UNIVERSITY OF NAPLES FEDERICO II

DEPARTMENT OF ECONOMICS, MANAGEMENT, INSTITUTIONS

STRATEGIC INNOVATION IN NEW ENTREPRENEURSHIP DEVELOPMENT

Ph.D. Dissertation

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Question the unquestionable (“Tata R.”).

INDEX

INTRODUCTION

Enthusiasm in studying topics related to entrepreneurship and new venture creation derives from the interest in understanding the peculiarities of new entrepreneurs, the way they face technology and compete in even more uncertain markets. It derives from the desire to build a team of motivated people who pursue the same mission, in order to make an impact in the society, enhancing new job creation and wealth at national and international level.

The dissertation explores strategic innovation in new entrepreneurship development. In particular, it aims to investigate the discovery skills (Dyers et al., 2009) of new entrepreneurs, that enhance new venture creation, and their impact on the entrepreneurial learning (Politis, 2005) within entrepreneurship supportive environments.

It looks into the new entrepreneurship development spaces, such as co-working spaces, incubators, accelerators, etc., and into the influence they have on entrepreneurial learning formation. The dissertation contributed to a conceptual and empirical research, developed by Cantone et al. (2016), aimed to explore and measure the contribution of "Innovator's Dna" model (Dyers et al., 2009) in sustaining and developing entrepreneurial team's strategic innovation

learning within a business accelerator in London (UK). Dyers et al.'s (2009) model has been previously considered by Cantone et al. (2014), in order to investigate how innovation intermediaries, mobilize competencies in entrepreneurial teams to generate thriving firms.

Furthermore, the dissertation study aims to give an overview of the factors that impact on new entrepreneurship development, involving a description of the spaces in which the new venture development happens. It aims to represent a multi perspectives source of entrepreneurial literature for aspiring entrepreneurs and management students. Multiple are the examples that express the ability for entrepreneurs to be successful on the market, throughout effective technology management and business model changes, that allow them to reach leading and disruptive market positions.

In literature, entrepreneurship is typically focused on the background of the individual entrepreneur as relevant factor within the entrepreneurial behavior exploration. However, a meaningful study approach needs a more contextual and process-oriented focus. This is sustained by Low and MacMillan (1988) who propose a research design framework in order to investigate the entrepreneurship phenomenon. In particular, they propose six research design dimensions used to compare the past and the future challenges of the entrepreneurial research within the framework (*Table 1*).

Table 1: Overview of Entrepreneurship: Past Research and Future Challenges

Research design decisions	Past Research	Future Research and future challenges
Specification of purpose	Little clarity, descriptive, lack of unity	Clearly stated, explanatory, further economic process
Specification of theoretical perspective	Weak theory development, implicitly assuming strategic choice	Theory driven, clearly stated assumptions, variety of theoretical perspectives
Specification of focus	Focus on personality or cultural determinants	Focus on the entrepreneurial process in social context
Specification of level of analysis	Primarily single level of analysis	Multiple levels of analysis
Specification of time frame	Narrow time frame	Wide time frame
Specification of methodology	Case studies, cross sectional, surveys, single method, descriptive	Theory driven, a priori hypotheses, multiple methods, explanatory

Source: Low M.B., MacMillan I.C. (1988), "Entrepreneurship: Past research and future challenges.", Journal of Management, Vol.14 (2):141

Structure and contents of the dissertation are shown throughout the application of Low and MacMillan (1988) framework and described through the *research design decisions* specifications as follows:

"Specification of Purpose – what is the specific as well as larger purpose of the study?"

The dissertation starts with the exploration of the strategic innovation in new entrepreneurship environment. More specifically it aims to investigate the discovery skills (Dyers et al., 2009) of the new entrepreneur that enhance venture creation, and how these skills impact on the entrepreneurial learning (Politis, 2005) in business accelerators. Wealth creation and economic progress are often results of new development processes that are very common in consolidated innovation ecosystems like Silicon Valley (USA) or Silicon

Roundabout (UK), where incentives and support for new venture development extensively happen.

"Specification of theoretical perspective – which are the assumptions and the theoretical perspective adopted?"

The first assumption is that the skills considered by Dyer et al. (2009), like *questioning, networking, experimenting, observing and associating*, have an impact on the entrepreneurial learning process. Secondly, that entrepreneurial learning process influences the strategic innovation dimensions, such as the creation of a specific value proposition, the formation of a business network and the shape of a shared cognitive scheme, within entrepreneurship supportive environments. These assumptions, will be the *fil-rouge* of the current work and they will be tested in the empirical part of the study. In order to pursue the investigation defined, different theories are considered:

- *in the first chapter*, concepts related to entrepreneurship theories are explored; from the meaning of the entrepreneurial opportunity (Shane and Venkataraman, 2000, Rae, 2003, Drucker, 1985, Kaish & Gilad, 1991) and the intention in launching a new venture (Bugental, 1980, Bird, 1988, Corbett, 2007, Shane, 2000) to the importance that creativity has within the entrepreneurship process (Tu and Yang, 2013), both with the meaning of the entrepreneurial success (Setyawati et al., 2001); psychological theories and the individual experience analysis (Kolb et

al., 2001) help to dig into the entrepreneurial learning (Politis, 2005) and knowledge acquisition (Ucbasaran, Westhead, & Wright, 2003); behavioral approach theories contextualize the entrepreneurial career path (Delmar & Davidsson, 2000), whilst innovation theories (Setyawati et al. 2001) highlight different entrepreneurial logics of thinking (Sarasvathy, 2001, Frederiksen & Brem, 2017) and business models conceptualization (Teece, 2010);

- *in the second chapter*, the exploration is vertical on the individual; starting from the entrepreneur (Ray, 1993), a difference with the managerial profile is made (Pettigrew, 1973, Shapero, 1975, Hofer and Schendel 1978, Amihud and Lev, 1981, Alpert and Raiffa 1982, Ginsberg and Buchholtz, 1989, McGrath et al., 1992, Gartner et al. 1992, Busenitz & Barney, 1997) deep-diving in the mindset and the decision-making ability of an individual who wants to start a new venture (Fiske and Taylor, 1991, Irland et al., 2003, Batha and Carroll, 2007, Haynie et al., 2010); intangible aspects belonging to the entrepreneurial personality (Bruno and Tyebjee, 1986, Gleick, 1987), motivation (Locke, 2000a, Shane et al., 2003) overconfidence, interpersonal ability and network (Merton, 1957, Zimmer, 1986, Granovetter, 1973) toward the skills of the entrepreneur are investigated in literature (Barney, 1991, Ray,1993);

- *in the third chapter* the topic is explored in relation with the contexts in which new entrepreneurship development happens, starting from business ecosystems (Zahra, 2007, Keil et al. 2009, Isenberg, 2010, Nambisan & Sawhney, 2007) focusing on the example of Silicon Valley as one of the main models, in which the perfect integration between academia, research and firms, allows the proliferation of innovation and new entrepreneurship (Eesley & Miller, 2012); it is given a result of a two-month visiting period (from March to May 2017) at the San Jose State University. The theme of the sharing economy introduces co-working spaces (Bilandzic and Foth, 2013, Oskam and Boswijk, 2016, Bouncken & Reuschl, 2016, Lamberton and Rose, 2012), incubators and accelerators theories (Belk, 2014, Johns and Gratton, 2013, Dilts, 2004, Miller and Stacey, 2014, Grimaldi and Grandi, 2005, Barbero et al., 2014, Bruneel et al., 2012, Cohen and Hochberg, 2014) and an overview of different entrepreneurial support programs is provided;

- *in the fourth chapter*, it is described an empirical study, that contributed to Cantone et al. (2016); it shows the findings and gives a response to the assumptions above mentioned, as results of both, the study of the topic and the experience lived from January to March 2015 at Innovation Warehouse, a business accelerator located in London (UK).

"Specification of focus – on what specific phenomena shall the investigation be focused?"

The discovery skills of the new entrepreneur represent the phenomena to explore, the main focus of the study is related to the development of these skills in the process of new venture creation, inside business ecosystems and spaces (ie. business incubators, accelerators, co-working spaces, etc.) in which new entrepreneurship development happens.

"Specification of level of analysis – what level of analysis will be considered?"

Individual, *group*, *organizational*, *industry* and *societal* are the 5 layers to consider (Low and MacMillan, 1988). In the case of the dissertation, the entrepreneur is the main layer, even if his or her team members and entrepreneurship support organizations, represent other levels of analysis. Van de Ven et al. (1984) and Aldrich and Auster (1986), provided examples of a multi-level research design that offer richer insights than a single analysis level perspective.

"Specification of time frame – "what length of time frame will be considered?"

New ventures need time to evolve depending on many different factors (ie. the ecosystem in which they grow, the capital at their disposal, the entrepreneurial ability to manage it over time, etc.). In the case of this dissertation study, the period of literature study is a 3-year PhD program length, in which a couple of periods abroad were carried out. A 3-month

period is related to a research project in which a case study of a business accelerator based in London (Innovation Warehouse) was developed. It represents the main empirical part of the dissertation. A 2-month period involved a visiting period at San Jose State University during which an exploration of different new entrepreneurial development spaces were explored in order to better understand the Silicon Valley business ecosystem.

"Specification of Methodology – what methodology will be adopted?"

Establishing causal links among theories and concepts studied, both with empirical experiences lived during this time frame, a longitudinal and multi method work is necessary. Literature review, an embedded and longitudinal in-depth single case study (Hamel, 1993; Yin, 1994; Easton, 1992, Perry, 1998; Saunders et al., 2000), ethnographic participations, qualitative in-depth interviews (McCormack, 2004; Boyce & Neale, 2006), quantitative questionnaire and confirmatory factor analysis by SEM (Structural Equation Model) based on Partial Least Square (Wold et al., 1984, Tenenhaus et al., 2005) have been adopted in order to explore the purpose of the study and contribute to Cantone et al. (2016).

THEORIES RELATED TO NEW ENTREPRENEURSHIP CREATION

1.1 Entrepreneurship in research

New entrepreneurship is a term, mainly used in public politics as a strategy to develop the territory. In relation with new venture creation, this phenomenon refers to the ability for companies and managers to run a current business while developing new ideas and models for the future. The point of view considered to investigate the new entrepreneurship factors in literature, is the strategic innovation one. However, an exploration of the main concepts related to "entrepreneurship", is needed.

Intertwined with the fields of management, innovation, technology, new product development and small & medium business management, the term entrepreneurship stems in the backgrounds of strategy, sociology, education, economics, anthropology, marketing, phycology and finance, in which the behavior of the entrepreneur is mainly investigated with regard to the different ways a new venture creation is accomplished.

To many, entrepreneurship is a mysterious field because of a lack of clarity. Its boundaries are not well defined and among all the numerous definition proposed in literature, none has been chosen as the most representative.

With reference to the field of entrepreneurship definition, Venkataraman (1997) says that "economists do not define economics by defining the resource allocator, nor do sociologists define their subject matter by defining society. […] it would be a mistake for us to define our field by defining the entrepreneur. […] Thus, starting from the scholarly field perspective, entrepreneurship "*seeks to understand how opportunities to bring into existence future goods and services, are discovered, created and exploited, by whom and with what consequences*".

