time offer greater opportunities.

If one follows transaction cost theory commitments in foreign uncertain and unstable countries will be lower (Williamson, 1985). However, without resource commitment and deployment is impossible to seize any opportunity and commitments need to be continuous rather than isolated.

Beside volatility, a market could also be characterized by hostility from local suppliers, distributors or government. If it is the case multinational enterprises will limit the quantity together with the distinctiveness of the resources committed to such country.

¹⁵ Deployment dimension is where dynamic capabilities are of particular importance. It is a decision that involves both entrepreneurship and decision making (Teece, 1998).

¹⁶ Such concept is similar to the orchestration function Teece (2007) ascribes to dynamic capabilities.

As long as firms are engaged in foreign operations, they gain experience in such markets (markets practices and environments), thus reducing the risk involved in such operations and consequently stimulating their resource commitments (Johanson and Vahlne, 1977).

In international expansion firms must be careful in keeping the balance between resources committed and ownership control¹⁷. That means the more distinctive and greater in number are the resources committed the higher will be the level of ownership control which, broadly speaking, could range from minority joint venture to majority joint venture up to wholly owned subsidiary.

If firms want to protect their tacit knowledge and distinctive resources, wholly owned subsidiaries or at least majority joint ventures are the best entry modes. If firms want to acquire knowledge from local partners, joint ventures will be preferred.

Essentially, capability deployment means being able to transfer critical capabilities across borders.

The term transferability stands for such ability of the firm and since the most critical ones usually reside within the parent company, their movement from it to foreign subunit is the most common.

It is fundamental for the parent firm to transfer capabilities which are unavailable to local competitors so as to allow foreign subsidiaries to gain advantage over indigenous firms.

Of course, influence and effectiveness of the specific capabilities which are designed and built on specific home market conditions, will differ depending on the country in which they are transferred. As previously stated, environmental conditions, as the socio-cultural and political environment, influence significantly the deployment of capabilities abroad.

Therefore, capabilities are not universal and need to adapt or to be reconfigured in different contexts.

Transferability itself differs depending on the capability transferred. Technological capabilities or financial capabilities are much more transferable than organizational or operational capabilities which interact with the corresponding market. Home country experience is quite difficult to be transferred while international experience and reputation are easier to be leveraged. Possession of an efficient distribution network cannot be transferred but the capability of setting up and managing it efficiently is transferable.

As previously mentioned entry modes are strictly related to capability deployment. In addition to capability distinctiveness, also capability transferability affects the way capabilities are

¹⁷ It follows that internalization is only a method through which resources are deployed within a globally integrated multinational firm (Luo, 2000).

internationally deployed. Tacit knowledge can be better transferred to foreign location through a direct investment while if there is the need to access critical capabilities possessed by a local firm, a joint venture could be more suitable. Exporting the product is a way to transfer the capability to make the product, in situations in which higher degree of investments in foreign operations is not possible or is not regarded as convenient.

Summing up, capability deployment:

- means transferring capabilities across borders;
- means aligning with environmental dynamics;
- means configuring firms' organizational structure balancing ownership with distinctiveness and transferability of the capabilities deployed.

2.3. Capability upgrading (Luo, 2000)

Beside transferring and deploying capabilities across national borders, firms involved in international operations need at the same time to learn and get new knowledge.

In order to build a sustainable competitive advantage in the global marketplace which has become even more dynamic, firms need to continuously renew their resource base building new capabilities. Such learning opportunity is offered by firm foreign presence thanks to the potential contact with new ideas, cultures, resources, markets and competitors it would provide. Therefore, building and diffusing learning capabilities is of vital importance for the international growth of the firm.

In order to cope with uncertain and volatile environments while seeking new opportunities, firms have to upgrade their capabilities by institutionalizing innovation, learning and encouraging diffusion of information. Firms which are keen on learning should be more eager to gain experience which allows them to develop new capabilities in tune with the business environment; this in turn increases the likelihood they will engage into international activity. Firms should make learning a central and visible element in their international expansion and managers should make knowledge creation a priority (Luo, 2002).

Organizational learning in multinational enterprises is functional to the production of new knowledge which in turn leads to existing capabilities upgrading. Behaving accordingly firms are able to revitalize themselves over time.

Learning activity can be disassembled into three main contents. Once knowledge is created through R&D activity or learning by doing, it becomes tacit knowledge of the organization thanks to information transfer and retrieval. In order to stimulate organizational change

experimentation is a critical activity as well as the development of dynamic routines which are the continuous development of new skills and capabilities (Lei, Hitt, Bettis, 1996).

Learning is stimulated by environmental change but at the same time firms must be proactive in influencing the same environment they learn from. Examples of mechanisms and instruments achieving coordination among the multiple learning processes taking place inside the firm and creating organizational learning are multimedia, information transfer systems, training and R&D activity.

Learning capability of the organization can be developed internally or through external learning. In the first case, managers can proceed through competency acquisition, experimentation or simply by using other firms' best practices. In the second case, setting up alliances is a considerable way to upgrade capabilities since it provides new stimuli which overcome firm inertia. However, firms which engage in alliances must protect their own critical resources and capabilities in order to prevent their leakage.

As knowledge is created it must be disseminated throughout the organization. As it is integrated, it is made available among the different countries and utilized to reconfigure old and new resources.

Knowledge sharing and utilization are facilitated by an effective and efficient information transfer system as well as the free flow of talents and corresponding skills around the world.

Multinational enterprises become globally integrated networks in which the various subunits share learning capabilities and knowledge each other. The new capabilities developed then can be extended to old locations, upgrading firm strategic configuration (Teece et al, 1997, Luo, 2002).

In this sense, a global corporate culture and a system of shared values help integrating and coordinating the different firm subunits around the globe.

Summing up, capability upgrading:

- is determined by the firm ability to learn internally and externally;
- is determined by the firm ability to disseminate such knowledge inside a coordinated network;
- is determined by the firm ability to renew and reconfigure resources so as to broaden their use.

2.4. Determinants of capability exploitation and building (Luo, 2002)

Capability deployment involves both capability exploitation and capability building (Tallman, 1991).

“Capability exploitation involves exploiting rent generating assets which are firm specific and difficult to imitate while capability building involves building new capabilities through learning from other organizations, creating new skills or revitalizing existing skills in new situations“ (Luo, 2002).

Capability deployment has to configure against both environmental hazard and organizational needs.

The former is characterized by:

- *environmental complexity*: the extent to which environmental factors in a host country are perceived as different from the home country (Duncan, 1972);
- *industrial structural uncertainty*: variability and volatility of industrial environment (Dess and Beard, 1984);
- *business specificity*: how business cultural elements vary from international standards.

The latter is characterized by:

- *entry mode*: the way multinational enterprises enter in a new geographic market;
- *market orientation*: the firm attitude towards foreign markets which can be oriented to local business growth or to mere export.

Luo (2002) tests different hypothesis regarding the link between capability exploitation and the determinants just described¹⁸.

The results show how environmental hazards are negatively related to both capability exploitation and building except for business cultural specificity which instead results to be positively related with the latter.

As regards entry mode wholly subsidiaries are positively related to capability exploitation while joint ventures are positively related with capability building. Local market orientation is positively associated with both capability exploitation and building.

¹⁸ Data were gathered among 167 of multinational enterprises subunits in China (Luo,2002).

Organizational needs interact with environmental hazard and then on capability deployment. The negative effect of environmental hazard is enhanced in the case of wholly owned subsidiaries and local market orientation.

Finally, capability deployment alignment with organizational hazard and organizational needs is found to be positively related with international performance.

3. International ambidexterity (Prange and Verdier, 2011)

Strictly connected to the conclusion of previous chapter is the concept of international ambidexterity introduced by Prange and Verdier (2011).

Such study has as objective the explanation of the different international results in terms of growth and survival since both incremental (Johanson and Valne, 1977, Johanson and Valne, 1990) and born global models have not provided such justification¹⁹.

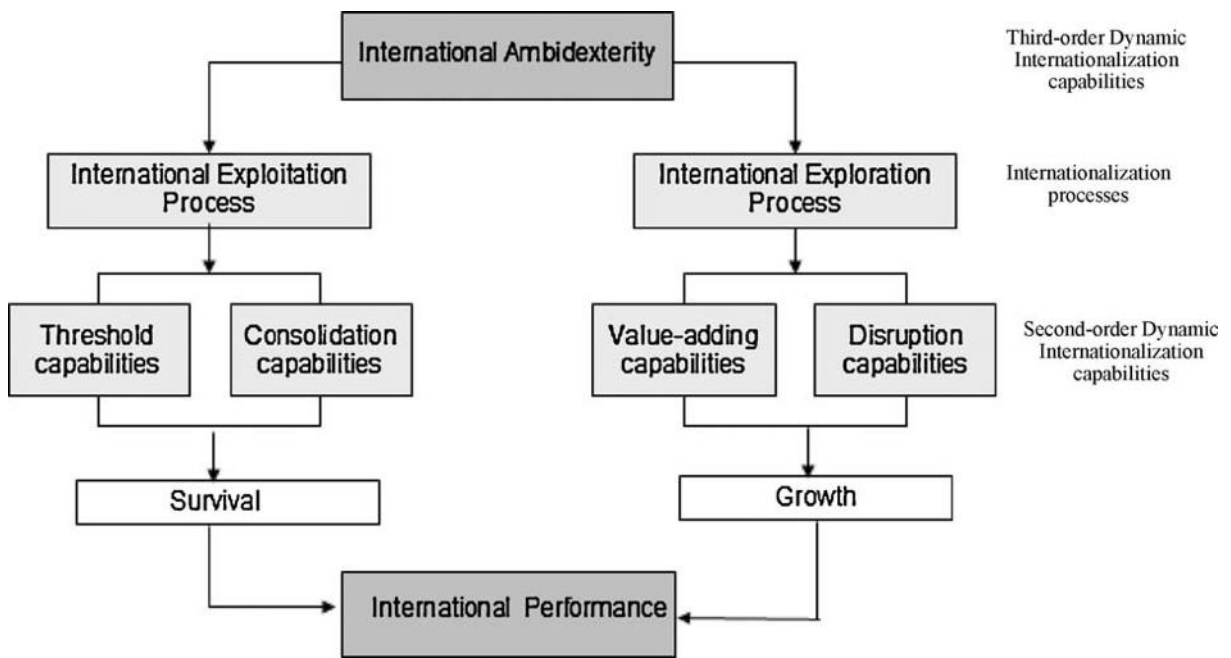
Other factors such as entrepreneurial vision, manager international experience and alertness to opportunities have an impact on the global performance (Crick, 2009). That to state internationalization should be read through the lenses of resources and dynamic capabilities.

Success abroad should be dependent also on the firm reconfiguring capacity of resources and capabilities in order to better respond to international contingencies. (Li,1995).

Therefore, dynamic capability theory is a suitable theoretical foundation for firm internationalization since it explains how firms integrate, build, reconfigure internal and external competencies (Teece et al, 1997).

¹⁹ Incremental and cross border theorists (Uppsala Model), suggest that firms involve in foreign operations gradually, increasing their commitment while increasing their knowledge of foreign markets. (Johanson and Valne, 1977, Johanson and Valne, 1990). Born global firms instead are firms which from the start of their life build their competitive advantage by using resources while selling in multiple countries (Oviatt and Mcdougall, 1994).

Figure 5. Dynamic capabilities, internationalization and performance



Source: Prange and Verdier (2011)

As it is clear from Figure 5, different dynamic capabilities support different processes of internationalization, exploitative and explorative, which in turn drive firm survival and growth. Indeed, while explorative dynamic capabilities make possible for firms to overcome inertia and stimulate business growth, exploitative capabilities support the accumulation of knowledge following a given path thus reducing risks and uncertainties. Furthermore, the former class of dynamic capabilities is characterized by innovation, experimentation, flexibility while the latter by implementation of preexisting strategies, refinement of choices and efficiency increase (Luo, 2002).

Only the right balance between exploration and exploitation drives international performance and such balance is a third order dynamic capability called international ambidexterity²⁰.

In fact, as Levinthal and March (1993) note an organization which relies only on exploration will never gain returns on its knowledge while an organization which relies only on exploitation risks to incur into knowledge obsolescence.

Finally, below a brief description of both explorative and exploitative dynamic capabilities.

²⁰ Organizational ambidexterity refers to the ability of an organization to both explore and exploit, to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (O' Reilly and Tushman, 2013).

3.1. Exploitative dynamic capabilities

Exploitation is mainly based on the application of existing knowledge (Vermeulen and Barkema, 2002) and is characterized in the refinement and extension of existing technologies and capabilities (March, 1991).

Internationalization process characterized by exploitation is in line with incremental approach by Johanson & Vahlne (1977) and two sets of capabilities can be identified:

- *Threshold capabilities*: those capabilities that are developed in the home-country at a certain level before expanding internationally. Once the level is reached firms consider themselves ready to internationalize. Threshold capabilities relate to the ability of the firm to organize so as to function competitively in different context (Tallman and Fladmore-Lindquist, 2002);
- *Consolidation capabilities*: Those capabilities which literally consolidate existing capabilities creating bundle of resources to be exploited in regional cluster which follow the same management principle and are the result from repetitive international expansion (Sapienza et al, 2006).

3.2. Explorative dynamic capabilities

Exploration means create and build completely new capabilities.

The international new venture theory by Oviatt and McDougall (1994) and born global are clear example of firms which have to develop non existing capabilities. With this respect, two sets of capabilities can be identified:

- *Value adding capabilities*: those capabilities derived from the firm ability to manage and access assets of other firms through interfirm relationship in many different locations (Mathews and Zander, 2007)
- *Disruptive capabilities*: the firm capability which allow it to overcome inertia and core rigidities inside its organization. Disruptive capabilities may enable strategic reconfiguration of both the whole company and the subsidiary by questioning existing operating routines (Birkinshaw and Hood, 1998).

4. From Internalization to dynamic capabilities (Teece, 2014a)

Internalization theory essentially views internationalization of firms as a solution to market failures. In such circumstances firms solve the issue by internalizing, by making a foreign direct

investment²¹. As underlined by Buckley and Casson, “*When markets in intermediate products are imperfect, there is an incentive to bypass them by creating internal markets. This involves bringing under common ownership and control the activities which are linked to the market. Internalization of markets across national boundaries generates MNEs*”(Buckley and Casson, 1976).

For this this reason, internalization can be considered as an efficiency based explanation of the multinational enterprise, which exists for its superior ability to organize transactions, especially with respect to knowledge intensive assets (Dunning and Lundan, 2010).

By applying internalization theory, the firm should be preferred to the market because of:

- *Transactions costs and hold-up issues* (Buckley and Casson 1976, Dunning 1981, Rugman Teece 1975, 1976 e 1981): such prong represents the Coasian transaction costs based theory of internationalization above mentioned and entry modes have been analyzed accordingly. Contractual and governance issues are at its core so that Casson states “*modern theory of the MNE is essentially a general theory of contractual relations in international business*” (Casson, 1986);
- *Resource transfer cost and learning issues*: such prong emphasizes the easiness of coordination inside an integrated multinational enterprise and the possibilities for upgrading firm capabilities through an exchange of know-how, technology and people across national borders. Rather than saving on costs, multinational enterprise function is about being entrepreneurial in the development, transfer and orchestration of organizational and technological capabilities (Teece, 1981, Kogut and Zander, 1992).

The second prong of internalization theory above described has remained underdeveloped with respect to the first (Birkinshaw and Hood, 1998). However, a resource based approach to internationalization has diffused in international business literature (Peng, 2001).

With its work Teece (2014a) aims to start an integration between cost based and governance perspective (first prong) and entrepreneurship (second prong). In fact, given multinational enterprise evolving nature, internalization approach needs to be integrated by a better understanding of enterprise’ resources and dynamic capabilities (Teece, 2006).

²¹ Foreign direct investment (FDI) takes place when a corporation in one country establishes a business operation in another country, through setting up a new wholly-owned affiliate, or acquiring a local company, or forming a joint venture in the host economy (Moran, 2012).

4.1. Internalization theory shortcomings

Below, reassumed the shortcomings of internalization identified by Teece (2014a).

Competitive advantage neglected

Internalization studies are not able to explain how multinational firms create and sustain competitive advantage. Competitive advantage cannot derive from those governance innovations since they are quite imitable by competitors.

Capabilities and learning unexplored

Internalization studies have not considered the importance of dynamics. Despite the fact in the OLI model by Dunning (1995), ownership can be regarded as a proxy of capabilities no explanation on how such capabilities are built, orchestrated and transferred is given²².

In that regard, learning becomes an important mechanism through which enterprises develop their specific assets and capabilities. Moreover, dynamic capabilities are needed to orchestrate technology within and beyond the firm as firms do not rely anymore on the sole internal R&D.

Cross border market creation and co-creation neglected

Transaction cost theory focuses its attention especially on entry mode by assuming a market for the transaction already exists. Internalization is then preferred to market transactions failure. However, sometimes market has simply failed to emerge and has to be created by an entrepreneurial management which, rather than solving transactional difficulties by simply internalizing all activities, creates markets for ideas or for products (Pitelis and Teece, 2010). By supporting suppliers' capabilities, managers build markets they can sell into or from which they can source raw materials and components. A market creation and co-creation view of the MNE is obviously different with respect to contractual approaches. Management has to cope with co-specialization, creating new markets and extending old ones. In this sense, the ecosystem is partly endogenous and is shaped by global firms.

²² The eclectic paradigm by John Dunning (1995) identifies three forces driving international activity by firms: Ownership advantage (O) refers to any kind of income generating asset that allows firm to engage in foreign production; location advantage (L) refers to the specific local advantages (e.g. labor cost, raw materials taxes, etc.) for which multinational enterprises may decide to locate their value adding activities outward; internalization advantage (I) explains why firms decide to exploit their ownership advantage internally rather than through the market (Dunning, 1995).

Entrepreneurship suppressed and leadership ignored

Internalization models are designed to manage opportunism but not opportunities. The role of the entrepreneur is limited and the manager choose to internalize until the marginal cost of internalizing is equal to the marginal cost of the market transaction.

Therefore, the problem is limited to the choice between vertical integration or market while no attention is paid to the role played by business enterprise to develop opportunities both at home and abroad, to learn and create knowledge.

Control of foreign subsidiaries

For internalization theory ownership of foreign subsidiaries is sufficient to align goal and objectives (Hennart, 2010).

In reality, it is not the case since supply coordination seems now to be less dependent on vertical integration and internalization.

Therefore, contractual theory of the firm needs to be integrated with entrepreneurial, capabilities and the network paradigms which characterize firms (Gereffi et al, 2005).

4.2. Directions for future research

Going back to the dynamic capabilities clusters identified by Teece (2007), in the international landscape they are applied on a global basis.

Sensing involves the identification of opportunities at home and abroad recognizing latent demand on a global scale. Seizing involves the mobilization of resources globally transferring and adjusting capabilities so that making them fit with the different contexts. Transforming involves continued renewal in order to address radical opportunities sensed, to soften rigidities keeping firm's assets aligned with the business environment (Al-Ali and Teece, 2014).

By adopting such perspective, different themes can and need to be deepened. Among them, Teece (2014a) identifies the following.

Leveraging capabilities through horizontal expansion

Internalization theory tells little about which market to enter and when, limiting the issue to the specification of entry mode. Market entry is not about choosing the best contractual form. It is about assessing how relevant will be firms' capabilities abroad, how much will be the costs to transfer them, how much they will need to be adapted to the different local contexts.

Therefore, firms capabilities both limit and make possible foreign market entry (Helfat and Lieberman, 2002). When firms capabilities are in tune with what is needed abroad, international

expansion will be facilitated. Then multinational enterprise becomes the place where products and capabilities are leveraged, created and value is captured by this process globally.

How and when enter into new geographic markets

Mode of entry depends not only on contractual factors but also on who possesses the critical capability, time it takes to transfer them and time required for entry in a new foreign market. Firms should invest in a new geographic market when they possess pre-entry capabilities, at least ordinary, and slack resources²³. If timing is crucial and above mentioned capabilities are not present yet, then joint venture becomes the most preferable entry mode. Indeed, joint ventures and more in general partnerships facilitate access to local capabilities shortening entry-time. However, in the case of “*born global firms*” this is not the case. Those small firms are endowed with well-developed dynamic capabilities which allow them to quickly co-create markets abroad while gaining local access to the ordinary capabilities needed (Oviatt and McDougall, 1994).

Role of HQ and subsidiaries

Into a dynamic framework subsidiaries acquire importance in their role with respect of headquarter. They are not units merely controlled and commanded by who controls them. They are the locus of VRIN resources and signature process development. Subsidiaries develop peculiar assets and capabilities, generate know-how which can be transferred and reutilized proficiently in other countries. R&D itself is globally distributed thus allowing for the multiple creation of capabilities in different regions. On the other hand, headquarter is fundamental for its orchestration activity which means enabling technology transfer, encouraging the exploitation of complementarities and the allocation of financial resources among subsidiaries.

5. Conclusions

This part has been written with the aim of contextualizing the framework of dynamic capability into international landscape with particular attention to multinational enterprises.

Particular attention has been paid to the works of Luo (2000, 2002), Prange and Verdier (2011) and Teece (2014a).

The first work by Luo (2000) explains how firms in international expansion have to possess distinctive resources, exploit them in foreign market while continuously upgrading them

²³ An inverted U shaped relationship exists between organizational slack and growth in multinationality. In fact, when slack is high firms are less responsive to business volatility and strategic adjustments (Tseng et al, 2007).

through learning. A further analysis made by Luo (2002) highlights how both the exploitation of firms capabilities and capabilities building are dependent on firms' organizational needs and foreign environment in which firms decide to do business.

The second work by Prange and Verdier (2011) focuses on international performance, achievable thanks to a balance between exploitative dynamic capabilities and explorative dynamic capabilities. That means firms must be able to balance the way they leverage existing capabilities abroad with their effort to continuously build new capabilities.

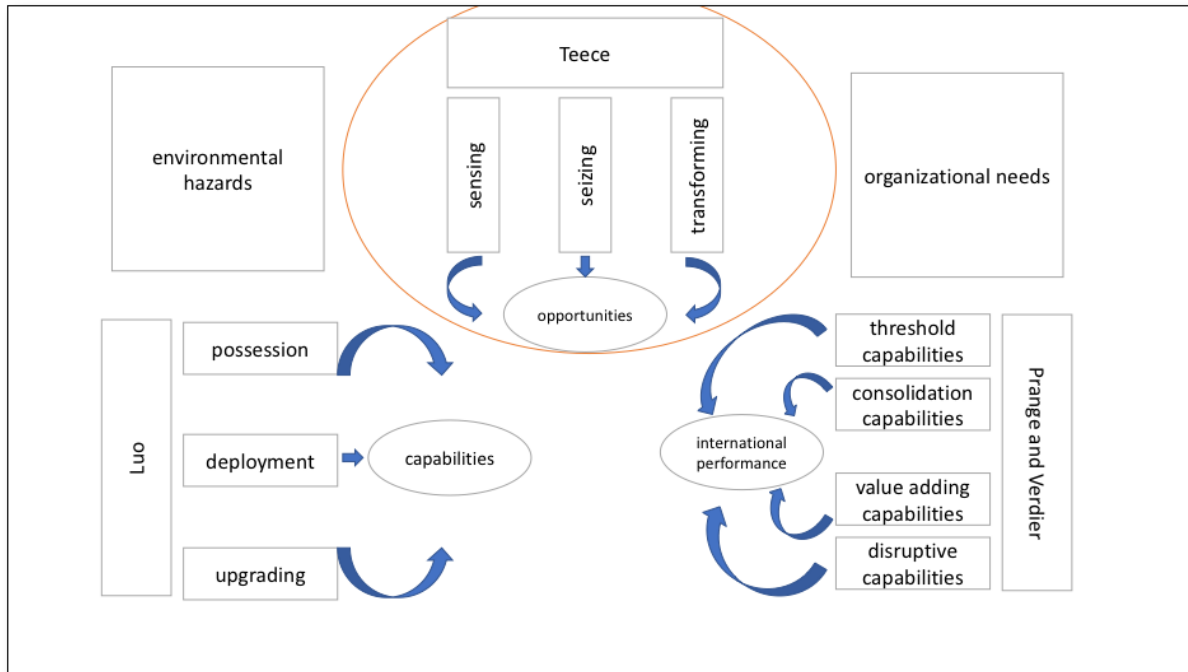
Finally, the third work by Teece (2014a) follows its previous studies on dynamic capabilities mentioned in the first part, with the aim of filling the gaps of internalization theory. A resource based approach highlighting management entrepreneurship and leadership coming out of the employment of dynamic capabilities (sensing, seizing and transforming) is needed in order to accomplish such goal.

Instead of focusing on market imperfections, multinational enterprise competitive advantage should be explained through:

- its ability to leverage existing capabilities adapting them to the different contexts;
- its ability to take advantage of the learning possibilities offered by its international presence;
- head-quarter ability in its orchestration and management of co-specialization and complementarities;

Figure 6 visually represents three works analyzed in the second part of such analysis.

Figure 6. Dynamic capabilities and internationalization



Despite the fact three seminal works here analyzed deserve equal attention, they actually treat different aspect of the same phenomenon.

In order to define starting point for an empirical application developed throughout this analysis, the work by Teece, especially the classification of dynamic capabilities, assumes relevance with respect to the others.

However, to be noted is how three different works stress the importance of learning, irrespective of the fact we are speaking of transforming, capability upgrading or explorative dynamic capabilities.

Finally, beyond an empirical analysis and identification of sensing, seizing and transforming capabilities of a multinational enterprise, interplay between dynamic capabilities and internationalization process should be investigated.

Broadly speaking, is there a link between such dynamic capabilities and a foreign direct investment in another country? The fact such foreign direct investment takes place in the form of acquisition can be explained by the firm intention to upgrade its capabilities? (Vermeulen and Barkema, 2001).

What just stated and the form sensing, seizing and transforming capabilities take will be deepened in the following part.

PART III

CASE STUDY: TI SPARKLE, “THE WORLD’S COMMUNICATION PLATFORM”

1. Introduction

In order to apply the theory explicated in the previous parts, it has been chosen to pursue such aim through an in depth qualitative case-study.

The advantages of this choice reside in the fact it allows for a better investigation of organization capabilities such as dynamic capabilities (Grant and Verona, 2015).

Below, a quote by Godfrey and Hill (1995) which highlights the benefits of qualitative studies.

“Qualitative methodologies such as, multiple case studies, event histories, and ethnographic inquiries may represent the best way forward in observing the effects of otherwise unobservable idiosyncratic effects on business strategies and performance, such as those predicted by the resource based view of the firm” (Godfrey and Hill, 1995).

Dynamic capabilities theme and its previous studies by Rosembloom (2000) and Danneels (2011) have been criticized because of their lack of specificity (Grant and Verona, 2015)²⁴. The framework has been accused by scholars of being excessively theoretical, probably due to its relatively young origins (Di Stefano et al, 2010).

From this point of view, an empirical investigation through a qualitative case-study has the ambition to overcome such deficiencies.

²⁴ Paper by Rosenbloom (2000) examines how NCR Corporation addressed and managed NCR transformation in the electronic era while paper by Danneels (2011) focuses on dynamic capabilities analysis in Smith Corona.