Hence, discovery, creation and exploitation, surround the construct of the entrepreneurial opportunity which is the essence of this matter.

1.2 **Opportunity**

Ray (2003) defines the opportunity as "the potential for change, improvement or advantage arising from our action", and sustains that it is central in the role of learning and developing enterprise capabilities. Drucker (1985) identifies opportunities in three classes: *1.* unfulfilled market needs, that derives from information asymmetries or technological limits between competitors; *2.* emergencies of a change in economic, social, political and demographic forces; *3.* inventions or discoveries that produce new knowledge.

A significant issue in literature is understanding why some people have the ability to discover entrepreneurial opportunities while others don't. Shane and Venkataraman (2000) thinks that it is related firstly to the possession of previous information, useful to identify opportunities, and secondly to the individual cognitive skills needed to evaluate it. Kaish & Gilad (1991), also sustain that, in order to recognize an opportunity "an entrepreneur has to have prior information". Nevertheless, even if an entrepreneur possesses the necessary information to identify an opportunity, turning it into a successful venture, is not warranted. Hence, building means-end relationships between information and potential opportunities is fundamental and complementary to others entrepreneurial abilities.

Discovering ability is not enough to transform an opportunity into a new venture. Exploitation is needed. The higher the expected value of the opportunity (ie. large demand, high profit margin, etc.), the more is the entrepreneurial willingness to exploit it. Decision-making is another critical ability for an entrepreneur to exploit an opportunity, likewise, understanding the opportunity cost of pursuing other business options (Amit et al. 1995). Cooper et al. (1989) sustain that, the more the transferability of information from a prior experience to an opportunity, the higher the probability of exploitation.

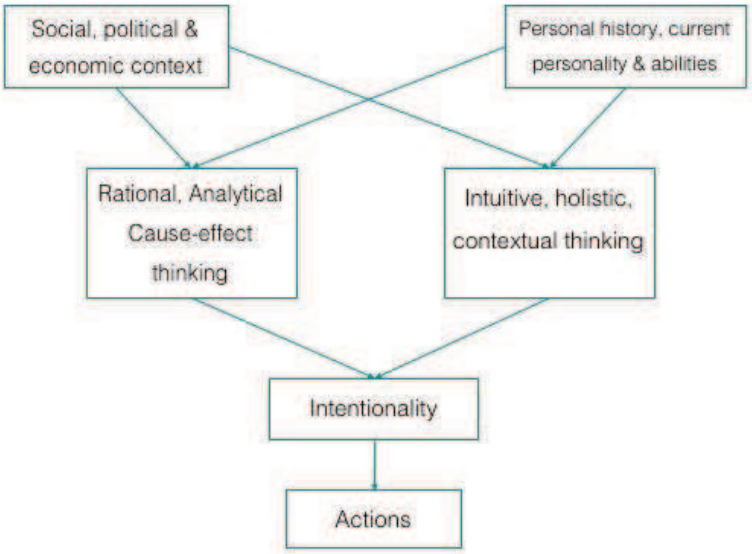
Multiple and diverse are the necessary skills to recognize a business opportunity, and to exploit it until it become a successful venture. Many, are the concepts related to this matter that will be explored, in order to better explore new entrepreneurship.

1.3 **Intention**

The starting point of an entrepreneurial activity is represented by the exact moment in which the entrepreneur has the intention to move forward his "conscious and intended act, the founding of a firm" (Bird, 1988). Intention is depicted as a process that involves, persistence, perseverance and courage (Bugental, 1980), also affected by the external environment interface.

Bird's model, describes a behavioral way that leads to the action of starting a venture, considering the antecedents of entrepreneurial intentionality.

Figure 1: The context of intentionality



Source: Bird, 1988, Op.Cit.

Intention is affected by different dimensions that interact each other in the moment of entrepreneurial intention formation. On the one hand, this is the case of the social and personal factors that respectively impact on the rational and intuitive thinking dimensions of an entrepreneur. On the other hand, the factors related to personal history, previous entrepreneurial experience or personality characteristics, affect the rational and analytic side of the entrepreneurial thoughts.

Researchers, in Corbett study (2007), sustain that "discovering entrepreneurial opportunities requires for individuals, not only to possess some forms of prior knowledge, but to have the cognitive abilities that allow them to value and exploit that knowledge." Shane (2000) claims that the ability to identify an entrepreneurial opportunity is given by the existing knowledge of an individual

about a market, which allow him or her to understand how to serve that market and solve its customers problems.

In particular, with reference to the benefits deriving from individual skills, Corbett (2007) explores a direct relationship between the specific human capital construct and the number of identified opportunities. The specific *human capital* is defined by Cooper et al. (1994) as an "individual's level of industry or technical related knowledge or skill". Thus, the match between the cognitive mechanisms and the previous knowledge of an individual, represents a dynamism that identify entrepreneurial opportunities. In fact, Corbett (2007) illustrates that the already existing technical knowledge is directly correlated with the ability of an individual to discover opportunities.

So, in order to discover an opportunity, the specific human capital, has to interact with *the acquisition and the transformation process of both, information and experiences of an individual*: *learning*.

1.4 **Learning**

"To understand learning, we must understand the nature and forms of human knowledge and the processes whereby this knowledge is created" (Kolb, 1984).

Learning, is defined by Kolb (1984) "experiential" and better described as an adaptation process, in which as long as knowledge is continuously created and recreated, the experience changes in its objective and subjective forms.

Slightly attention, in literature, is dedicated to knowledge development as enabler of market opportunity recognition and new venture creation. These concepts give a picture of the meaning of entrepreneurial learning: "a continuous process that facilitates the development of necessary knowledge for being effective in starting up and managing new ventures"[1].

It can be argued that the process of entrepreneurial learning can be depicted with a predetermined sequence of steps, but also as a complex process where entrepreneurs transform experiences into knowledge in disparate ways. For these reasons, the concept of learning will be explored in the experiential theory through Kolb's, Dewey's and Piaget's models and afterword described in the entrepreneurial perspective.

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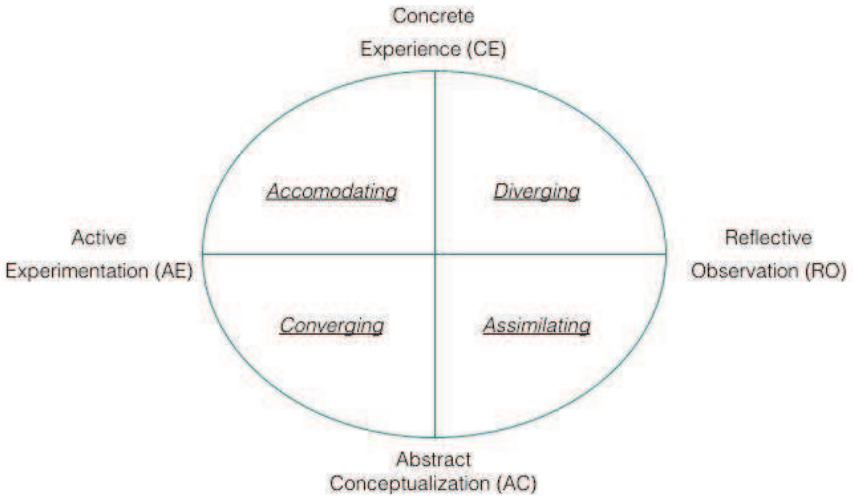
1 Politis D. (2005), "The process of entrepreneurial learning: A conceptual framework", *Entrepreneurship theory and practice*, Vol, 29, n.4, pp. 399-424.

1.5 **Experiential learning**

In the experiential learning theory, learning combines experience, perception, cognition and behavior. In order to describe the learning process in an integrative and holistic perspective, Kolb, Dewey and Piaget, consider three models about how the experiential learning works.

Kolb's (1984) proposes a four-phases learning process (*Figure 1*) that individuals need to carry out in order to develop effective learning. It is described, as an experiential process in which *concrete experiences – CE* are at the basis of cognitive elaboration (*reflective observation – RO*). Thus, a reflective observation transforms the experience, into abstract concepts (*abstract conceptualization – AC*), that converge in action that need to be tested (*active experimentation – AE*), in order to recreate new experiences and startup the cycle again.

Figure 1: The experiential leaning cycle and basic learning styles

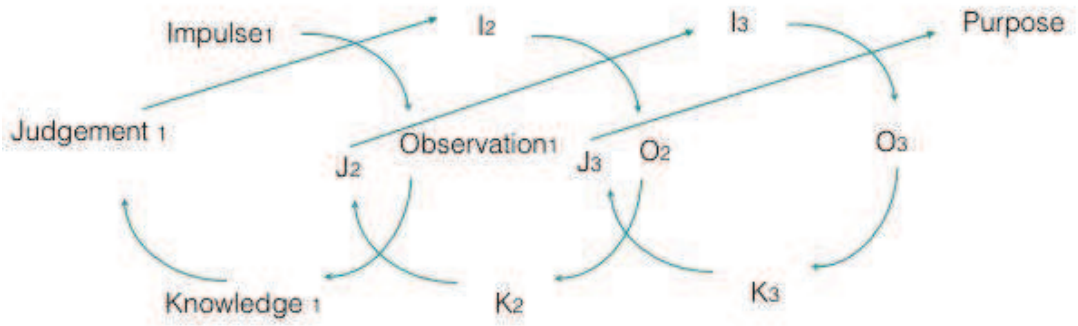


Source: Kolb et al. 2001, op.cit.

Thus, an individual develops knowledge through four distinctive learning abilities (Kolb et al., 2001): *experiencing, reflecting, thinking, and acting*.

In the Dewey's model, the concrete experience breaks down into impulses, feelings and desires, that are the bases of the purposeful action. Thus, action is the result of "(1) observation of surrounding conditions; (2) knowledge of what has happened in similar situations in the past, […]; and (3) judgment, which puts together what is observed and what is recalled, to see what they signify"[2]. Experience gives impulses to generate ideas, from which observations to test derives. So, Dewey's vision of experiential learning consists of a mutual transaction between ideas and impulses, in which ideas are generated by experiential impulses, and experience is enforced by ideas impulses.

Figure 2: Dewey's model of experiential learning

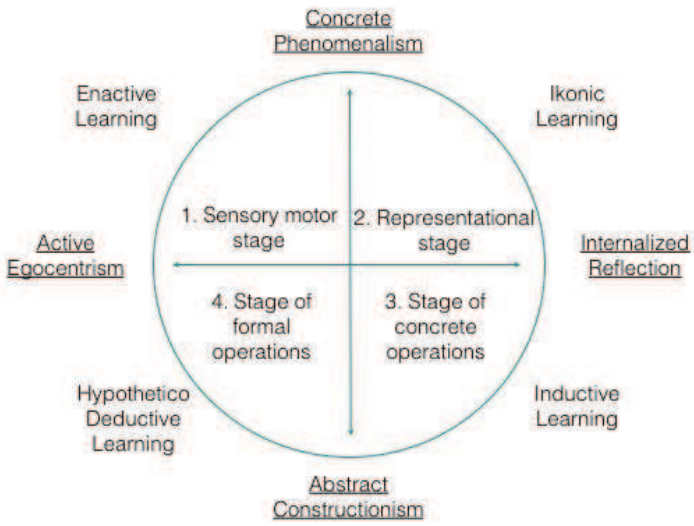


Source: Dewey, J. (1938), op.cit.

2 Dewey, J. (1938), Education and experience, New York: Simon and Schuster.

Piaget, eventually, explains the experiential learning as a cognitive growth that forms the basic learning path of adults. From concrete to abstract and from active to reflective, also in this case, the development is divided into 4 stages: the *sensory motor stage*, in which the environment and the accommodative behavior of the individual (child) plays a critical role in defining goal-driven attitudes; *representational stage*, in which a reflective orientation helps the individual to convert those attitudes and behaviors into images, allowing a multiple perspective vision of the surrounding world; *concrete operations stage* is the phase in which the child attributes symbols to the images of the previous phase, developing linkages between classes and relations; *stage of formal operations*, in which the previously developed symbolic ability, allows the child to reason through hypothesis and deductions, giving birth to the testing steps in order to reach the truthful hypotheses and deductions.

Figure 3: Piaget's model of learning and cognitive development



Source: Kolb D. 1984, op. cit.

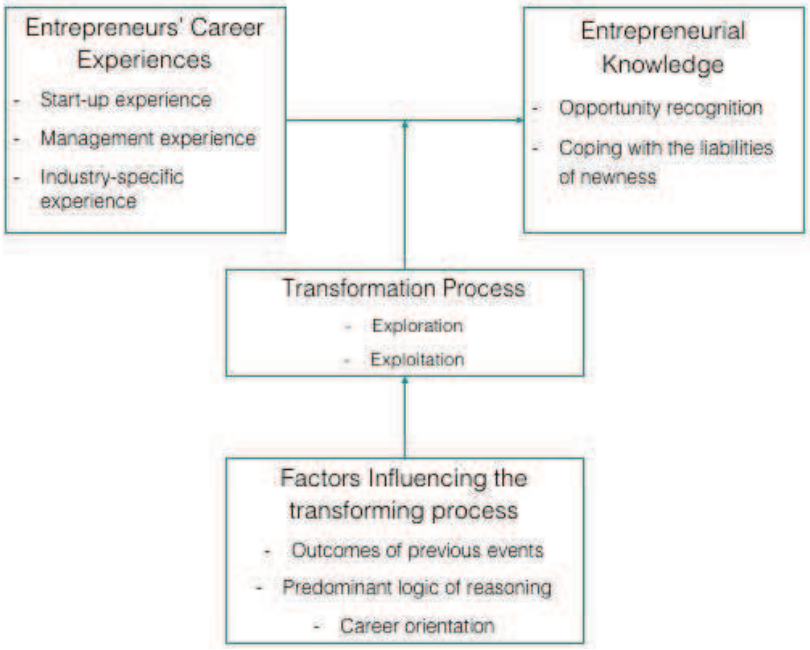
1.6 **Entrepreneurial learning**

When it comes to the application of experiential learning in the entrepreneurship field, learning is described as a process at the bases of which, experience and knowledge represent two essential concepts.

Reuber et al (1990) sustain that experience is a direct observation, or a participation in an event associated to the creation of a new venture, while knowledge is the practical wisdom deriving from those events. When it comes to the entrepreneurial field, the learning process consist of transforming experience into knowledge.

Politis (2005) proposes a conceptual framework in which antecedents and outcomes compose the process.

Figure 4: A conceptual framework of entrepreneurial learning as an experiential process



Source: Politis D. (2005), op. cit.

In order to explore the entrepreneurial learning process and deep-dive in the transformation of experience in knowledge, the framework considers three main components: *entrepreneurial knowledge* (outcome of the process*), entrepreneurs' career experiences* and the *transformation process*, affected by *other factors*.

Entrepreneurial Knowledge. It is the outcome of the entrepreneurial learning process that implies two distinct abilities: *opportunity recognition* and *coping with the liabilities of newness*. The former, is considered a key issue to investigate the entrepreneurship literature. It is explored under different perspectives, and it is very much related to the previous experience of an entrepreneur.

The more the prior experience, the more effective the entrepreneurial opportunity recognition. (Ucbasaran, Westhead, & Wright, 2003). Busenitz and Barney (1997) sustain that cognitive properties of an individual, as the ability to combine existing concepts and information into new ideas, plays a central role in the process of entrepreneurial learning. Cohen and Levinthal (1990) argue that the level of prior experience is a key factor for the ability to evaluate and utilize outside knowledge and exploit new market opportunities.

The amount of prior experience seems to be highly associated with an entrepreneur's effectiveness in recognizing and acting on entrepreneurial opportunities. Another outcome of the learning process is the ability to *cope*

with liabilities of newness, issue connected to the mortality rate of very new firms. This incapacity has to be compensated by finding financial start-up capital, adaptation to changes, legitimacy building, access to social and business networks.

Entrepreneurs' career experiences. Three are the careers types contemplated by Politis' framework, that aim to an entrepreneurial knowledge development: *start-up experience*, *management experience*, and *industry-specific experience*. The learning-by-doing concept is key to understand that a practical experience increases the chances to better manage a company. On the one hand, Johannisson et al. (1998) claim that "prior *start-up experience* provides tacit knowledge that facilitates decision-making about entrepreneurial opportunities under uncertainty and time pressure" improving the economic performance of new ventures (Gimeno et al, 1997). On the other hand, *management experience*, increases individuals' intention to start a new venture and opportunity recognition ability (Delmar & Davidsson, 2000). Eventually, with reference to the *industry-specific experience*, Aldrich (1999) claims that founders tend to start businesses in industries in which they were previously employed, benefiting of the information related to the industry they previously worked in.

Thus, Politis (2005) sustains that in the case of the entrepreneur, the more the career experience, the more the entrepreneurial knowledge development and the

more the ability to recognize opportunity and cope with the liabilities of newness.

Transformation Process. *exploration and exploitation* of the entrepreneurial opportunity are considered two ways through which experience can be transformed into knowledge. The former refers to new choices or actions. The latter, is related to choices or action that entrepreneurs have already taken, thus, belonging to their preexisting knowledge.

March (1991) argues that entrepreneurial learning is sustained by both of them, and even if knowledge development can be reached through a predominant mode of transformation (Politis, 2005), none of them is better than the other in transforming experience into knowledge. Thus, the more entrepreneurs rely on exploration, the more effectiveness in their opportunity recognition ability; on the other hand, the more overall reliance on exploitation, the more effective is the entrepreneur in coping with the liabilities of newness.

Politis (2005) also sustains that there are ***factors influencing the transformation process:*** 1. the *outcome of previous entrepreneurial events* (ie. success or failure of previous ventures); 2. the *predominant logic or reasoning of an entrepreneur* (ie. causation or effectuation); 3. the *career orientation of an entrepreneur* (ie. the motivation put into future choices), all factors, that represent other perspectives under which entrepreneurship can be explored approaching to the innovation process.

1.7 **Success and innovation adoption**

Learning, both with networking and innovation adoption, can have an impact on the entrepreneurial success. This is the test lead by Setyawati et al. (2001) through a research model applied in Central Java, Indonesia, where Small & Medium Enterprises (SMEs) were able to recover from an economic crisis, thanks to their flexibility and the adoption of value-added production techniques. Number of employees, unique organizational cultures and market leading position are some of the factors that characterize the ability of an entrepreneur in managing and sustaining the success of a firm. Furthermore, entrepreneurial success is determined by the ability of an entrepreneur to develop an innovation process throughout learning. Networking is another important factor that is beneficial to the success of an enterprise: building relationship and managing them among different contexts, allow to optimize synergies among institutional or non-institutional environments.

On top of learning and networking, innovation is the process that strongly impact on the entrepreneurial success. “Innovation means that the entrepreneur should have the ability to create new technique or strategy including innovative products in facing changing situations, particularly dealing with consumer

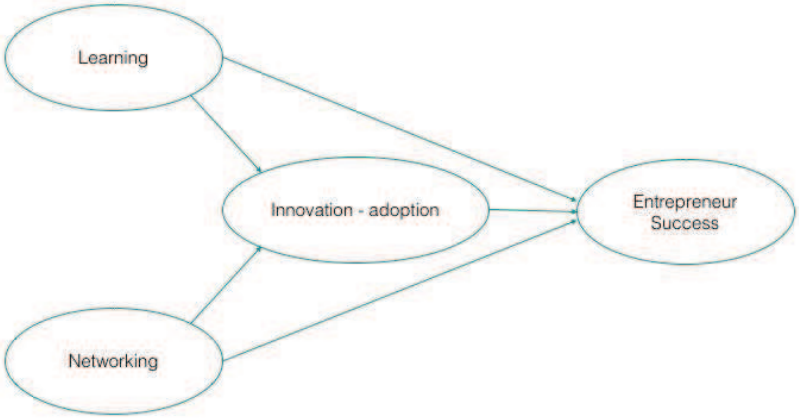
behavior[3]". In particular, innovation happens when there is an economic growth as a result of a knowledge technology progress.

Kirton (1989) sustains that the adoption of innovation thinking depends on several features: the ability of people in problem solving, in being creative and in making decisions. When it comes to facing problems, there are two types of people: the *adaptors* who increase the previous way of doing innovation, and the *innovators*, who find a completely different way, compared with the previous one, of doing innovation. These two ways of behaving in front of problem solving, depict the profiles of people that aims to reach success, respectively in two different ways, both with a different amount of creativity.

Setyawaty et al. (2011) proposes a model *(Figure 6)* in which learning and networking impact on the entrepreneurial success in an innovation adoption process. Research results demonstrated that learning has a positive and significant effect on innovation adoption, thus on the success of an entrepreneur. Moreover, it is shown that networking has a positive and significant impact on the innovation adoption. Building relations and acquiring new knowledge, allow entrepreneurs to access to new opportunities of innovation adoption through which defend their firms from competition.

[3] Setyawati S.M, et .al. (2011).

Figure 6: Research model



Source: Setyawati S.M, et al. (2011), op.cit.

Thus, these results, confirmed that networking, both with learning, affect the development of enterprises. Furthermore, innovation adoption theory adopted by Kirton (1989) is confirmed in the behavioral literature.

1.8 **Causal vs effectual thinking**

Considering uncertainty, as a critical factor that belongs to the environment in which new enterprises grow, strategy and innovation represent even more the needs to be satisfied in the process of creation and implementation of a new venture.

Within the entrepreneurship literature, there is a distinction of two entrepreneurial predominant logics: causal and effectual (Sarasvathy, 2001). The former, is expression of a way of reasoning based on several forms of forecast. In particular, this logic is characterized by the use of traditional techniques of analysis and estimation in order to approach to the target market.

The latter, is a logic based on the minimization of estimations and on the maximization of execution. Hence, an effectual reasoning relies on the identification of target market through synthesis and imagination.