2. Choice and methods

Ambition of this study is to apply dynamic capabilities framework to a multinational enterprise such as Telecom Italia Sparkle.

In this sense, Telecom Italia Sparkle seems to be a particularly attractive target company for different reasons.

First, it is a company characterized by a marked international presence having as core business the provisioning of international telecommunication services to its wholesale and retail customers.

Secondly, as better specified later in the chapters, Telecom Italia Sparkle was established by Telecom Italia Group with the purposes of making its former business unit independent and able to better address the continuing changes which characterize telecommunication industry on a global basis. In such circumstances, dynamic capabilities should be better appreciated (Teece and Pisano, 1994).

Given the qualitative perspective such study wants to take, in order to collect the needed information to conduct the analysis, different sources have been taken into consideration and employed. Reassuring them, they are:

- official and public sources such as Balance Sheets and Management Reports;
- business newspaper articles;
- technical papers published in Telecom Italia website;
- Corporate presentations and data kindly made available by Telecom Italia Sparkle;

In addition, above all, multiple interviews have been conducted and organized with Telecom Italia Sparkle managers responsible for strategy, marketing and network departments. Principal themes object of the discussion have been shared with interviewed people before them. Then, meetings have been conducted in “Q&A” format, ranging from planned themes to the ones arising while talking.

3. Company outline

Below, a clear picture of Telecom Italia Sparkle will be portrayed.

It seemed logical and necessary to achieve a deep understanding of the company in order to apply to it the theories set forth in the previous parts.

Therefore, after having introduced the origins of the company, Telecom Italia Sparkle is introduced, its products, its key assets and capabilities are described.

Finally, a focus on strategy and main geographical areas in which the international carrier is present concludes the chapter.

3.1. Historical background (Gatti et al, 2006)

During the '90s, the company originally labeled "*STET*" was starting its international activity by means of foreign companies shares acquisition, especially in the mobile segment. Those were the years of mobile phone expansion: every year dozen of licenses were granted by national authorities in order set up competitive communication services.

However, STET first acquisition was made in partnership with France Telecom for Argentinian fixed network management.

Leveraging on its strong experience in telecommunication industry, STET in a few years would have been consolidated its presence in Europe, Asia, Latin America with both Telecom Italia and Tim brands.

While changing name to Telecom Italia Group, the company carried on taking advantage of its technological, financial, marketing know-how so as to actively participate in telecommunications diffusion around the globe.

Among the results obtained by the company and recognized globally, GSM technology introduction into Latin America needs to be mentioned.

In those years, Telecom Italia Group professional capabilities have always made the company an international point of reference.

More specifically, those capabilities which differentiate the company from its competitors were:

- its strong and proactive presence in standardization international organisms;
- its technological benchmarking;
- its innovation capability, for what concerns both services and mobile communication fruition;
- a strong laboratories infrastructure which has been contributing to the company innovation path.

In order to underline its intense activity on the global scenario, below reported some of Telecom Italia international records collected in such period:

- GSM technology introduction in the city with the highest altitude in the world (La Paz, Bolivia);
- GSM installation in one of the southernmost cities in the world (Punta Arenas/ Chile);
- GSM installation in one of the coldest cities in the world (Chang-Chung, Manciuuria);
- development of the biggest network in Latin America (TIM Brasil).

Below, depicted in Figure 7, a snapshot of Telecom Italia Group international activities during the '90s.

Figure 7. Telecom Italia Group international activity roadmap (description in italian)



Source: Gatti et al (2006)

The first years of XX century were characterized by significant changes in Telecom strategic guidelines.

On the one hand, they were direct consequence of the transformation which characterized telecommunication industry. As examples, starting from those years digitization process, bandwidth development and media and contents were characterizing carriers' future growth path.

On the other hand, different factors in global landscape brought all carriers to rethink their foreign acquisitions, capitalizing value created since those years and focusing on such areas

considered of higher strategical interest. Following this kind of reasoning, Telecom Italia Group decided to focus on Latin America and in particular on Brasil.

As a consequence, at the end of 2003 Telecom Italia decided to transfer its business unit dedicated to wholesale international services to a wholly owned company, which took the name of “*Telecom Italia Sparke S.p.A*”²⁵.

Such operation was in line with other principal telecommunications carriers which decided to make international services management autonomous in order to guarantee operational flexibility, adequate capabilities and greater decision making speed in a market landscape characterized by frequent and strong changes.

3.2. Company profile

Telecom Italia Sparkle S.p.A. (hereafter TI Sparkle or Sparkle) is a leading global telecommunication service provider (top 10 for global voice and internet traffic), offering a complete range of IP, data, cloud, data center, mobile and voice solutions designed to meet ever changing needs of fixed and mobile operators, internet service providers (ISP), over the tops companies (OTT), media & content players, application service providers (ASP) and multinational corporations.

The international service provider is a wholly owned subsidiary of Tim S.p.A, leading Italian telecommunications and ICT provider²⁶. It was established in 2003 with the double objective of developing the wholesale and the retail multinational corporate business while supporting Telecom Italia Group for the provisioning of international services.

Embracing the world through its offices and fully owned companies in 37 countries, Sparkle is committed to structural expansion with innovative, daring choices and investments to serve ever-growing emerging markets and new business segments.

Key figures and company data are reassumed in Table 1.

²⁵ For further details please make reference to http://www.telecomitalia.com/tit/it/archivio/media/comunicati-stampa/telecom-italia/mercato/business/2002/12_18.html.

²⁶ After rebranding campaign, as result of the integration with its mobile operator, Telecom Italia S.p.A. is now also labeled Tim S.p.A. For further details please make reference to <http://www.telecomitalia.com/tit/it/about-us/branding/brands/our-brands.html>.

Table 1. Sparkle key figures

Headcount	748
Countries of presence	37
Network coverage – Point of presence (Pop)	122
Pops via partners	> 1.000
Revenues of the Group	€ 1.3 Bn

Source: Tim Sparkle Corporate presentation (Data as of December 2015)

3.3. Sparkle service proposition

As anticipated Sparkle offers a complete set of IP, data, cloud & data center, mobile and voice solutions, as represented in Figure 8.

In details, at the core of its service proposition there are five platforms, of which the Company sets governance rules. Below they will be briefly discussed.

- *Ip & data platform*

It is complete range of solutions designed to access any content on the internet with secure global international IP connectivity, high performance international bandwidth and Multi-Protocol Label Switching (Mpls) services;

- *Cloud & data center platform*

Suite of highly flexible and scalable cloud and data Center (DC) solutions available in several DCs worldwide, with key assets presence in Italy, Greece and Turkey.

Top class integrated Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) designed to meet the ever growing need of cost efficient and top security IT solutions;

- *Corporate platform*

Portfolio of services ranging from entry-level solutions for small and medium enterprises, to business continuity solutions, with the highest level of service performance. Such offer is directed to both italian and foreign multinational companies;

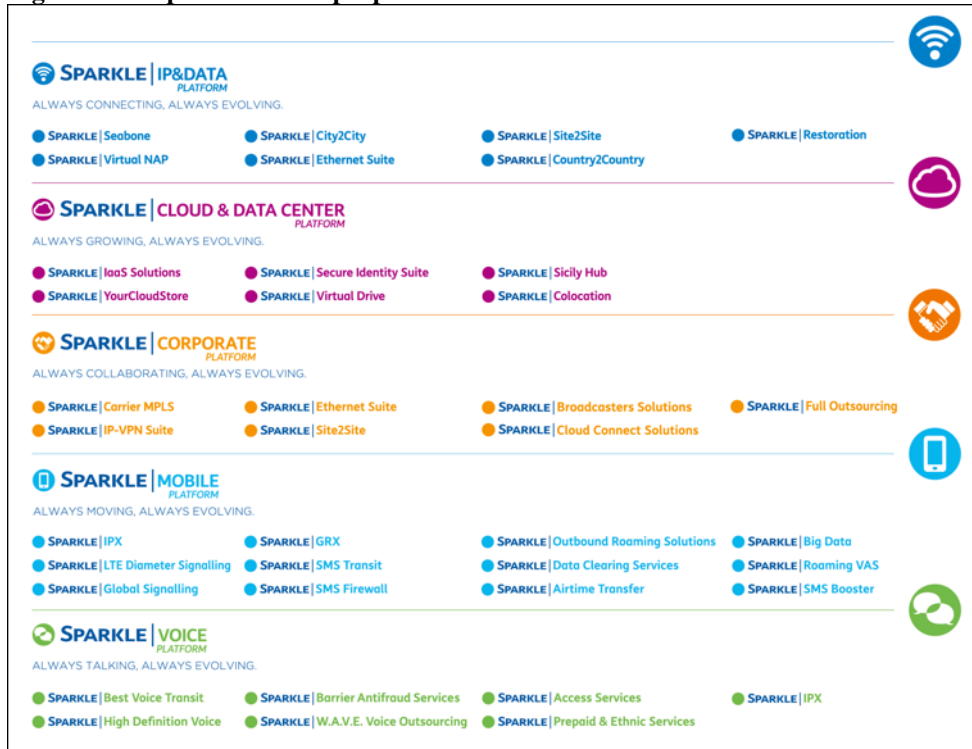
- *Mobile platform*

Distinctive portfolio of services designed to support the operations of new entrants and established mobile operators. Connectivity, roaming and messaging services aim to quickly increase international mobile service coverage and usage, thus generating new revenue streams for mobile operators while minimizing costs for service set-up and management;

- *Voice platform*

Voice solutions offer worldwide voice capabilities to carriers, service providers and mobile operators combining network reliability, competitive pricing and excellent routing solutions.

Figure 8. TI Sparkle service proposition



Source: Sparkle Corporate presentation

3.4. Key assets and capabilities

Above all, Sparkle owns and manages a state of the art global network, with proprietary backbones in Europe, Mediterranean Basin, Americas and submarine cables connecting Europe with South-East Asia and the Americas as well.

Specifically, Sparkle counts on:

- Full IP global network;
- Capillarity of European network characterized by dual protected fiber path and a global meshed architecture providing full resilience;
- Proprietary backbone links from North to South America;
- Footprint in Middle-East thanks to regional proprietary fiber optic backbone in the Mediterranean Basin and in South East Asia thanks to Tim Sparkle submarine cable systems;
- Capacity across both the Atlantic and Pacific Ocean;

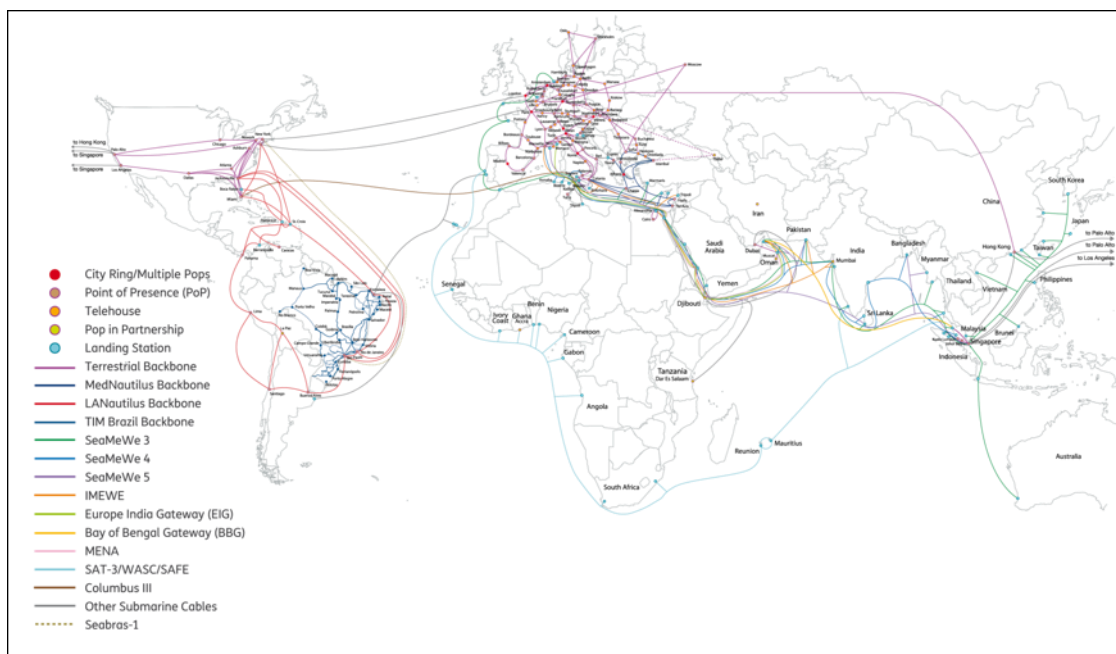
Such network, as depicted in Figure 9, embraces the entire globe.

Going further, a physical presence thanks to its fully owned companies and offices located around the globe, allows Sparkle to share customers' environment and discuss business opportunities with them.

Sparkle is well structured with capabilities such as rating, billing network interoperability to exercise the Hub role by functioning as business intermediary between different domestic markets.

Finally, business support systems (BSS), operation support systems (OSS) as well as customer care capabilities significantly support the company globally in the delivery of its services.

Figure 9. TI Sparkle global network



Source: Sparkle Corporate presentation

3.5. Positioning, business model and competition

Tim Sparkle is an interactive ecosystem for the creation and the consumption of global communication solutions. It is a platform in constant evolution which provides a communication infrastructure for the interaction between internal and external developers, global and local customers by setting governance conditions for five communities (IP & data, cloud & data center, corporations, mobile and voice).