Sarasvathy (2001, p. 245) describes the difference between these entrepreneurial logics through an analogy: *causation* is when an artist asked to paint a specific item, while *effectuation* is when an artist asked to paint anything she or he wants using the colors available. In both cases, the result is the same, only the path changes. In a formal way, she defines the two terms as follow: "Causation processes take a particular effect as given and focus on selecting between means to create that effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means."[4]

With reference to the effectual logic, another example can be done. Baker and Nelson (2005) use the concept of bricolage, considering that most efforts in building a new venture, happen on the basis of resource scarcity or on what is available, very close to the effectual way of thinking. This logic is considered when the entrepreneur has to deal with a very uncertain and unpredictable

[4] Sarasvathy, S. D. (2001), Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency. *The Academy of Management Review*, 26(2), 243–263.

competitive environment. In fact, it is demonstrated by Chandler et al. (2011) that uncertainty is positively correlated with this predominant entrepreneurial logic and negatively correlated with causation one. Dimensions belonging to effectuation are meant to be affordable loss and flexibility (Coviello and Joseph, 2012).

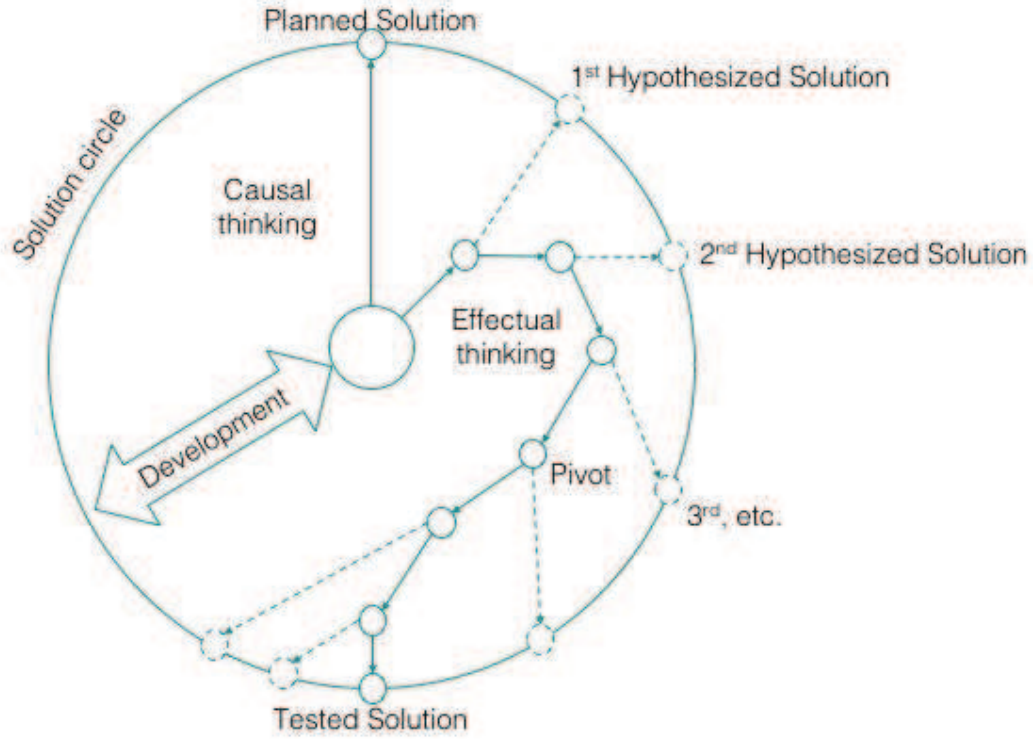
Thus, in relation with the thought of Sarasvathy (2001), entrepreneurship cannot be described by causal models. This is one of the concepts that underlie the inspiration of Eric Ries[5] in writing a book that in only one year, sold 90.000 copies. In this book, Ries, promotes a methodology (*the lean methodology*) that describes, in his opinion, how to launch a startup company with the least amount of effort. A few scholars claim that in the book there is nothing new, nothing that did not already existed in the managerial and entrepreneurial literature. As an example, Fisher (2012, p. 1046) shows that experimentation and the early and often interaction with customers lead to a facilitation of starting a new venture, an important concept on which Eric Ries based a part of his proposed startup lean methodology success.

Nevertheless, going through the effective example of the different

[5] Ries, E. (2011). The Lean Startup. New York: Crown Business.

entrepreneurial thinking, here below (*Figure 7*) a causal vs effectual approach to entrepreneurship mapped over a 'solution circle'.

Figure 7: causal vs effectual approach to entrepreneurship mapped over a 'solution circle'



Source: Frederiksen, D. L., & Brem, A. (2017). How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. International Entrepreneurship and Management Journal, 13(1), 169-189.

In the figure, the entrepreneurial ways of thinking are applied to a theoretical problem-solving case. It is sustained by Ries, that failing inexpensively is key in order to reach a sustainable business or solution. Also, it helps to reiterate the failing action in order to learn the best match between customers and products or services. He sustains that causal entrepreneurial logic considers the execution of a plan without getting other input until the arrival at the solution. On the other

hand, the effectual entrepreneurial logic, is totally based on the many input coming from the market (ie. customers feedback), that allow to adjust the solution, increasing the chances to match the real customer need.

In a certain sense, it seems that effectual entrepreneurship relies on the exploration of new business opportunities looking at contingent input, in order to create markets that already not exists. A parallelism, can be made with the approach that researchers have in exploring the literature in order to find a matter not yet treated.

1.9 **Creativity**

In the process of reaching a solution to a market opportunity, innovation adoption recalls a certain creativity. Technology brings companies to innovate in their business models in order to face the even more fast-changing competition. Thus, creativity represents a source for the innovation process, that can enable enterprises to reach a stronger competitive advantage. Once the entrepreneur is able to recognize the entrepreneurial opportunity, creativity matters in putting solid bases for the competition.

A study by Tu and Yang (2013) contribute to the new entrepreneurship literature throughout the definition of entrepreneurial creativity concept and the relationships between individuals among different growth stage of the venture. Pretorius et al. (2005) believe that creativity is only one of the many

entrepreneurial skills required to pursue a startup success, while Ko and Butler (2007) sustain that creativity plays an important role at the moment of taking strategic decision within the entire business creation process.

Entrepreneurial creativity is at the base of the innovation process, which according with Zampetakis & Moustakis (2006) is composed of two main phases:

- *initiation stage* – initiation of an idea or proposal in start process (Pierce and Delbecq, 1977) aware of the innovation, forms an attitude towards it; identify knowledge that meets those needs, that evaluates the new product and feasibility (Frambach and Schillewaert, 2002), where often the R&D department of a firm is focused on;
- *implementation stage* – can see adoption idea or proposal follow-up (Pierce and Delbecq, 1977) period of experimentation through which innovative ideas are incrementally translated into good practices (Zeldin et al., 2005).

Thus, among these two startup innovation stages, there are 3 factors that affect entrepreneurial creativity: *positive effect*, *expertise* and *social network*.

Shalley and Gilson (2004) sustain that creativity has to be considered in relation with different personal and contextual characteristics. In fact, it changes depending in the various growth phases of a new venture. Hence, the need of

creativity is subordinated to the need of personal skills, priorities and structural configurations of an organization.

In the end, creativity is considered as a starting point for innovation, i.e., the initiation and the successful implementation of creative ideas. Amabile (1996) points out that, “given the many obstacles that lie in the entrepreneurial pathway, considerable creativity is required”.

1.10 **Firm positional advantage**

Within the innovation process, a new venture needs a position on the market. It means that all the entrepreneurial skills contribute to its formation, developing a learning structure effective enough to generate the birth of a strategy.

Strategic innovation in the current study is meant as the result of the entrepreneurial learning process, the result of the entrepreneurial experience and previous knowledge that enable a structure of a disruptive business model.

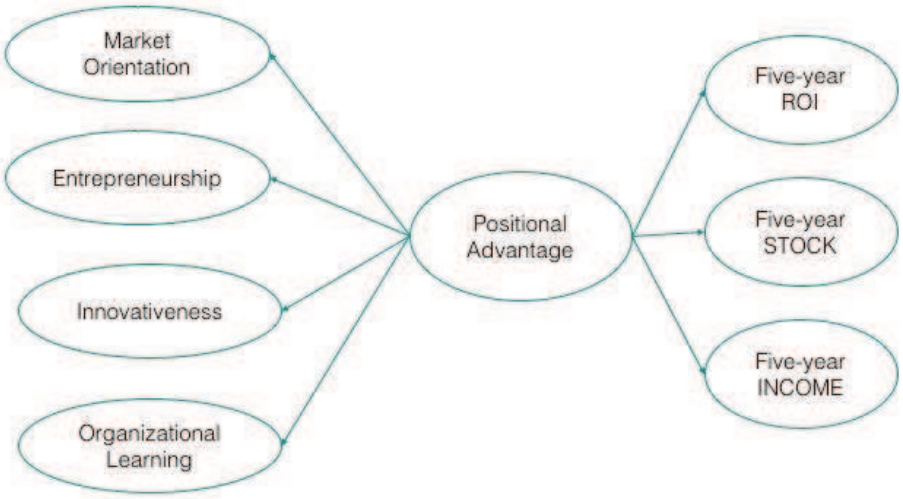
In order to disrupt the market with new venture ideas implementation, new entrepreneurship needs to look at the satisfaction of personal, organizational and societal needs. Identifying a specific market problem and a specific industry, odds are that learning on the assumption made that are tested on the market, will initialize a feedback loop that gives an improving solution.

A disruptive technological change study (Christensen and Bower, 1996), suggests that "the power of dominant customers contributes to the failure of leading firms". In the same study, Slater and Narver (1998) describe a distinction between customer orientation and market orientation. In the first case, firms emphasize customers' needs, while in the second case, firms aim to satisfy customers' latent ones.

Thus, market orientation, with customer's needs satisfaction approach, clearly affects organizational performance. Even if the impact of the former on the latter is not linear, different intangible constructs have their impact on the new venture performance, thus on the positional advantage (Day, 1994).

Hult and Ketchen (2001), assert that market orientation, entrepreneurship, innovativeness, and organizational learning, have a positive effect on the long-term implementation stage of the firm. They impact on the two Strategic Business Units (SBU) level performance indicators and one firm-level performance indicator.

Figure 8: *A higher-order model of positional advantage and long-term performance*



Source: Hult G.T.M., Ketchen D.J., (2001), op.cit.

The results of this study showed that it is essential to incorporate market orientation into strategic management research to fully understand and predict important long-term outcomes (Christensen 1997).

1.11 **Business model design**

"The study of business models is an interdisciplinary topic which has been neglected, despite its obvious importance, it lacks an intellectual home in the social sciences or business studies"[6]. In order to exploit the entrepreneurial opportunity and to conquer an advantageous position on the market, the new

[6] Teece, D. J. (2010), "Business models, business strategy and innovation", *Long range planning*, 43(2), 172-194.

entrepreneur needs to design a proper business model coherent with a sustainability strategy for the new venture development.