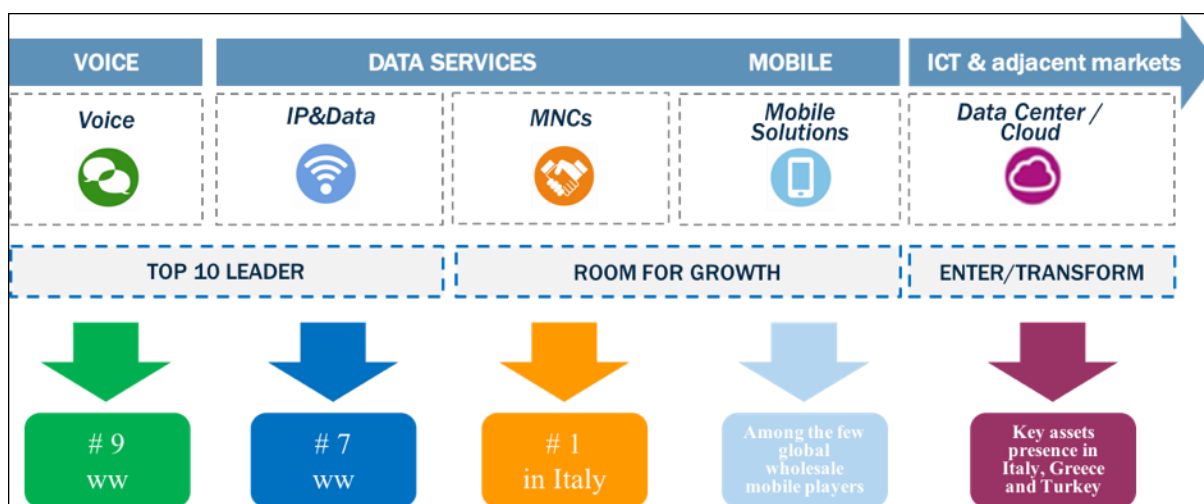
Each of those platforms has the purpose of creating and facilitating the exchange of services, thereby enabling value creation for all.

Below, reassuming what just stated, the mission of the company, as reported in its institutional website²⁷.

“Sparkle is transforming the wholesale industry with Sparkle’s tech and software solutions, allowing partners to play in an interactive ecosystem in which customized value is created and exchanged”.

As it is documented by Figure 10, Sparkle has a consolidated top-10 ranking in the core business arena (voice and wholesale data), is among the few operators offering wholesale data solutions on a global scale and has key strategic data center and cloud assets in the Mediterranean area. At the same time Sparkle provides Telecom Italia business customers with international networking solutions, supporting the parent company in maintaining its leadership position in the Italian market.

Figure 10. Sparkle positioning



Source: Sparkle Corporate presentation

As depicted above, Sparkle service offering can be disassembled into three main business areas in which it operates, each one characterized by a different level of maturity:

- *Mature core business*

It is represented by voice, IP and data services. Volumes are expected to grow but prices’ trend is expected to be the opposite thus involving a flat development for such business area;

²⁷ For further details please make reference to <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2667>.

- *Growing core business*

It is represented by international networking services designed for multinational corporations and mobile solutions. With this respect, there is room for future growth and Sparkle through a progressive “*retailization*” process tries to address the multinational corporation segment;

- *Transformation business*

It is represented by such services which require Sparkle capabilities enrichment and transformation such as cloud and more in general ICT based services. It is the business area with the greater potential, with double digit growth rate.

In order to address such demand Sparkle needs to reconfigure itself by strengthening its information technology competences in order to satisfy ICT based technology demand such as cloud, contents and video services.

The convergence and mutual reinforcement of social, mobility, cloud and information patterns drive new business scenarios creating a hyper-connected world where is key being able to manage huge amounts of data, security issues and new channels.

Such new hyper-connected world challenges are segmenting Telcos into four distinct business models designed to take full advantage of the emerging opportunities:

- *Network guarantors;*
- *Business enabler;*
- *Global multimarketers;*
- *Experience providers.*

Due to its general orientation towards the wholesale market, Sparkle is a network guarantor delivering reliable international telecommunication services while continuing to invest in new wireless and fiber infrastructure.

Moreover, the company is reconfiguring itself as a platform.

It is not just a simple provider but the enabler of an ecosystem in which its customers can converge and develop customized solutions for their end-market²⁸.

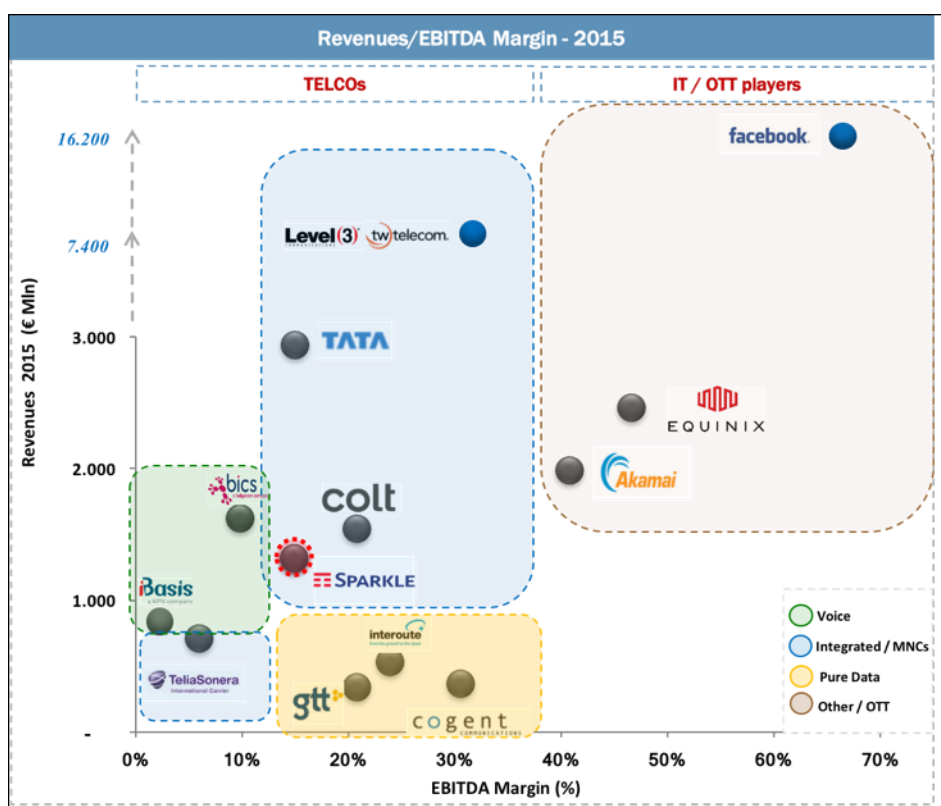
²⁸ "In industries where systemic innovation is more prevalent than autonomous innovation, market for technologies offer the company the opportunity to specialize in technology development without having to invest in developing complementary assets internally" (Di Minin and Bianchi, 2011).

The more the world become IT based, the more the focus shifts from the simple transport of the information to content processing and distribution.

As testified by Figure 11, Sparkle is a mid-size integrated wholesale operator, with a profitability level higher than pure voice players, but lower in comparison to that of business data focused companies. Specialist operating in the data centers and cloud infrastructures arena show the highest profitability levels.

However, by means of its full range of wholesale service portfolio, Sparkle is well positioned to interact with IT & cloud ecosystem owners and OTTs as the enabler and provider of their infrastructural, communications and connectivity needs.

Figure 11. Sparkle competitive landscape



Source: Sparkle Scenario analysis

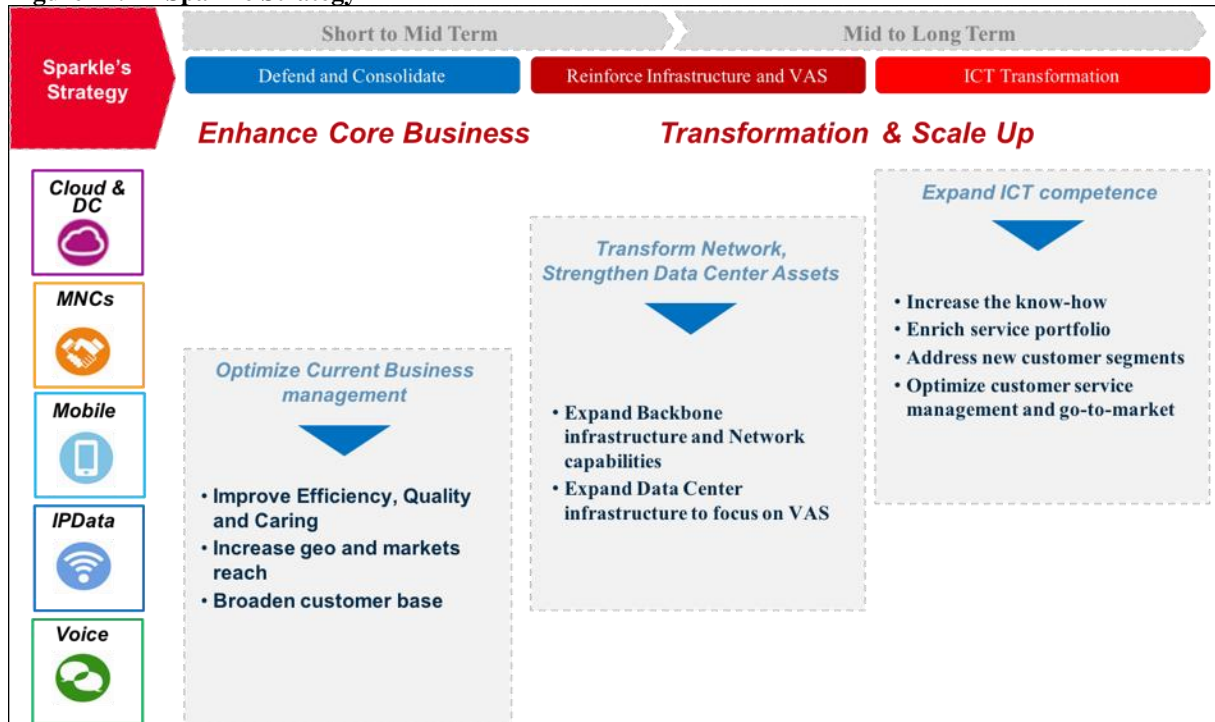
3.6. Strategy

Sparkle strategy is briefly depicted in Figure 12.

In the short term, Sparkle aims at enhancing its IP, data and voice core businesses. This by improving efficiency quality in order to differentiate its offering and achieve a better cost base. Moreover, Sparkle is committed to increase its geographical reach in fast growing countries broadening its customers base and the capillarity of its network.

In the medium and long term, Sparkle aims at expanding company ICT competences, by transforming its network. Direct consequences are data centers infrastructure expansion and upgrading, necessary for Sparkle in order to position itself beyond the pure transport of voice and data to the high-end of the value chain characterized by services which enable higher profitability and growth.

Figure 12. TI Sparkle Strategy

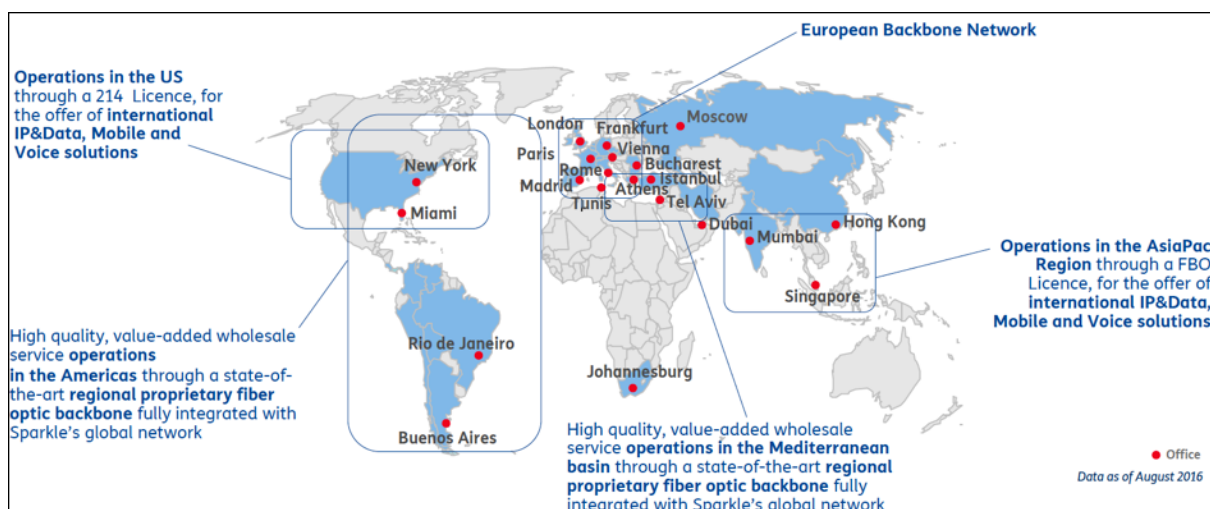


Source: Sparkle Corporate presentation

3.7. International presence

With an unparalleled experience and know-how in a multitude of markets, Sparkle owns and manages a technological advanced network of fiber of about 560.000 km embracing through its fully owned companies and offices in 37 countries, as shown in Figure 13.

Figure 13. TI Sparkle international presence



Source: Sparkle Corporate presentation

Company presence is particularly relevant in Europe, in the Mediterranean Basin and South America. Expansion policies have been directed especially to Africa, Asia, Middle East and North America.

Europe, including the countries bordering the Mediterranean Basin, accounts for almost half of Sparkle revenues, as reported below in Table 2.

Table 2. Sparkle revenues per geography

Area	Europe and Mediterranean Basin	Americas	Africa, Middle East and Asia Pacific	TOT
Revenues (%)*	51,3	26,4	22,3	100

* 2016 gross revenues to third parties excluding those ones not referable to regions

Source: Sparkle official reporting

Sparkle global network is made of Pan European backbone, Mediterranean and Latin America Nautilus network, Usa backbone and cables in consortium connecting India, Singapore and Hong Kong.