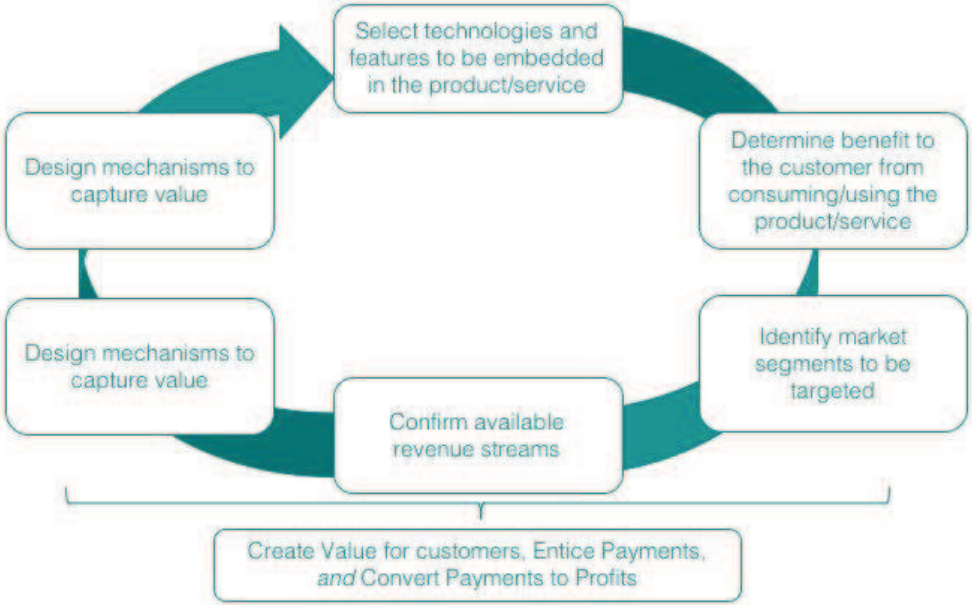
Global economy and technology leads enterprises to be even more customer-centric in order to optimize their solution for a specific market niche. It means that, a continuous elaboration of the value proposition needs to be done, getting a bit farther from the previous industrial logic.

In fact, emerging knowledge economy, the digitalization and the growth of the Internet, e-commerce, and shared forms of creating value in the society, impact on the way companies make money, which is different from the previous way of doing it. Computers and intelligent mechanization of the processes, offer a wide range of choices in low cost and high opportunity cost strategy for the firms.

Throughout the internet, customers receive easy access to data and information, increasing their contractual power and making access to innovation even more challenging for the companies. Thus, competition is not made on product or process innovation any more, but on different architectures of business models that lie on digital and technological infrastructures and make difficult for new entrants to get a position in a specific market.

Thus, in order to contribute to the formation of sustainable and competitive advantage on the market, business model innovation represent the right pathway to follow. Here below the element of a business model design:

Figure 9: Elements of business model design



Source: Teece, D. J. (2010), op cit.

Technological innovation is a relevant factor in the process of business model innovation design. Within the competitive market there is a wide range of business models that can be adapted both, to the customer need and to the competitive context the firm is in. In both the cases, the process needs to be adjustable and iterative.

In accordance with Teece (2010), within the history there are different examples of business model innovations:

- Gustavus Swift for example "sensed that if the cattle could be

slaughtered and shipped already dressed to distant markets in refrigerated freight cars, great economies in 'production'/centralization and transportation could be achieved, along with an improvement in the quality of the final product". The innovation was the introduction refrigerated warehouses to store the beef near point of sale, which were not part of the existing distribution system;

- Considering the revenue model, as just one of a business model component, the 'razor-razor blade model' is another example, in which Gillette skyrocketed in revenues, low-pricing razors and marking-up the blades of its product. Using the same model, Rolls Royce, GE, Pratt & Whitney made their money too, selling engines quite inexpensively, increasing the price of maintenance and additional parts of their cars;
- Sponsorship is another case of a business model component on which, especially in the sport industry, many companies make money, earning royalties from the replica of their products. In this case, "relationships with clubs, teams, and with team managers and club owners become important in the mix";

In relation with the trends over time, with the internet and the democratization of data and information, Teece (2010) considered also business model innovation changes, raising several issues for information providers that find more challenging the way of pricing their service. This is the case of newspapers companies that use to sell news at an almost inexpensive price, letting the

publisher earn throughout advertising, being able to cover the costs through the advertising revenues. Recently, this specific industry has been disrupted by brands like Ebay and Craigslists, that attracted on their online platforms all the ads, pushing out of business many newspapers companies.

Also in the DVD rental industry, the internet has had a significant impact. This is the case of Netflix (http://www.netflix.com) that allows customer to see a wide range of movies and TV series paying a competitive monthly subscription fee. Apple's iTunes music store is an example of a business model innovation, and was the first legal pay-as-you-go method for downloading music (Teece D.J., 2010).

Another example of a business model internet-based is Flickr (www.flickr.com), which has been described by Shuen (2008) as "a poster child for Web 2.0 [offering] users a way to share photos easily". The model is the "freemium" (free and premium), "characterized by Fred Wilson as:

Give your service away for free, possibly ad supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, etc., then offer premium priced value-added services or an enhanced version of your service to your customer base."[7]

[7] *Teece, D. J. (2010), op cit.*

Adobe (for its PDF reader), Skype and MySpace, also applied the freemium business model, while Outshouts Inc. (www.outshouts.com) has adopted Flickr's multiple revenue streams model – very common among internet startups - to on-line Web videos, allowing users to personalize and disseminate videos for business or consumer purposes. Eventually this model is used by a large number of software companies who operate in the open source marketplace (ie. Firefox, Linux, Apache, etc.).

Thus, it is clear that technology and the change in the digital trends can have a significant impact on the different components of a business model, such as cost structure, revenue model, value propositions.

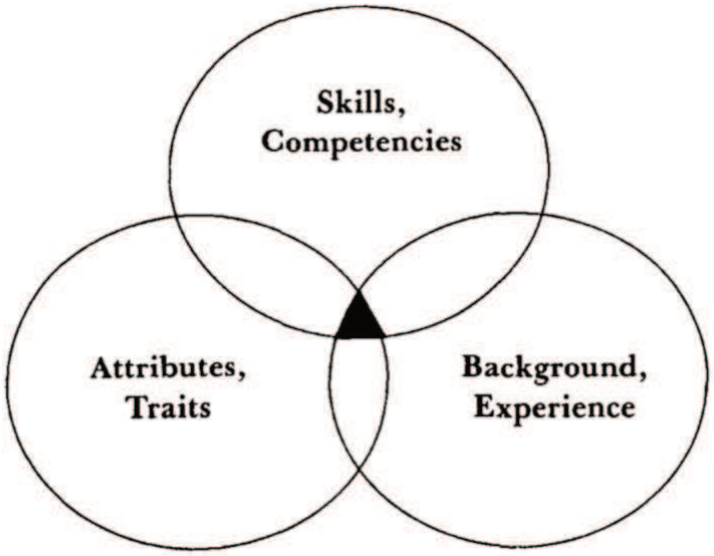
THE NEW ENTREPRENEUR

2.1 Understanding entrepreneurs

During the exploration of some of new entrepreneurship formation theories, it is important to focus on the individual, in order to adopt another perspective to analyze why he or she wants to become an entrepreneur. On the one hand, part of scholars in the literature sustain that this matter is connected to personality, others, instead, focus on the entrepreneurship education and believe that an individual can become an entrepreneur also throughout programs that provide skills development.

Dennis M. Ray (1993) sustains that at the base of entrepreneurial individual formation depends on three factors (*Figure 11*): entrepreneurial *attributes*, entrepreneurial *experience* and entrepreneurial *skills* that involve how they learn too. The interrelation between those factors represents the potential for an individual to become a successful entrepreneur.

Figure 11: Keys to understanding the entrepreneur



Source: Ray D.M. (1993), op.cit.

Nobody thinks that a software industry entrepreneur could act like a shop-owner. that's why it is worth to make a distinction between innovative or new entrepreneur and small business founders.

Each of them possesses different attributes which let him or her decide to launch a new venture. And those attributes are probably the same of those that make a new venture successful. As an example, there are different traits that characterize a new entrepreneur, and as Ray (1993) says, there are many studies that focus on personality traits without paying attention to exterior traits, such as physical appearance. High percentage of successful entrepreneurs' picture themselves as likable individuals in their profiles, and this could impact on their ability to expand their network, as well as selling a product to customers.

Another trait considered through a metaphor is the activation need that leads to their growth orientation. Metaphorically, on the one hand, new entrepreneur looks like a traveler of the business world, on the other hand a business owner represents the organized tour of business.

2.2 **Entrepreneur vs manager**

Attributes, experience and skills[8] are important to make a comparison between people who undertake the entrepreneurial path and those ones who, even though successful, spouse a managerial profile.

Busenitz & Barney (1997) sustain that "casual observation suggests that individuals who start their own organizations are somehow different from those that work in large organizations". In their study, different are the features that characterize the entrepreneurs and managerial profiles: "entrepreneurs have been described as risk-takers and rugged individualists (McGrath et al., 1992), as engaging in deviate social behavior (Shapero, 1975), and as being a "breed apart" (Ginsberg and Buchholtz, 1989).

In contrast, managers have been described as being risk averse (Amihud and Lev, 1981), adhering to broadly accepted norms of behavior (Pettigrew, 1973),

[8] Ray, D. M. (1993), "Understanding the entrepreneur: entrepreneurial attributes, experience and skills", *Entrepreneurship & Regional Development*, *5*(4), 345-358.

and more professional and predictable in their decision-making (Hofer and Schendel 1978).

Thus, Busenitz & Barney (1997) explore the comparison focusing on the decision-making process of both. Decision-making is a skill that characterize the entrepreneur, as well as the manager and it involves psychological variables like locus of control and risk-taking attitude. But mainly, it is important to highlight that uncertain environmental market conditions, often induce the new entrepreneur, as well as the manager, to non-rational decision-making. Much more in the entrepreneurial attitude, action precedes thinking (Gartner et al. 1992).

Decision-making varies among the two behaviors due to different factors. On the one hand, managers have got more information related to the previous trends of an organization, that can help him to make a less risky decisions (ie. launching a product/service compatible with the market trend). On the other hand, entrepreneurs have a more costly and full of effort situation in which the venture still need to be made.

"Thus, those who are more susceptible to the use of biases and heuristics in decision-making are the very ones who are most likely to become entrepreneurs. The more cautious decision-makers will tend to be attracted to larger organizations where more methodical information tends to be more readily

available. Entrepreneurial activities simply become too overwhelming to those who are less willing to generalize through the use of bias and heuristics"[9].

Also, with reference to the complexity of the decision, Gartner et al. (1992), makes a comparison of decision-making. In larger organizations, routines and already established procedures, help out managers in decision-making. Whilst in new ventures, entrepreneurs, who have a least amount of information at their disposal, have to promote their venture among different stakeholder with more effort.