In Europe, in the Mediterranean Basin and in Latin America Sparkle Group architecture is made of different asset companies, whose institution is mandatory by law in order to do business in the countries in which Sparkle is present with its infrastructures.

Beside them there are five main profit companies which manage Sparkle infrastructures and, differently from asset companies, directly bill and have their own revenues which are in turn consolidated into Sparkle Group balance sheet. These companies are:

- *Telecom Italia Sparkle*
The parent company with head-quarter located in Rome. It operates into international voice, data and internet services directed to "*heavy users*" clients such as mobile and fixed carriers, internet service providers and multinational corporations;
- *TI Sparkle Americas*
Formerly known as LanNautilus, the subsidiary owns and manages Pan American backbone. The headquarter is located in Miami;
- *MedNautilus*
The subsidiary owns and manages Mediterranean backbone and provides cloud and data centers solutions through proprietary next generation assets located in Athens and Istanbul²⁹;
- *TI Sparkle North America*
The subsidiary with headquarter located in New York operates through a license in the United States of America;
- *TI Sparkle Singapore*
The subsidiary with headquarter in Singapore operates through license in the Asian-Pacific region.

Below, each macro region in which Sparkle Group is present will be briefly discussed ³⁰.

Europe and Mediterranean Basin

In Europe Sparkle counts on a consolidated leadership on the wholesale market and Tier 1 position with respect to IP transit, leveraging on Pan European backbone (PEB) assets and peering relationships.

In the Mediterranean Basin the Group is among the principal providers of international wholesale services as well as among the principal IP Hubs thanks to its strong infrastructural presence made of:

- Mediterranean Nautilus cable which connect Italy to Cyprus, Greece, Turkey and Israel thus granting a leadership position in such markets;

²⁹ TI Sparkle Americas (formerly known as LanNautilus) and MedNautilus are part of LanMedNautilus Group with headquarter in Dublin, Ireland.

³⁰ For further details please refer to public Sparkle Balance Sheet (2015).

- SEAMEWE and IMEWE submarine cables which grant Europe-Asia connection and qualify TI Sparkle as reference player for such route;
- Data centers of Istanbul, Athens and Catania which contribute strengthening Group positioning as regional hub;
- Sicily hub next generation data center in Palermo in partnership with DEC-IX. The project, launched in March 2015, has been designed to become the leading IP gravity center in the Mediterranean basin where contents meet internet service providers (ISP). Sicily Hub is located closer to North Africa, the Mediterranean and the Middle East than any other European peering point. Connected to all cable landing stations in Sicily and served by Sparkle Tier 1 IP Transit service Seabone, it is endowed with top global contents and provides top quality and cost efficient connectivity services with reduced latency and lower bandwidth costs than any other European location.

In order to broaden the already highly capillary network and support commercial actions in such regions, TI Sparkle has closed different commercial partnership with relevant players doing business in the area.

Americas

In Latin America Sparkle is a regional key player and provides international telecommunication services for Tim Brazil thanks to TI Sparkle Americas infrastructure.

Sparkle is pursuing an expansion policy of the infrastructure as regards transmission systems between North America and South America and new points of presence (Pop) and data centers. By strengthening the connection between the two Americas Sparkle is able to catch broadband demand expected in the medium period.

New cable Seabras will connect San Paolo to New York allowing for the support of the capacity demand originating in South America along the South to North America route, one of the most relevant IP traffic stream which accounts for yearly huge growth rates (over 35%).

In North America Sparkle, by means of the subsidiary TI Sparkle North America is expanding IP network for Internet contents direct access as Transit Ip free Operator. In the USA, Sparkle runs its business by leasing capacity on annual terms.

Africa/ Middle East

Thanks to the infrastructural investments in the Middle-East Sparkle manages one of the major data/ IP networks of the region.

Then, Sparkle is present with a representative office in Dubai, built in order to seize the opportunities in such growing market. In order to reinforce its positioning, Sparkle has opened in partnership with Omantel a new point of presence (Pop) in Oman which will allow for a better managing of the area.

In the African continent, Sparkle is present mainly in the northern area (Magreb).

In the rest of the continent, the goal is to strengthen company presence in areas characterized by economic growth. For this reason, in Djibouti, Ghana and Tanzania, new points of presence have been opened in partnership with local telecommunication operators.

Asia pacific

Sparkle is present in the region by means of its subsidiary TI sparkle Singapore which is responsible for commercial presence in the region. The Company aims at increasing its presence in the region by the opening of new points of presence (Pop) to be added to the already existing ones of Singapore and Hong Kong, such as the IP Pop opened in Mumbai and the Capacity Pop opened in Malaysia recently.

Moreover, TI Sparkle together with other twenty global players is participating to the realization of the new submarine cable SEA-ME-WE 5 which will connect South-East Asia and Europe with a main landing in Catania, Sicily. The cable which is planned to reach seventeen countries will provide lowest latency and represents an additional layer of diversity and resilience for the heavily loaded Asia to Europe route.

4. Telecommunication industry outline

Sparkle, as a global player acting in international telecommunication industry, is committed in keeping constantly monitored its industry scenario and trends.

Before describing the company and its business, in this chapter, thanks to the analysis made available by Telecom Italia Sparkle Strategy department, macro and retail telecommunications industry trends as well as their impact on wholesale telecommunication industry and Sparkle market assessment will be briefly described. Specifically, such topics will be depended in relation to the company international expansion decisions.

4.1. Macro trends

Macro trends analysis involves getting knowledge of demographics and macroeconomics. Urban population and GDP growth are important parameters to be taken into account since the most growing areas certainly condition Sparkle geographical expansion directions. With this

respect, according to United Nations (World Urbanization Prospect), Asia and Africa account for almost the 90% of urban population growth expected for the period 2015-2050. GDP growth instead evidences the relevance of Asia Pacific region as well; in fact, according to International Monetary Fund it contributes for about 50% of total 2015-2019 incremental value.

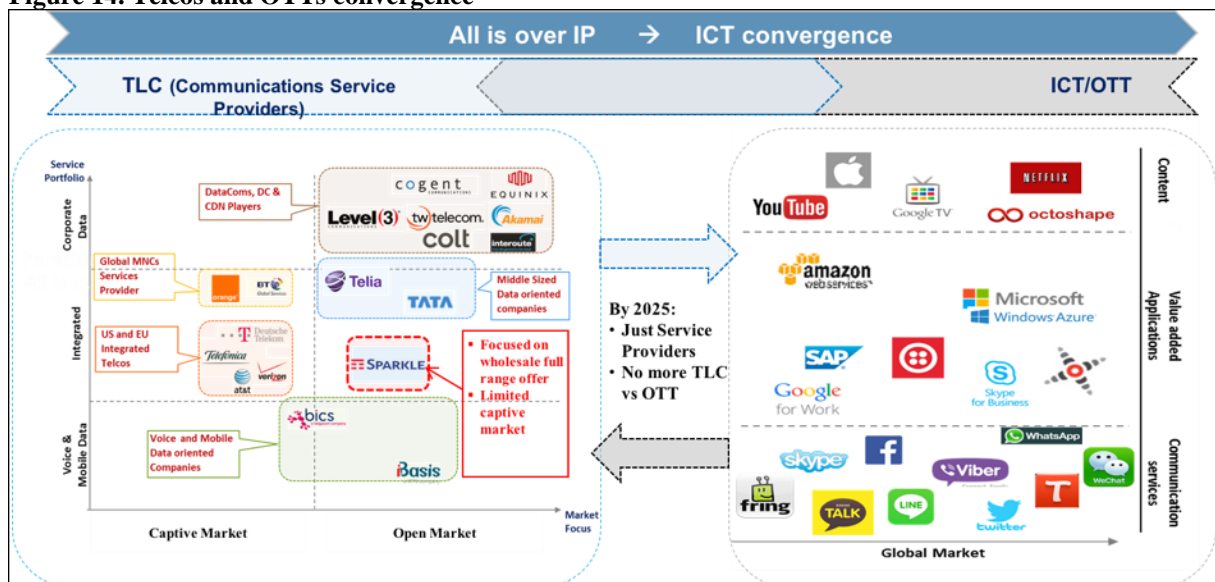
Transversely to all the geographical areas, two main phenomena are sensed, the “*digitization*” process and new competitive pressure coming from over the tops (OTT).

Digitization, a fourth industrial revolution based on big data, internet of things (IoT), cloud, automation and virtualization is pushing all players in every sector to pursue a digital transformation process to stay competitive. The convergence and mutual reinforcement of social, mobility, cloud and information patterns drive new business scenarios creating a hyper-connected world where is key being able to manage huge amount of data, security issues and new channels.

Over the tops companies (OTT) such as Facebook, Google, Microsoft and Apple, relying traditionally on Telcos networks and focusing on mass market, are now starting investing in proprietary infrastructures while targeting business customers.

In few decades, internet applications will become a standard way enabling communication services. Over the top will become simply service providers like telcos companies except for the fact they will have a non-traditional heritage. This is represented in Figure 14.

Figure 14. Telcos and OTTs convergence



Source: TI Sparkle Scenario analysis

4.2. Retail telecommunication trends

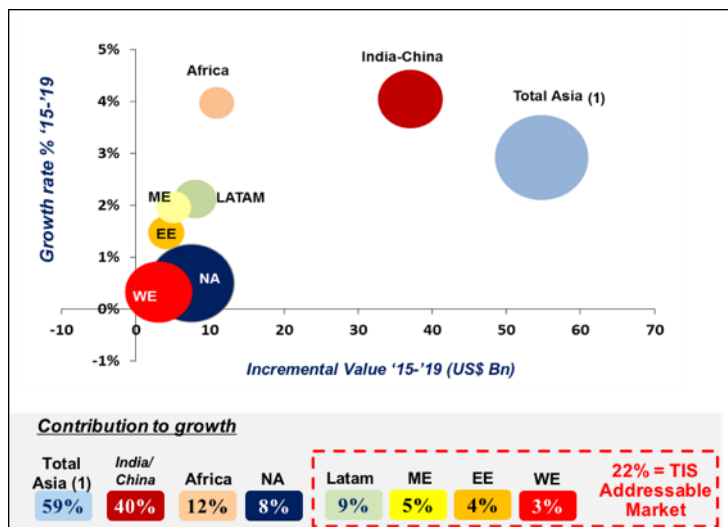
Standard telecommunication services still represent the biggest share of the market but show lower growth rates with respect to IT segments such as datacenters systems, enterprise software

or IT services. In general, data and in particular mobile data sustain large part of telecommunication industry growth.

For the purposes of future geographical expansion, growth of telecommunication industry is segmented per region. With this respect, the highest growth rates are located in Africa and Asia, especially in India and China, as shown in Figure 15. In the regions in which Sparkle presence is higher such as Europe, Middle East and Latin America, is concentrated about 20% of retail industry growth.

Figure 16 highlights for each region retail telecommunication market growth divided per revenues areas: fixed voice, fixed data, mobile voice and mobile data. As previously anticipated, data generally present higher growth opportunities with respect to voice. Mobile component instead prevails on the fixed.

Figure 15. TLC retail market values by region



Source: Sparkle Scenario analysis

Figure 16. TLC retail market revenues areas of growth

	Fixed Voice	Mobile Voice	Fixed Data	Mobile Data	Total Region
India-China	-7%	0%	9%	7%	4,0%
Africa	-6%	0%	5%	17%	4,0%
Total Asia	-6%	-1%	6%	6%	2,9%
LATAM	-2%	-2%	6%	8%	2,1%
Middle East	-4%	-1%	8%	8%	2,0%
EE	-7%	-3%	7%	8%	1,5%
NA	-6%	-6%	4%	6%	0,5%
WE	-5%	-6%	4%	5%	0,3%
Total Service	-5,2%	-2,6%	4,8%	6,5%	

Source: TI Sparkle Scenario analysis

Consumer internet traffic, mostly internet video, will be the driver of IP traffic growth. With this respect, Asia, North America and West Europe account for the largest part IP traffic with Middle East and East Europe registering the highest growth rates.

IP traffic will be mostly spent on mobile networks because of the increasing number of connected devices such as smartphones and tablets.

Finally, connected to the digitization process just mentioned, in telecommunications industry software becomes the main disruptive force allowing network virtualization and even more dynamic configurations.

4.3. Impacts of retail telecommunication trends on wholesale market

Sparkle primarily operates in the wholesale telecommunication market, providing international telecommunications services to fixed and mobile operators, internet service providers, over the tops and application service providers. Main retail business drivers just introduced such as mobile, information and cloud have an impact on wholesale market.

Indeed, new apps, broadband expansion, increasing separation between infrastructure and services are forcing traditional carriers as Telecom Italia Sparkle to adopt different business models. With this respect, Sparkle is reconfiguring itself mainly as a platform.

Wholesale market has also its own main industry trends. Traffic volumes on traditionally focused long distance capacity continue to increase while IP transit and voice services show declining prices due to the increase competition and capacity available. Moreover, traffic flows change their routes being generally less focused on Europe and North America and moving

towards Asia. Lastly, the growing variety of new services among which services variants such as managed high value concentrated services need to be taken into consideration.

Digital transformation is a must for traditional Telcos in order to continue both to provide their core services and enlarge their service portfolio. Network functions virtualization (NFV) and Software defined networking (SDN) are the core enabling technologies to re-architect carrier networks in response to the pressure of a continuous changing environment.

With NFV and SDN, complex telecom functions can be virtualized by creating them purely in software.

The evolution to digital business, enabled by new NFV/SDN innovative network technology, is transforming both networking and IT outsourcing services progressively provided through virtual services and solutions, lowering entry barriers and consenting to a huge number of specialists to enter the market.