2.3 **Entrepreneurial mindset**

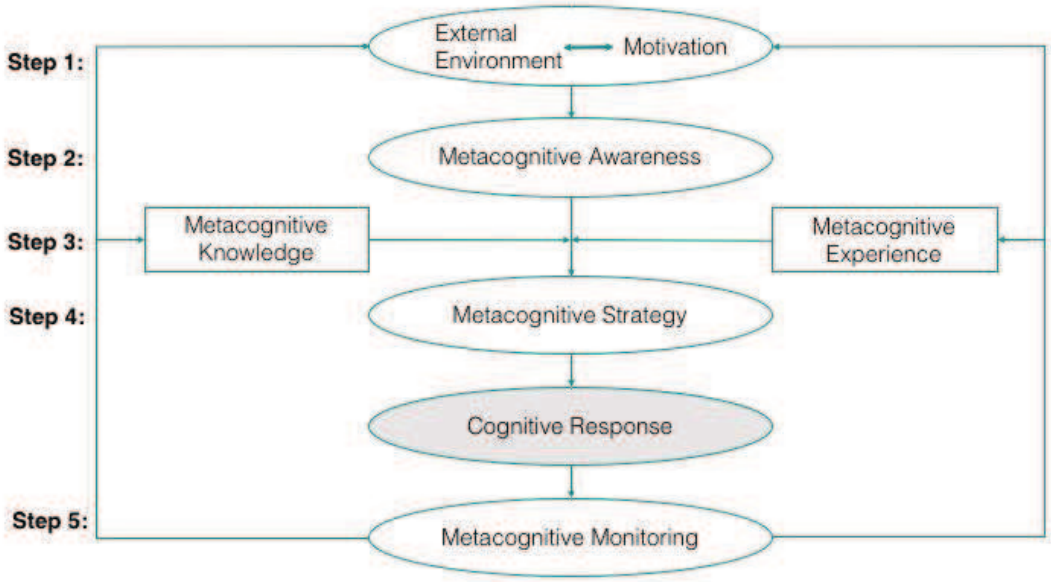
As Irland et al. (2003) say "the successful future strategists will exploit an entrepreneurial mindset…the ability to sense, act, and mobilize, even under uncertain conditions". Fiske and Taylor (1991) define an entrepreneur as a tactician "representative of a fully engaged thinker who has multiple cognitive strategies available, and chooses among them based on goals, motives and needs". The new entrepreneur mindset recalls dynamic features of thinking in pictures, employing analogies and synthetizing information in order to simplify the complexity of the business environment. Richard Branson of Virgin-

[9] Busenitz, L. W., & Barney, J. B. (1997), "Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making", *Journal of business venturing*, 12(1), 9-30.

Atlantic, as well as, john Chamber of Cisco Corporation are the innovative minds who provide the above descriptions of being cognitive strategists.

In order to understand how an entrepreneurial mindset work, Haynie et al. (2010) propose a model that depict entrepreneurial metacognitive functioning in five causal steps. *Step 1* involve the external and motivational effects that impact on the entrepreneur; *step 2* activates the metacognitive awareness, *step 3* the embrace metacognitive knowledge and experience, classified as main resources of the individual mindset in general; then a strategy formulation (*step 4*) and the *step 5* which consists in the monitoring and performance feedback mechanisms.

Figure 12: *A situated metacognitive model of the entrepreneurial mindset.*



Source: Haynie et al. (2010), "A situated metacognitive model of the entrepreneurial mindset", Journal of business venturing, 25(2), 217-229.

This model aims to clarify the relationship between the entrepreneurial cognition and the performance in environment of new venture creation

development. In fact, Batha and Carroll (2007), highlight that the enhanced metacognitive abilities are positively correlated with improved performance on decision task in novel and uncertain environments.

The utility of this model, also leads to various adaptations that an entrepreneur can have during the entrepreneurial metacognition process (involving the 5 steps), can influence the self-monitoring metacognitive strategies on learning[10] and help to explore the relationship between social interactions, beliefs, and accessibility of cognitive resources[11].

2.4 **Overconfidence**

In relation to the comparison between managers and entrepreneurs, overconfidence is considered another characteristic that affects entrepreneurial and managerial attitude.

"Overconfidence exists when decision-makers are overly optimistic in their initial assessment of a situation, and then are slow to incorporate additional information about a situation into their assessment because of their initial

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[10] Aleven V., Koedinger K. (2002), "An effective metacognitive strategy: learning by doing and explaining with a computer-based cognitive tutor", *Cognitive Science*, 26 (2), 147–179.

[11] Schoenfeld A., (1983), "Beyond the purely cognitive: belief systems, social cognitions, and metacognitions as driving forces in intellectual performance", *Cognitive Science*, 7 (4), 329–363.

overconfidence (Alpert and Raiffa 1982)". Most of the times, new entrepreneurs are focused on themselves, without considering the uncertainty of the external environment, this could be a form of overconfidence too.

Thus, it is deducible that entrepreneurs and managers, when it comes to large organizations, are different from each other. This is the result of Busenitz & Barney's study (1997). It is shown that they think differently.

Although managers and entrepreneurs have a similar risk propensity, entrepreneurs are much more involved in the taking risk with ventures that fail, than with that ones that succeed.

"The issue may not be one of risk propensity or the sensitivity to probability estimates of possible outcomes, but rather how entrepreneurs think about the decisions they make surrounding the business opportunities they undertake (Ray 1994)".

Thus, it is important to understand that decision making often depends on the way an individual think about risk.

Furthermore, although heuristic decisions may improve venture building performance, in useful, valuable and effective way, they also can lead to systematic errors. Thus, decision making skills biased by heuristic attitude can represent both a sustained competitive advantage and a sustained competitive disadvantage (Barney 1991).

2.5 **Motivation**

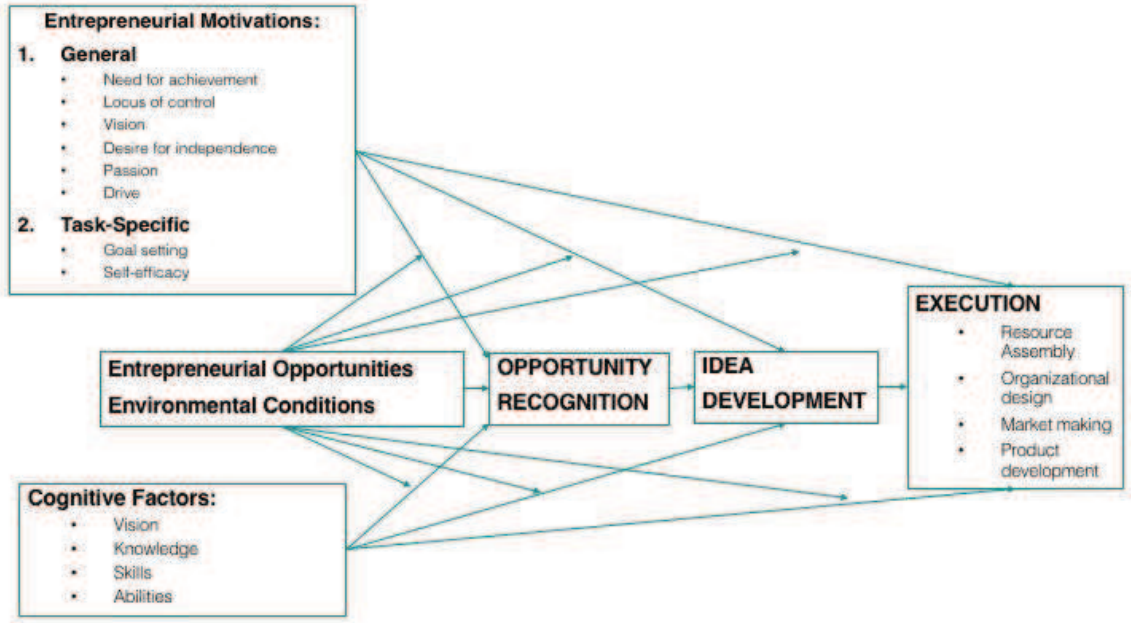
Shane et al. (2003) consider motivation as a transitional factor that leads the entrepreneur from one stage to another in the new venture development process, from opportunity recognition to execution. Different concepts embraced by entrepreneurial motivation are clearly the same considered in the psychological literature of human behavior: *need for achievement, locus of control, desire for independence, passion and drive*. These motivations impact at different levels on the diverse evolution stages of an idea development, starting from the *opportunity recognition*, passing by the *feasibility study* until the more concrete phase of *product or service development* in order to *deliver value to customers*.

Both with cognitive factors, that include knowledge, skills, and abilities, each motivation influence action as "the result of the combination or integration of motivation and cognition" (Locke, 2000a).

Thus, with reference to the knowledge that entrepreneur need to possess, it is essential that it refers to the industry and the new technology that is critical for the success of the venture. Also, important factor to consider is the "better-than-me" people to hire. Entrepreneur must have *bargaining, leadership, planning, decision-making, problem solving, team building, communication and conflict management skills*. And eventually conjugate all this with a proper vision, that leads execution among the entire organization.

In order to have a clear picture of the entrepreneurial process that involves, cognitive and motivational factors, concept already treated in the previous chapters, it is worth to share a model made by Shane et al. (2003), in order to approach to executional concepts of being an entrepreneur.

Figure 13: *Model of entrepreneurial motivation and the entrepreneurship*



Source: Shane S., Locke E. A., & Collins C. J. (2003), "Entrepreneurial motivation", Human resource management review, 13(2), 257-279.

2.6 **Personality**

Understanding entrepreneurs means also deal with their personality traits. They typically include moderate risk taking, internal locus of control, need for achievement and information seeking[12].

It is important to mention that every single attribute is to be considered in different situations and contexts. Clearly, the specific importance of any single attribute depends on the cultural and situational environment an entrepreneur is in. This concept can be shown metaphorically by Gleick (1987) who asserts that "sensitive dependence on initial conditions serves not to destroy but to create. As a growing snowflake falls to earth, typically floating in the wind for an hour or more, the choices made by the branching tips at any instance depend sensitively on such things as the temperature, the humidity, and the presence of impurities in the atmosphere. The six tips of a single snowflake, spreading within a millimeter space, feel the same temperatures, and because the laws of growth are purely deterministic, they maintain a near perfect symmetry. But the nature of turbulent air is such that any pair of snowflakes will experience very different paths. The final flake records the history of all the changing weather conditions it has experienced, and all combinations may as well be infinite".

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[12] *Ray D.M. (1993), op.cit.*

Thus, Ray (1993) claims that given personality traits are dependent on external and contextual factors, entrepreneurial personality is not enough to justify the relation between entrepreneurial success and new venture development process. Nevertheless, investors give substantial sum of money only after long period in which they know the entrepreneurs, in order to minimize the losing risk of their investments. Bruno and Tyebjee (1986, p.44) sustain that "the process of identifying winners and losers is extremely complex […] Research from North America suggests that venture capitals typically select two to three losers for every big winner and 70% of the firms they decline to invest in survive implying at least nominal success".

Thus, even if on the one hand personality is a critical factor that represents an advantage for new entrepreneurs in their new venture building, on the other hand skills formation represent another critical factor, that unfortunately needs to be optimized among entrepreneurial training programs.