4.4. Sparkle market assessment

After having defined macro trends, telecommunication retail market and their impact on the wholesale industry, it follows Sparkle assessment of the wholesale telecommunication market in terms of compound annual growth rate (cagr) and market size both per lines of business and geography.

Figure 17 illustrates potential growth for the different lines of business part of Sparkle perimeter.

Positive and significant growth rates can be noted only in cloud and multinationals corporation's services.

For what concerns geographies, as previously stated Sparkle has a current consolidated presence in West Europe, Latin America and Middle East.

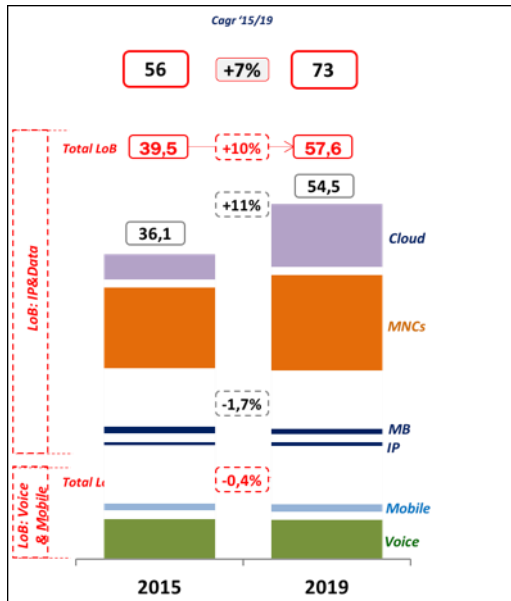
In absolute terms, the biggest regions in terms of total revenues for international services are West Europe, North America and Asia Pacific.

As it can be seen in Figure 18, Latin America, and MEA are the most growing regions with respect to voice and mobile services.

Figure 19 shows how MEA is the second region in terms of cloud and MNCs growth rates. West Europe and Latin America have in any case positive growth rates.

Finally, as it can be seen in Figure 20, West Europe, Latin America and MEA are top three areas for what concerns IP market growth rate.

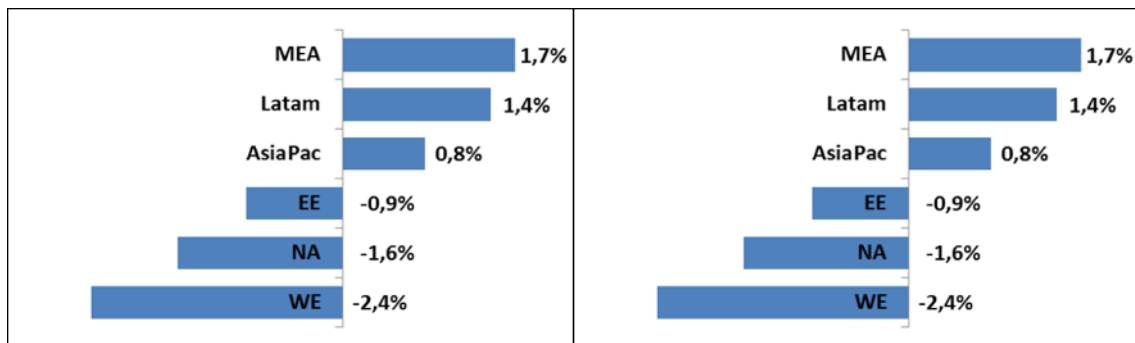
Figure 17. Market value trend segmented per Sparkle lines of business



Source: TI Sparkle Scenario analysis

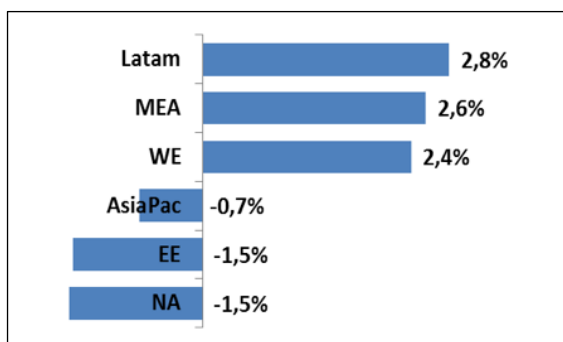
Figure 18. Voice and mobile services growth per region ('15-'19)

Figure 19. Cloud and multinational companies service growth per region ('15-'19)



Source: TI Sparkle Scenario analysis

Figure 20. Total IP service growth per region ('15-'19)



Source: TI Sparkle Scenario analysis

5. Sparkle sensing, seizing and transforming capabilities

Recalling part one, sensing activity consists in scanning, interpreting and learning from the

business environment. Once such scenario has been depicted, suggestions and hints for future business opportunities must be seized through appropriate actions. This means committing the resources as well as designing the right business model.

From an organizational point of view being able to seize the opportunities identified means also transforming, changing routines and procedures, recombining assets and organizational structures keeping them aligned with environmental market changes (Teece, 2007).

In part two, by following Teece (2014a) such dynamic capabilities are applied to the multinational enterprise and more in general to the firms' internationalization process.

Sensing specifically becomes the firm ability to identify business opportunities abroad.

Seizing instead involves being able to address such foreign opportunity and this in turns means having the resources, not only financial, to be invested and committed to a foreign country. In addition, it means also choosing how to enter in a particular market and how capabilities need to be adjusted or upgraded due to the different local contexts.

Transforming appears to be the most complex dynamic capabilities to be built by multinational firms. Above all, it involves managing the relationship between subsidiaries and headquarter which theoretically, by adopting a dynamic capabilities perspective, should function as an orchestrator managing co-specialization and complementarities (Teece, 2014a).

Following this kind of reasoning, a description of how Sparkle senses and seizes and transforms worldwide will follow.

5.1. Sensing

Being international services at the core of its offer and being Sparkle present in a huge number of countries, foreign opportunities sensing activity is regularly carried out at a global level by the headquarter with the support of local business premises. International telecommunications outline portrayed in the previous chapter is the output of such kind of analysis in which, macro trends as digitization and competitive pressure arising from OTTs embrace the whole company as global player in the industry.

"Like ideas, dreams and thoughts, we have no boundaries".

As the company campaign started at the end of 2013 and just reported clearly points out, Sparkle's strategy is to be global as much as possible. Sparkle, as stated by the present CEO

Alessandro Talotta in one of its interviews, "*wants to be a global leader with a global focus*".³¹ This is backed by its continuous expansion towards new geographical areas. Sparkle recent infrastructural investments in Seabras cable which connect North America with Latin America, SEA-ME -WE cable which brings company network to reach the South-East Asia, Sicily Hub which supports company business in Africa and Middle East, are direct consequences of such path Sparkle wants to follow.

This intention as well as infrastructural investments would have not been possible without the continuous scanning of opportunities performed around the globe.

Sensing activity can be clustered depending on the opportunity type detected. Then, by generalizing, foreign opportunities can be classified in three main typologies³²:

- *Market driven opportunities;*
- *Client driven opportunities;*
- *Network driven opportunities.*

Market driven opportunities originate essentially from a business or product whose need is detected centrally. In such cases, the opportunity on a particular geographical area is often pushed by Strategy department which senses, shares and discusses it with Marketing department and workforce on the field providing the necessary support.

Generally, a market analysis in terms of business development and lines of business is performed by assessing different parameters such as macroeconomics (mainly GDP growth and population), ICT competitive stance, traffic routes, international internet bandwidth growth, IP market volumes and regulatory issues.

Opportunities are then calibrated depending on the attractiveness of the different countries and on opportunities feasibility.

In fact, Sparkle's infrastructure precedent investments in terms of points of presence (POP), cables, salesforce presence and level of competition weight countries attractiveness in order to privilege continuity actions³³.

Sparkle interests in specific markets can be facilitated and realized through the investment in

³¹ Above mentioned interview was released by Alessandro Talotta in favor of IWT (International Telecoms Week) on May 9th, 2016 (downloaded at <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2677>).

³² In some circumstances above mentioned typologies tend to overlap. That is to say an opportunity, as example, could be at the same time market and network driven.

³³ This kind of approach does not exactly match with Teece (2007) definition seizing. Indeed, by prioritizing continuity actions, Sparkle finishes to privilege projects which are safer against the others.

new submarine cables connecting different countries around the globe and representing the "highways" by means of which voice and data can move from one country to another. Such infrastructure is a significant part in Sparkle network together with regional backbones.

As example, recalling Seabras submarine cable investment (connecting Brazil to United States and of which Sparkle owns three fiber pairs of out of the six available), this was made because capacity available in such root was not sufficient to support the demand expected for it. The discrepancy was analyzed centrally by the headquarter. Then, scouting of the different cable initiatives available was performed locally, on the field.

Market driven opportunities are then characterized by a predominant role exercised by the headquarter. This is the main difference between the first type of sensing activity and the second.

In fact, if the opportunity is *client driven*, sensing becomes immediate since opportunities are directly scouted on the field by Sparkle commercial workforce deployed abroad.

Operating Sparkle mainly in the wholesale market and doing Sparkle often business with customers such as national carriers or local mobile operators, it is not rare that opportunities emerge directly from the clients manifesting a specific need.

In such B2B market the customers Sparkle does business with are endowed with similar capabilities and know-how relating to telecommunications industry. Sparkle, simply by listening to them becomes through its network an enabler of their specific requirements and can adapt its service proposition accordingly.

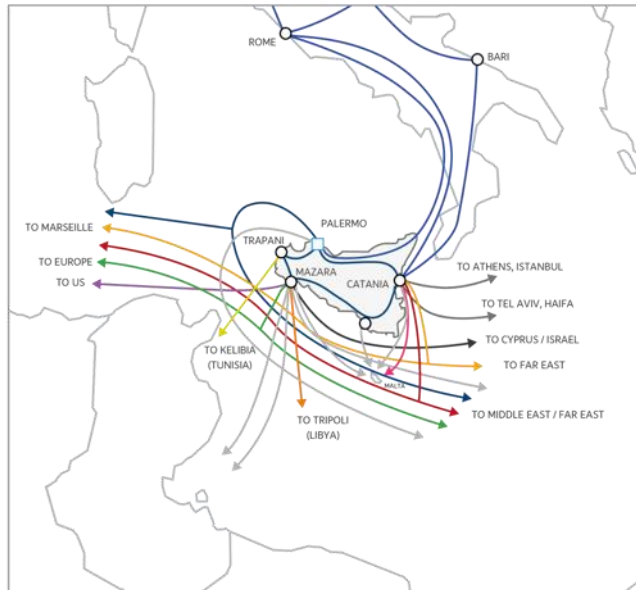
In this sense, it becomes extremely important to be present abroad by means of offices and salesforce together with infrastructures in order to be ready to meet whatever customer need by sharing the same environment and culture with them. With this goal in mind, the offices in Dubai (Arab Emirates) and Mumbai (India) have been recently opened.

As example, directly from the discussion started in America with some OTTs, among which Google, it has emerged the specific opportunity that has then brought in 2015 to Sicily Hub Sparkle's Next Generation Data Center in Palermo opening. In fact, Sicily has a strategic position being located closer to North Africa, Middle East and Asia, is connected to all cable landing stations in Sicily and is served by Sparkle Tier 1 IP Transit service Seabone. Thanks to the partnership with the internet exchange provider DE-CIX, Sicily Hub has become the best private and public peering hub on the Mediterranean, with cost efficient connectivity services, reduced latency and lower bandwidth costs than any other European peering point.

Its customers, from carriers to internet service provider lay their equipment inside and then can interact and peer with the most prominent content providers landing in Sicily Hub.

Below, Figure 21 better represents the strategic position of Sicily Hub as turning point for international communication, especially for the Asian and African market.

Figure 21. Sparkle Sicily Hub



Source: Sparkle Corporate presentation

Last cluster of foreign opportunities is represented by those that are *network driven*.

They are usually sensed centrally by the functions managing Sparkle network engineering and their primary objective is to harmonize Sparkle infrastructure moving towards efficiency and technological issues accomplishment.

Once foreign opportunities information and characteristics are collected, then it starts a more advanced business planning phase in which future revenues and capital expenditures are assessed for the specific countries and investments addressed. Such results are then brought to the Chief Executive Officer approval who finally evaluates the quality and the appropriateness of the opportunity sensed in relation to Sparkle strategy. An important role is performed by what Teece (2015) calls the top management team (TMT) and in first person by the CEO. Finally, for the opportunities which would involve the higher commitments in terms of resources deployed, in order to proceed further, it becomes necessary the approval by the parent company Telecom Italia.

Summing up, Sparkle's sensing involves:

- regularly monitoring issues such as GDP, population growth, telecommunication industry trends at a global level;
- scanning and analyzing market driven, client driven and network driven foreign opportunities, which are detected both centrally and locally thanks to Sparkle international footprint.

5.2. Seizing

Once foreign opportunities are sensed, then they need to be seized by deploying company's resources abroad (Teece, 2007).

Such capability could be considered as direct consequence of the first dynamic capability here analyzed. However, it's far from being certain that this happens for all the opportunities detected.

Of course, a first limit to opportunities seizing are financial resources. Sparkle is part of Telecom Italia Group which, by quoting its former CEO in 2011 Paolo Ferrari is still a "*large pot of capital expenditures with a certain list of priorities*"³⁴.

Given the scarcity of financial resources, opportunities then must be carefully selected and, as anticipated, Sparkle's management is extremely important in setting company foreign growth direction.

First of all, Sparkle's internationality is given by its international regional backbones (plus opex contracts for the component "off net" which completes its global network) and its commercial presence through its salesforce and commercial offices worldwide.

As a service provider of what can be classified as a "soft service" (Blomstermo et al, 2006) Sparkle must be locally present abroad³⁵.

Reassuming, seizing in Sparkle means managing two fundamental components, one related to network and the other commercial. Specifically:

- increasing network geographical footprint;
- deploying Sparkle salesforce and commercial presence abroad;

The first component is managed by adding new cables, Points of presence (Pops), data centers, submarine cables able to reach the most distant countries. At the moment, Sparkle is globally present through its fully integrate IP network established under different modes: propriety, right of use, leasing, cable consortia.

As example, European and Latin American backbones are proprietary while network capacity

³⁴ Such quotation by Paolo Ferrari is extracted from its interview released in favor of Global Telecom Business on May, 2011, (downloaded at <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2325>).

³⁵ "*Hard services are those where production and consumption can be decoupled. For example, software services and architectural services can be transferred in a document, a diskette, or some other tangible medium. They can often be standardized, making mass production feasible. With soft services, where production and consumptions occur simultaneously, decoupling is not viable. The soft service provider must be present abroad from their first day of foreign operations.*" (Blomstermo et al, 2006).

in South-East Asia and North America is leased. In America in fact, prices for connections are so competitive that it becomes convenient to lease capacity.

Due to their huge costs, cables investments instead are carried out by means of consortia. As example in cable SEA-ME-WE 5 (South East Asia - Middle East and Western Europe) completed at the end of 2016, Sparkle is part of a consortium of fifteen international operators and recently has been awarded with the role of network administrator through an internal tender. As regards network, the choice to enlarge infrastructure in certain new geographical area depends on the company sensing described in prior chapter. Broadly speaking, it takes place as demographic studies and market assessment have already been completed and have been supported by investing decisions by the top management.

First, it must be decided which kind of presence or infrastructure is needed depending on the type of service that it is decided to be provided. Typically, they are connectivity (data) services which require routers to be installed while less common is to open new phone services.

Then, the new point of presence opened must be connected to the existing network. In this case, Sparkle can address other operators which supply capacity by leasing it on the base of the traffic forecasted or it can connect it "*on net*", a choice common in metropolitan areas characterized by higher commercial value.

The second component is represented by the commercial part of Sparkle business. Broadly speaking, the main goal of such activity is to sell worldwide Sparkle connection services to the targeted customers.

In this sense, Sparkle's salesforce refers to four regions in which the company is organized: Americas, Europe, Mediterranean Basin and Africa, Middle East and Asia Pacific³⁶. In those regions the company is present through its subsidiaries and offices previously described.

Such regions are supervised and coordinated by Marketing function which is located in the company headquarter in Rome.

Sparkle usually acts by means of its salesman, specialized for the different lines of business in which the carrier declines its service proposition: voice, mobile, IP & data and other data such as multinational corporation services and cloud solutions.

However, it is not rare that in some circumstances, depending on the typology of service provisioned and on the particular country of reference, Sparkle makes use of third parties to sell its products.

When Sparkle moves from the wholesale to the retail business involving multinational

³⁶ Company is in the process of reducing regions number to three by merging Europe with Mediterranean Basin and Africa.

corporation or cloud services, the company does not possess the adequate IT skills and capabilities and must rely on system integrators or telecommunications companies such as Colt that are more focused on corporate data.

As example, this is the case of Turkey, in which in order to leverage Sparkle data centers located in the region by targeting small medium enterprises and selling them advanced cloud solutions, Sparkle has had to look for a system integrator able to support such business.

In dealing with corporate customers instead it is extremely important to be able to intercept the client and sometimes it is necessary to be helped by such partners as Colt and its greater service capillarity.

In the most distant markets both geographically and culturally, such as in Africa or Middle East salesforce in part counts on local agents and intermediaries which, being near to customers both in terms of territory and culture, give their contribution in approaching them.

Sparkle has always been operating in the wholesale market of telecommunication and it is not used to be a consumer retail oriented carrier. Below two quotation by former Sparkle CEOs highlighting the importance of the commercial part of Sparkle business.

*"We have the mentality of a B2B network technology company. While I understand Sparkle is not a consumer retail oriented company, I would like to be a little more commercially oriented"*³⁷.

*"Wholesalers are commercial entities and sometimes are to focused on network infrastructure, capabilities and competencies. We should be equally focused on customers and their needs. It's important to have scale with your salesforce in order to tap into that"*³⁸.

Finally, seizing involves also the entry-mode selected by Sparkle in order to enter in new geographical markets, a topic widely discussed in internationalization studies and already touched in such analysis by having made reference to infrastructural investments and partners. In the past, before Telecom Italia Sparkle birth, as reported in sub-chapter 3.1, Sparkle directly invested abroad by means of foreign direct investments (FDI). The principal network infrastructure of which Sparkle is owner refers to those years. Subsidiaries part of Telecom

³⁷ Above mentioned interview was released by Paolo Ferrari in favor of Capacity Magazine - The Big Interview on December, 2010 (downloaded at <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2298>).

³⁸ Above mentioned interview was released by Elisabetta Ripa in favor of Capacity Magazine -The Big Interview on December, 2014 (downloaded at <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2425>).

Italia Sparkle Group themselves were the result of "*green-field*" foreign direct investments³⁹. However, more recently partnership has become an important component of company expansion policy, allowing it to maximize its investment strategy. Partnerships are supporting the company vertical (in terms of service proposition) and horizontal (in geographical terms) expansion⁴⁰.

Sparkle recent focus on fast growing market such as Africa, Middle East, requires a local presence that is now achieved with a mixture of direct investments and partnership with local operators. The ingredients for successful partnerships are listed below by Alessandro Talotta⁴¹.

"A winning partnership model is the result of an equal contribution of assets and know-how by the two partners and this is the model we have recently pursued in Africa and in Middle East where we have successful collaboration in Tanzania, Ghana, Djibouti and Oman among others".

As mentioned above, in order to reach the Eastern and Southern part of Africa, Sparkle has set up in 2010 a strategic partnership with Djibouti Telecom which had led to an IP Pop establishment in Djibouti. In a few months of joint activities Sparkle has been able to consolidate a significant customer base and several gigabytes of committed capacity.

Moreover, the African company investments in several submarine cables landing in Djibouti have made such operator a natural choice as strategic partner.

Recalling the importance of commercial relationships, Djibouti Telecom is endowed with a very focused management with broad and innovative commercial approach that has made business relations in a difficult region easier, fluid and very productive.

The same model has been utilized to enter in 2016 in complicated countries such as Iran, in which Sparkle is the first global operator to partner locally with TIC. That has provided a major opportunity to serve Iran and the region with Sparke data solutions⁴².

³⁹ A green field investment is a form of foreign direct investment where a parent company builds its operations in a foreign country from the ground up. For further details please make reference to <http://www.investopedia.com/terms/g/greenfield.asp>.

⁴⁰ Vertical expansion will be deepened in the next chapter.

⁴¹ Above mentioned interview was released by Alessandro Talotta in favor of Telecom Review on November, 2015 (download at <http://www.tisparkle.com/default.aspx?Lang=ENG&idPage=2627>).

⁴² Doing business in Iran is made difficult by the extremely tense geopolitical situation existing between Iranian government Europe and United States of America. For further details please make reference to

As the examples reported above, several Points of presence (Pop) are opened in partnership with local operators with the objective to enhance Sparkle IP Global network increasing its capillarity to better reach customers. Usually, they are commercial partnership in which local operators usually provide space, technical network infrastructure, local support, first aid in case of hardware breakdowns in exchange of a revenues share.

It should be now clear how partnership models are able to sustain Sparkle seizing of foreign opportunities overcoming financial resources scarcity, helping the company in the scouting of new business opportunities and allowing Sparkle to "*test the water*" in riskier countries in which is necessary to have a gradual approach such as Iran.

Summing up, Sparkle's seizing involves:

- committing financial resources in order to continue investing in its network infrastructure international reach extension, after a careful and correct valuation by top management;
- deploying globally its salesforce potentially with the support of third parties in order to be better focused on satisfying customers' needs;
- setting up partnership with the right partners;

5.3. Transforming

Transforming capability is the firm ability to continuously renew its asset and capabilities in order for that to timely react to or even shape business environment changes (Teece, 2007).

Intended in its original meaning then transforming capability is an "*hot topic*" in Sparkle nowadays.

Indeed, digital transformation has become a must for traditional telecommunications companies in order for them to continue both to provide their core services and enlarge their service portfolio, moving up to the high end of the value chain by making Sparkle a smart data company offering value added services such as cloud and data center services.

Sparkle operates in an international market in which communication service providers as well as over the tops are competing each other. In such context, it becomes of vital importance to rethink the company for what concerns market approach and the way ICT services are delivered.

The wholesale sector and Sparkle itself have then to interact with OTTs finding a way to

<http://www.ilsole24ore.com/art/management/2016-05-04/iran-cosi-cambia-business-la-fine-sanzioni--134550.shtml?uuid=AD81QM>.

cooperate for mutual gain. In this sense the decision to open Sparkle Sicily Hub, the next generation data center described in the previous pages has to be interpreted. Such environment is able to stimulate a combination of complementary innovations by those players just mentioned so as to provide solutions with low time to market while letting Sparkle acting as enabler and platform manager.

Sicily Hub has proved to be a success, with players such as Google, Akamai and Lime Light which have chosen to install their equipment in it leveraging its strategical position to direct data to and from Africa, Middle East and Asia.

For this reason, it is a model which will be likely replicated in other parts of the world such as Panama, similar to the Italian island for the importance of its geographical position.

Sparkle wants to shift from a simple international connector to a provider of solutions. The more the world becomes IT based, the more the more the service provided by operators such as Sparkle becomes near to the content elaboration and distribution.

Sparkle while continuing to extract the maximum value from traditional and commoditized market (mainly voice and mobile) it is moving towards a more IT based arena.

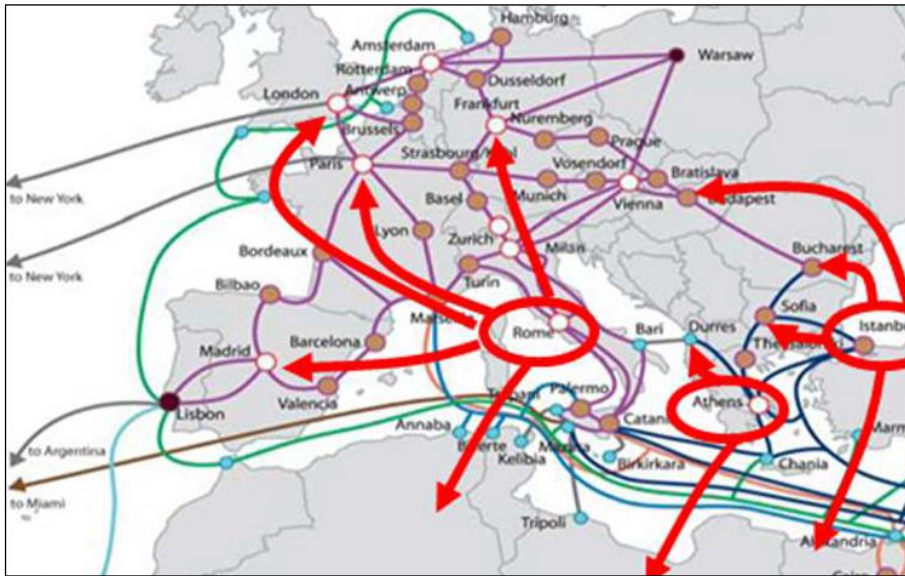
Sparkle customers are not simply providing access but are offering their consumers a bouquet of services which include communication as well as televisions, movies and so on. In this sense, data centers infrastructures acquire particular relevance as critical points in which contents are concentrated. Therefore, being able to connect them internationally while focusing on traffic and content development becomes extremely important.

Moreover, especially enterprises are progressively adopting cloud computing. In few words, they make use of scalable computing resources such as hardware and software which are delivered over a network. Then, from simply providing services of housing/colocations by which operators transfer their equipment and server, Sparkle, leveraging on its data centers and on Telecom Italia cloud platform "*Nuova Italiana*" has broadened its offer to more sophisticated cloud solutions targeting both enterprises and operators which might require the service to serve their customers.

With this respect, Sparkle has created a network of state of the art data centers in Italy, Greece and Turkey which leverage on a fully redundant, low latency and top performing global backbone, to position itself as the right choice in EMEA region for value added solutions from connectivity to advanced IaaS, Paas and SaaS solutions.

Leveraging on Sparkle international network and point of presence such solutions are then provided from Italy, Greece and Turkey to other countries, as represented in Figure 22.

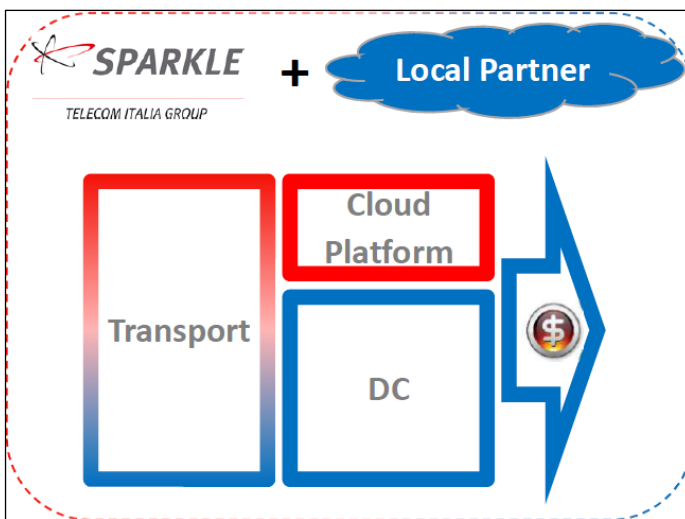
Figure 22. Synergies between Sparkle data centers and its international network



Source: Sparkle Corporate presentation

Sparkle is looking for local partners in order to enlarge service offering in its existing Pops and to further expand its operations, by following a cooperative approach represented in Figure 23.