2.7 **Network**

Entrepreneurs must establish connections to resources and niches in an opportunity structure and at some point, they must have been affected by relations with socializing agents who motivated them[13]. Zimmer (1986) sustains that research on entrepreneurship must address a twofold objective: a dynamic view of the network and a linkages and relations between key component of the process (entrepreneurs, creditors, suppliers, investors, customers, etc.).

A social network can be organized in *role-sets* and *action-sets*. The former is defined by Merton (1957) as "that complement of role relationships which persons have by virtue of occupying a particular social status" which means the focal person many people have direct relations to. The latter, represent a group of people who formed a temporal alliance for a specific purpose.

Moreover, Zimmer (1986) highlights three important factors to be considered in a social analysis: *density*, *reachability* and *centrality*. Within a social network, *density*, that is measured comparing the total number of ties present to the potential number that would occur if everyone in the network were connected to everyone else, refers to the extensiveness of ties between persons.

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[13] Zimmer C., (1986), Entrepreneurship through social networks. *The art and science of entrepreneurship. Ballinger, Cambridge, MA*, 3-23.

Reachability, involves distance path between peers, in terms of how many intermediaries exists between one person to another. In relation to c*entrality*, the more persons that can be reached and the shorter the aggregate distance to these persons, the higher the centrality of a focal person.

With reference to the field of entrepreneurship, social network can be explored under different perspectives. Immigration is one of those, where the power of community for an individual is fundamental as a business support. Starting from closer friends, to people of same culture and nationality, high density ethnic groups can represent a strength for entrepreneurial opportunities exploitations. Clear examples that follows this model are Koreans in Los Angeles's liquor stores and Indians in California's motel business.

Another aspect to consider is the broker role of an entrepreneur, who needs to handle a complex set of relations. Granovetter (1973) claims the importance of close friends' network compared with acquaintances' network. The difference lies in the higher density degree that the latter has on the former.

Digitalization had a meaningful impact on relationship managements. Digital social network like Facebook, twitter, LinkedIn, Airbnb are the kinds of social network that disrupt the way to conquer a competitive advantage in the market.

2.8 **Skills**

With reference to the new venture development process, Ray (1993) proposes several skills related to different aspect of an innovative entrepreneur.

An innovative entrepreneur need to be able to *identify new product services* and opportunities in order to understand what his or her business have and what is missing. As described in the first chapter too, the process of an opportunity identification depends on both creativity and innovativeness degree. Another ability the new entrepreneur should have is the *critical thinking*, which help out to dig in a potential fake opportunity and uncover its potential. *Persuasive communication skills* embrace oral, written, face-to-face and telephone ability to interact with potential customers, investors, friends and other stakeholders. *Negotiation skills* are a consequence of the previous ones. *Interpersonal skills* also involve another successful factor needed by an innovative entrepreneur, in order to accomplish the entrepreneurial activity, which by definition, is people-intensive. Also, a listening and information acquiring are skills that attain to the *discovery* attitude of an entrepreneur to identify new needs and problems to satisfy and solve.

There is formula that guarantees the success of a new venture, neither an ideal type of personality. Thus, in order to increase the chance of success, it is important to apply interaction of scientific methodology, which imply a fast and often failure, essential component of the science of entrepreneurship.

NEW ENTREPRENEURSHIP DEVELOPMENT SPACES

3.1 Sharing economy

It is important to understand that business ecosystems are characterized by knowledge and resources sharing under fee or for free, peculiarity that gives birth to the modern form of sharing economy, premise on which many spaces in which new entrepreneurship development happens.

In Bouncken & Reuschl (2016), Lamberton and Rose (2012) estimated that sharing economy is worth 100bn USD 2010 and serves a wide variety of industries, such as food, accommodation, entertainment media and mobility. As an example, sharing economy can have several advantages, such as car reduction in urban mobility (*ie. Uber*). In the accommodation industry, another example is Airbnb, that enable everyone who has an owned property to rent it as an alternative solution to hospitality business, such as hotels.

These economic evolution step turned into real business models – significantly supported by technology and digital frameworks – headed to facilitate collaborative co-creation of product and services in which customers become an essential part the value creation (Oskam and Boswijk, 2016).

Crowdsourcing is an example for a participative completion of a task that is not limited to an exclusively virtual environment. For instance, Meetup (http://meetup.com) enables internet groups – the crowd – to organize meetings in the real world[14]. Bilandzic and Foth (2013) highlight that Meetup enables motivated, often highly creative and skilled individuals, groups and crowds to meet and collaborate on specific tasks. These groups need a suitable place with appropriate infrastructure and equipment to support the completion of tasks.

Public libraries as well as co-working spaces can host such groups. So far it is unclear how such spaces should be set up.

3.2 **Business ecosystems**

Entrepreneurship and strategic thinking are at the base of the formation of business ecosystems. The different ways they interact affect the way firms compete on the market. Hence, they contribute to diverse hubs of knowledge related to competitive moves and value creation for customers and for the surrounding environment stakeholders.

[14] Bouncken R. B. & Reuschl A. J., (2016), "Coworking-spaces: how a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship", *Review of Managerial Science*, 1-18.

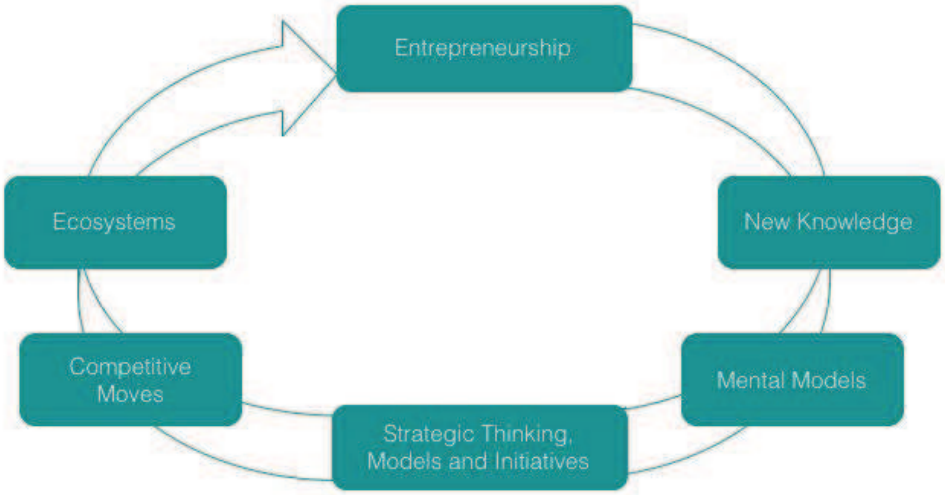
"A business ecosystem is a group of companies – and other entities including individuals, too, perhaps – that interacts and shares a set of dependencies as it produces the goods, technologies, and services customers need[15]"

Zahra (2007) sustains that typical ecosystems host independent new ventures and corporate sponsored ones that, even if they have several things in common, they have different goals using vary resources and applying diverse skills. The independent ventures, often have advantages over the corporate sponsored ventures in terms of learning, sharing knowledge, and rapidly revision of their strategic moves. Well established companies, instead, usually exploit opportunities within the ecosystem, experiencing technological change coupled with high growth (Keil, McGrath & Tukiainen, 2009).

Thus, in order to understand how entrepreneurship lead to ecosystems formation in relation with the mental models (Isenberg, 2010) and strategic thinking, here below a circle that shows the link between the two components of entrepreneurship and strategic thinking.

[15] Zahra S. A. & Nambisan S, (2012), "Entrepreneurship and strategic thinking in business ecosystems", *Business Horizons*, 55(3), 219-229

Figure 9: The dynamic link between entrepreneurship and strategic thinking in business ecosystems



Source: Zahra S. A. & Nambisan, S. (2012). Op.cit.

To explore the nature of innovation ecosystem formation, Nambisan & Sawhney (2007) focus their study on four different models: *Orchestra*, *Creative Bazaar*, *Jam Central*, and *MOD Station*.

The *orchestra* model recalls as the word says, a musical synchronization, where a dominant firm – that envisions and clarifies the business architecture – provides network leadership to the individual firms in the ecosystem in order to create new products and services. Intel and Microsoft represent examples, as well as Boeing and its partner for the creation of the 787airplane. In the *creative bazaar* model, there is a dominant company that offers its commercialization infrastructure – design capabilities, brands, capital and distribution channels –

for developing innovative ideas and getting the finished product or service to market. This is the case of pharma companies that offer their infrastructure to software for medical device ventures, in order to launch their medicals on the market. The *jam central* model consists in many independent entities that organically generate innovation throughout their collaboration, and each one plays a primary role without company that have a full governance responsibility of their business activity. This model is mainly developed in the IT service divisions where open source software community share their time, employees and resources finish a project goal. Eventually, the *MOD Station* model, often used in the gaming industry, is based on given permission by the company that enable customers to modify games before launching on the market. It is the case of companies that leverage on the strength of heavy users of their product in order to reduce the market risk.

Thus, Zahra & Nambisan (2012) sustain that "being part of an ecosystem has several important advantages: overcoming gaps in knowledge/skills; gaining access to critical resources, including financial capital; and building important relationships, or social capital, that firms can use in allying to commercialize new technologies […] business ecosystems offer their members opportunities to simultaneously collaborate and compete through radical and continuous innovation […] companies that capitalize on this dynamic cycle among innovation, entrepreneurship, and strategic thinking in ecosystems are especially well positioned to succeed".

3.3 **Silicon Valley**

As main sample of business ecosystems that work, it is worth to mention the Silicon Valley as one of the place on the planet where tech, business, digitalization and sharing culture shape new entrepreneurship formation.

The following considerations represent a result of an integrative desk study and a field two-month visiting period at the San José State University (California) that contributed to the current work.

Silicon Valley represents a flourish and peculiar technological district for several reasons.

Firstly, it is important to mention that a heavy contribution to the ecosystem innovation comes from the University network of the San Francisco Bay Area. They represent the first spaces where new ideas are developed: they use to base their education system on the trends of a productive international environment, in order to shape the new innovators of the future. It is enough thinking that Stanford University *Alumni*, created about 39 000 firms between 1930 and 2011[16]. Universities like Stanford and Berkeley, are not stand-alone entities. They are part of a wide very well integrated system in which the actors are

[16] Eesley C.E. & Miller W.F, (2012), "Impact: Stanford University's Economic Impact via Innovation and Entrepreneuship", The Stanford University Press

research centers, hi-tech companies, small and medium enterprises (SME) and startups.

Secondly, big high-tech companies leverage on new graduated talents and on professional figures belonging to *STEM workforce*[17] *(Science, Technology, Engineering and Mathematics)*. Thus, due to their education and professional background, they represent critical resources that contribute to the global innovation and technological competition. With reference to *STEM workforce*, another important element concerns the high immigration ratio toward Silicon Valley. 58% is the born-abroad *STEM workforce* in the Silicon Valley; California is a destination considered more by non-US citizens, than US ones[18]. Hence, the immigration factor heavily impacts on the main technological trend developed in the Valley.