Figure 23. From a make option to a cooperative approach



Source: Sparkle Corporate presentation

Traditionally Communication Service Providers have developed network related capabilities but are not ready to a transition towards a complete ICT offer. Time to acquire necessary capabilities are not compatible with clients' demand so that for international players such as Sparkle two options available remain partnership or acquisitions.

For these reasons a few years ago, Sparkle has signed an agreement with Equinix, one of the major global cloud exchange data center which has provided Sparkle customers (enterprises in

particular) with on demand access to multiples cloud providers services such as Microsoft Azure, Amazon AWS, Oracle, etc. globally.⁴³

Sparkle has well understood the rapid change of market scenario and customers' needs. As a consequence, it has set the path towards its digital transformation. In fact, focus on hardware has shifted to focus on software, as represented in Figure 24.

Figure 24. From hardware to software

Yesterday		Today
Focus on hardware	➔	Focus on software
Fixed and Single	●.....➔	Dynamic and configurable
Separation	●.....➔	Integrated
Special	●.....➔	Configurable
Network management	●.....➔	Customer management
Long time	●.....➔	Real-time
Static	●.....➔	Granular and dynamic
Fixed connectivity	●.....➔	Mobile connectivity
Owner computing	●.....➔	Sharing computing

Source: Sparke Corporate presentation

Transformation objectives are defining a software defined telco which makes available, in every step of the process, information and instruments able to respond efficiently and effectively clients need in order to create and sustain a competitive advantage on the market. Of course, together with infrastructure change it will be necessary and fundamental a change in organizational culture (Bellezza et al, 2006).

However, if one wanted to link transforming capability just described to multinational enterprises and more specifically to firms' internationalization process, the focus would shift from technological issues just described to the firm ability to manage the relationships with its subsidiaries and local premises abroad. For Teece (2014a) their relationship should be be-directional with greater autonomy for subsidiaries so that they become sources of innovation and development of new capabilities to be transmitted from the periphery to the center which in turn should act only as an orchestrator.

As already described TI Sparkle S.p.A., the parent company of the group with headquarter in Rome, has four main subsidiaries and several offices located worldwide.

⁴³ For further details please make reference to <http://www.capacitymedia.com/Article/3416736/Infrastructure-and-Networks/TI-Sparkle-joins-Equinix-Cloud-Exchange.html>.

Generally speaking, Sparkle does have an organization that is a mix between a decentralized organization and a centralized one where the continuous scanning for new opportunities (client driven) is delegated to salesforce and related technical engineers. They share customers environment, culture and are able to discuss directly with them the new opportunities.

On the other side, decisions about strategic plans, investments, technologies (staff functions) are managed centrally by top management of (mainly): Strategy and Positioning, Lines of Business Technology, AFC. This way the process tends to harmonize technical solution and provide a structured evaluation of the different opportunities.

Marketing guide-lines and go to market strategies are set centrally by the marketing department and transmitted to the regional commercial offices. Sales are instead managed locally. Salesforce coordinated by different Area managers autonomously identifies new clients and prospect to be targeted, directly managing the composition of their portfolio.

However, since together with control it is equally important to manage flexibility while accelerating decision-make process, a new Salesforce and customer relationship management tool is going to be implemented in order to improve communication, delivery time, approvals and lead time. Data arising from surveys, one to one interviews, training sessions have been organized, analyzed and related actions have been prioritized. In accordance with that initiative process and procedures are currently under revision. When completed, a network orchestrator will harmonize different operational support systems providing real time data to support decisions and a more cooperative environment, almost a social community is going to be created in order to gather real time opportunities and properly share information at earlier stage than before.

Moving to the network in this case the management of the operations is delegated to the different subsidiaries which will decide development and upgrade of their network of competence. Also in this case decisions regarding technology or investment in new submarine cables instead devolve to the headquarter.

Sparkle global service proposition does not manifest evident difference in its provisioning and the direction set by top management is to proceed with an overall standardization of procedures. Here the goal is to have a tight control of what it is still a mainly wholesale business which *“must be handled with care”*.

In any case, it also must be noted that the nature of the service provided does have not ever required a particular adaptation to the different market context. Broadly speaking, at the moment the service offered to an Asian operator is the same of the service offered to an American operator except for the technologies involved. It is the such operator which, depending on its technological and customers' needs, will choose the most preferred

connectivity service to be provided by Sparkle. Therefore, local autonomy seems not to be perceived by the company as a mandatory and compelling issue.

As the company will become more retail-oriented and more focused on clients than on network, it is likely that such need will be felt.

Summing up, Sparkle's transforming capability:

- being the most pervasive and difficult to be built dynamic capability, is hard to be contextualized into Sparkle reality except for its original meaning;
- following its original meaning (Teece, 2007) involves an effort for the reconfiguration of its procedures and infrastructure towards the digital business and the providing of value added services;
- is not evidenced by means of such orchestration function which should be played by headquarter with respect to its subsidiaries and offices. Locus of decisions and innovation resides mainly in it.

6. Discussion

In the lights of Sparkle case-study just depicted, here below theoretical contributions and managerial implications are reported.

6.1. Theoretical contributions

In part I it has been introduced dynamic capability framework characterized by the tripartite scheme made of sensing, seizing and transforming capabilities.

Then, theoretical foundations for an analysis of dynamic capabilities in the firm internalization process instead have been set forth in Part II. Calling them back, they are the studies by Luo (2000, 2002), Prange and Verdier (2011) and Teece (2014).

While concluding such bibliographical review, it has been noted how three different studies took different perspective of the same phenomenon: dynamic capabilities in the internationalization process. While Luo focuses on capabilities exploitation and deployment, Prange and Verdier focus on international performance and Teece on foreign opportunities as starting point for going abroad.

More specifically, by means of a qualitative case-study it has been chosen to apply the framework advanced by Teece in order to investigate in practice the meaning of sensing, seizing and transforming when they are applied to the internationalization process of a firm.

In fact, dynamic capabilities have been mainly studied from a theoretical point of view so that they have been criticized for their lack of specificity (Grant and Verona, 2015).

Here, attention has been equally directed to its commercial, operational and organizational perspectives. In this sense, the study aspires to integrate such three perspectives.

What emerges from this kind of approach is that despite the fact three dynamic capabilities have always been described as unique combined sets, they can actually take different forms depending on the perspective from which they are analyzed.

Sensing capability, which is defined as firm process and managerial orchestration activities conducted inside the firm leading to the "*identification of foreign opportunities at home and abroad*" (Teece, 2014) is different in the place and in the manner in which it is deployed when the focus shifts from production and operations to the commercial. Indeed, in the former decision can be easily taken directly from the headquarter focusing more macro data and trends monitoring (e.g. GDP, population growth, etc.) while in the latter the need for a local presence abroad through salesforce managing relationships with clients and prospects.

Seizing capability, which is defined as firm process and managerial orchestration activities conducted inside the firm leading to the "*mobilitation of resources globally to address opportunities and to capture value from doing so*" (Teece, 2014) entails two main decisions and related capabilities: new infrastructures investment (e.g. production plant, network infrastructure, etc.) and salesforce deployment abroad by means of subsidiaries, foreign offices or third parties. While the former is critical in the operational perspective, the latter is fundamental in the commercial one. This is true especially in the case of soft service firms which must be present on the field, as previously underlined.

Transforming capability, which is defined as firm process and managerial orchestration activities conducted inside the firm leading to the "*continued renewal*" (Teece, 2014) is maybe the most difficult dynamic capability to be built. It means being able to constantly renew firm assets and capability in order to react to or even shape business environment changes (Teece, 2007).

However, while expanding internationally, in order to let the headquarter as an orchestrator of its subsidiaries and offices abroad, it turns out to be of great importance the management of their organizational relationships in terms of innovation and exchange of know-how.

Then, transforming seems to be more general and related to the company organizational traits. What just described and abstracted from case-study theory application, has a main implication which is advanced as theoretical proposition:

P.1: "In the firm internationalization process dynamic capabilities involve different part of the company: commercial, operational and organizational. Sensing and seizing, depending on the fact they are related to operations and/or commercial, can take different forms. Transforming seems to be more general and focused on the organizational part".

In the case of sensing and seizing such difference, as above highlighted, can depends on what is internationalized depending on the different rationales which are behind firm internationalization (e.g. selling in a new market vs producing in new country looking for lower production costs).

Internationalization itself in the studies reviewed by such analysis is considered as unique and comprehensive phenomenon. Moving from what just proposed and regarding the different kinds of sensing, seizing and transforming, it could be further advanced:

P.2: "Different internationalization rationales involves and require different sensing and seizing capabilities".

Furthermore, abstracting from the case studied, a link between entry-mode and dynamic capabilities the company is endowed with can be grasped. Indeed, transforming capability has proved to be extremely important in the case of foreign direct investment. On the contrary it could be supposed that such capability would not be so relevant in the case of export. Moving from that it can be advanced the following proposition:

P.3: "Ideally, different dynamic capabilities combination should lead to different optimal entry-modes".

In order to strengthen the limited and restricted impact which a single case-study can have on theory, further qualitative and qualitative studies need to be developed in order to test the two propositions here advanced.

Finally, with particular relevance to the telecommunication industry, research should be directed also to the investigation of what resources are critical for non FDI based modes in telecommunication service industry as well as the way through which resources and knowledge flow inside international telecommunications network.

6.2. Managerial implications

In dynamic capabilities framework, a fundamental role is played by the top management.

For Teece they are more than simple best practices. They are an ability, capacities which starts with the top management and embrace the whole organization. What is defined by him as "*entrepreneurial management*" highlights the importance of entrepreneurial and leadership skills required in order to sustain dynamic capabilities and asset orchestration.

In internationalisation process such skills are required in order to drive firm expansion abroad. While *sensing* new foreign opportunities together with the continuous scanning activity carried out by the headquarter, managers have to be able to quickly receive and understand new stimuli coming from the lower parts of the organization and from its clients and complementors. The right communication channels and platforms need to be set allowing for flexible and quick decisions.

While *seizing* those opportunities managers are in charge of the selections of those opportunities which will be undertaken by the firm. Financial resources are the first constraint to international expansion. In such selection managers must pay attention to possible decision making biases favouring opportunities providing certain returns against the others thus taking into consideration intangible factors such as co-specialization by investing in resources which increase their value when considered together (Teece, 2007)

For what concerns *transforming* capability, while expanding internationally managers need to consider subsidiaries and offices abroad not as mere extensions of the headquarter, but as places where capabilities can be adapted to the different local contexts and upgraded.

In order to make the multinational enterprise a network in which headquarter is the orchestrator among the different subunits, great effort must be paid by managers in changing traditional firms' organization, corporate culture and mind-set.

Such three dynamic capabilities will not likely be developed in equal measure by the firm. It could also happen that one of the three is not even well developed.

In this sense, to conclude, recalling what stated in the second and third proposition advanced before, depending on the type and rationale of internationalization, managers should balance the types of dynamic capabilities they are equipped with and the types needed depending on internationalization rationale and entry-mode. That is to say managers before going abroad should carefully evaluate firm dynamic capabilities baggage.

If they merely want to export their products in a foreign country it could be sufficient to possess enough sensing capabilities. If instead they have in mind higher commitments in the host country such as foreign direct investments sensing has to be combined with seizing capabilities. In this sense, partnerships can supply to the absence of seizing, both financially and commercially. Finally, transforming capability, which is the most difficult capability to be built, is essential if managers want to achieve as much interaction as possible with foreign markets.

That means being able to adapt to those markets while connecting such foreign experiences in a wider plan characterized by mutual exchanges of resources and capabilities between headquarter and subsidiaries and offices abroad.

A strong brand or a considerable market share are not sufficient to managers in order to successfully internationalise their firms. Indeed, depending internationalization rationale and entry-mode selected, managers should focus on dynamic capabilities building and nurturing.

7. Conclusions

After having described Sparkle company and telecommunications industry outline, dynamic capabilities (sensing, seizing and transforming) have been investigated into Sparkle, a company exclusively focused on its international businesses.

Sensing and seizing are easily identifiable and proved by company international footprint in continuous expansion, especially from a network infrastructure point of view.

The former is sustained together with central monitoring conducted by the headquarter by Sparkle physical presence worldwide, though its subsidiaries and offices worldwide.

Client driven opportunities are in such way scanned by Sparkle workforce which remains constantly in contact with its clients sharing customer environment and culture.

Opportunities seizing is allowed through the continuous foreign investments directed to the expansion of Sparkle network reach and workforce deployment abroad.

After years of foreign direct investments, Sparkle is now making use of partnerships which allow the company to achieve both vertical and horizontal expansion.

For what concerns horizontal expansion, Sparkle can benefit from partner's (usually national or regional telecommunications carriers) network infrastructures and commercial relationships to increase its customer base.

For what concerns vertical expansion, by partnering with companies offering alternative and complementary services, Sparkle is able to tap into such capabilities the company is not endowed with: such capabilities not related to the transport layer of its service but to the service layer, in order to climb the value chain by offering solutions such as cloud and data centers services.

For what concerns transformation capability, Sparkle seems not to take fully advantage of its widely distributed international presence.

While it is able to leverage its international telecommunication infrastructure for connections purposes, it could better use it in order to anticipate innovation.

Exactly in the same manner those companies which have decided to enter into Sparkle Next Generation Sicily Hub by relating and connecting each other can benefit from complementary

innovations, Sparkle could then benefit by a potential know-how exchange by the different subsidiaries, offices and people which are part of its worldwide group.

Low autonomy is granted to the periphery which is in charge of the commercial and maintenance activities. Innovation policies are in fact mainly set by the center, the headquarter. Therefore, transforming capability if not intended in its original meaning, seems not to have been developed by Sparkle.

To conclude theoretical contributions and managerial implications are described.

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