Furthermore, these observations are realized considering the wide spread presence of *corporate diversity* policies, adopted within the big tech companies and digital startups of the Bay Area, in order to increase the interaction between very high qualifies workers coming from multiple international contexts with diverse operational mindset and cultures. This is an indispensable approach at the base of internal organizational innovation, that thanks to a diversified and

[17]Hira R, (2010), "US policy and the STEM workforce system", *American Behavioral Scientist*, 53(7), 949-961.

[18]http://svcip.com/files/SVCIP_2016.pdf

integrated workforce presence, encourages different perspectives and idea sharing.

Fast-growing startups and SME network is rooted on a shared and common workforce, supported by a legal system too. Enterprises in California are not obliged to adopt *non-compete agreement*[19]. This factor, increases job mobility and flexibility that represents a boost for the entire enterprise fast growing system. *Job hopping* phenomena enhance the knowledge of multiple firms and industries within working people. With the term "*high-velocity labor market*" the regional labor market is described, in which high qualified workers frequently change firms, handing out important competences among other firms as new entrepreneurs or R&D Chiefs. It is interesting to notice that a high number of people, decide to start their own business after having gained experience in a specific competence field.

The integrated presence between many spaces in which new entrepreneurship develops very fast, both with Universities and research centers, significantly impact on the contribution that institutions, private corporates and each person in that area, have on the technological trends, improving even more territorial development. In particular, with reference to new entrepreneurship

[19] Marx M. (2011). "The firm strikes back: non-compete agreements and the mobility of technical professionals" *American Sociological Review*, *76*(5), 695-712.

development, here below some important dynamics that have been observed in this area:

- *Startups competitions*: with a heavy presence of direct or indirect investors (business angels and venture capitalists) intentioned to give fund to the most promising innovative ideas;
- *Events and corporate hackathons:* throughout open source technologies, networking events, conferences and which are software developing competitions in which companies ask developers to project, implement and pitch new tech products in a very brief amount of time, often related to a specific industry;
- *Business co-working spaces, incubators and accelerators creation (see Table 2):* directly or indirectly owned and managed by big tech companies that in some cases partner with universities and research centers (ie. Google Launch Pad, Samsung Next, Plug&Play, Techstars etc.).

Table 2. New entrepreneurship development spaces visited in the Bay Area

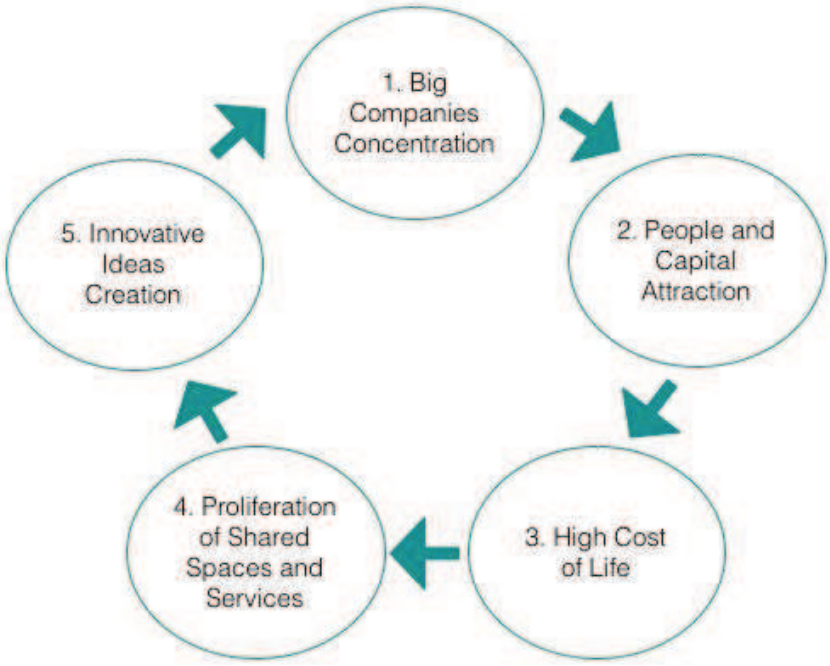
n.	ENTREPRENEURSHIP SUPPORT ORGANIZATION	TYPE	SERVICES	INDUSTRY FOCUS
1	500Startups	Accelerator	Venture fundings: seed and Series A programs + Digital innovation Lab: Innovation and Education program for companies	Consumer commerce, Bitcoin, Family Tech & Education, Design
2	BeSpoke	Co-working Space. Event Space	Demos for startups Demos for Companies	Retail and Tech
3	BootstrapLabs	Accelerator Venture Capital Event Space	Venture Capital investments (Seed and Series A)	Transportation, Logistic, FinTech, Future of Work, Security, Internet of Things, HealthTech + Advisory Platform: BootstrapWorks for AI, Big Data, IP, UX/UI, Lean Methodologies, Growth Hacking
4	Founder Institute	Pre-Acceleration	Provide early-stage and aspiring entrepreneurs with the structure, training, mentor support, and global network needed to start an enduring company.	Tech innovation
5	Founders Space	Incubator Accelerator Co-working Space	Incubator + accelerator programs + Online Startup Program + Private Coaching + Coworking space + Innovation Progra for CEO and corporate executives	Electronics / Instrumentation, Fashion, Fintech, Internet / Web Services, IT Services , Media and Entertainment, Mobile, Security, Software
6	Galvanize	Co-working Space	Membership Programs Courses for Companies	Tech startups, Data Science, Web Development ·Executive Training Benchmarking & Assessments for Companies
7	Google LaunchPad	Pre-Acceleration Accelerator Event Space	Accelerator Statup programs Corporate Accelerator	Tech innovation
8	Hanhai Investment	Incubator	business incubator for Sino-U.S.	Mobile, IoT, big data/cloud, clean energy, Security, Fintech, biotechnology, healthcare
9	IdeaLab	University Incubator	Professional networking, technology, creativity, science and the tools necessary to develop an innovative ideas	Innovation
10	Innovation Endeavors	Venture capital	Early-stage venture capital firm partnering with startups that apply cutting edge technology to transform large industries	Emerging technology
11	Matter.	Accelerator	Accelerator Program Media-focused startup	Media and Entertainment
12	Nasdaq Entreprenerial Center	Non-profit organization Event Space	Providing entrepreneur support: connect, inspire, and educate aspiring and current entrepreneurs	Education, Knowladge Transfer
13	PlugAndPlay	Accelerator Co-working Space Venture Capitalist Corporate Innovation	Funding Program (Pre-Seed/ADvisory - Seed/Angel - Series A) + Partnerhip for Corporate Acceleration Program	Fintech, Internet of Things, Retail, Mobility, Insurtech, Health & Wellness, Travel & Hospitality, Media, Food, Supply Chain & Logistics, Energy & Sustainability
14	Rocket Space	Co-working Space Accelerators	Startup Acceleration Startup Engagement Corporate Membership	Mobility, Logistics, Food & Ag Tech + Retail, Insurance, Healthcare, Ad&Media Tech
15	Runway	Co-working Space Incubator	technology innovation hub bringing together entrepreneurs, startups, VCs, mentors, Fortune 500 Corporations, and industry experts	Logistics Tech, Food + Ag Tech, Mobility Tech, Retail Tech, Insurance Tech, Healthcare Tech, Ad Tech + Media, Telecom
16	Samsung Next	Corporate accelerator	Accelerator Programs: pre-seed and seed investment + early-stage fundings	IoT, VR, AI, NextGenUX, B2B Mobile, Security, Mobility, Mobile commerce + Partnership & Merger Acquisition
17	Soma Central	Co-working Space	Workspace for startups	high tech
18	TechShops	Co-working Space	Membership Programs	Creativity
19	The Vault	Co-working Space Innovation Hub	Offer workspaces, plus resources, talent, knowledge and networks to help startups grow better and faster	Innovation
20	UpWest Labs	Investment Firm	Early stage Investments+ Partnership Relations	Enterprise Software, Internet of Things, Infrastructure Technologies, Artificial Intelligence, Consumer Applications + Drones, Cyber Security, Augmented Reality / Virtual Reality, Marketplaces
21	US MAC	Accelerator	Global Expansion for international Tech Startups+ Global Expansion for international Tech Companies (incoming)	Technology companies from foreign countries
22	i/o Ventures	Accelerator	Early stage startup program that focuses heavily on mentorship, Seed and Early Stage Venture Investments	Web services, client software, digital media, and gaming industries.
23	WeWork	Co-working Space	Workplace solutions Events organization	Enterprise
24	YCombinator	Accelerator	Accelerator Program	Hardware, Biotech, Edtech

Source: personal elaboration

All these elements have to be considered with a high innovative and collaborative culture, typical of a new entrepreneurial spirit, competences and intention to invest.

In order to share a synthetic sketch of the SV socio-economical system, *Figure 10* describes the dynamics observed, through a cause-effect relation between five identified factors: 1. *big company concentration*, 2. *people and capital attraction*, 3. *high cost of life*, 4. *proliferation of shared spaces and services, 5. innovative ideas creation*.

Figure 10: Cause-to-effect model of SV socio-economical system



Source: personal elaboration

Big companies concentration attracts worldwide international investments. The main investors (business angels and venture capitalists) are located in just one road in Palo Alto area. Thus, *people and capital attraction*, impact on the

housing and office rental cost, letting it raise a lot. In San Francisco, the average rental of an apartment increased about 30%[20] from 2011 to 2016. Thus, real estate and rental costs, represent a consistent part of the total cost of life in that area. Hence, many freelance, young professionals and entrepreneurs, with a *high cost of life* definitely prefer shared spaces solutions for their office spaces, rather than independent office solutions. So, although these people who share the spaces have different background and origins, they all prefer to pay a cheaper price for a shares space solution, in which they have the chance to be in touch with shared resources, know-how, consultancy and other services and facilities that represent a support for their enterprises. *Proliferation of shared spaces and services* heavily influence *innovative ideas creation* in which the big tech companies show their interest often entering the property of these entrepreneurial supportive organizations and making the future acquisition of the best cutting-edge solutions.

[20] http://siliconvalleyindicators.org/

3.4 **Co-working spaces**

Bouncken and Reuschl (2016) sustain that "co-working-spaces driven by the digitalized economy (Belk, 2014) integrates different elements of home-office concepts, office communities, tele-centers, telework, virtual work, virtual teams, incubators, and communities of practices but specifically offers a cross-sectoral working community with more flexibility, autonomy, and opportunities for social interaction".

Today, more than 500,000 individuals use the more than 2000 co-working spaces worldwide (Johns and Gratton, 2013). Co-working spaces environment, recall the flat organizations that put them in the opposite position of the hierarchies of established firms (Chesbrough and Teece, 1996).

Freelancers, self-employed and microbusinesses are the main users of these forms of spaces. They are the user profiles that need low administrative duties and are oriented to learn from others through social interaction. These and dynamics generate and improve ideas for new venture creation, thus new entrepreneurship mechanisms. In fact, Bouncken and Reuschl (2016), in their study, assimilate the co-working space to a business incubator in terms of growth for innovation and for firms. Bilandzic and Foth (2013) classify three types of typical co-working users:

- *Utilizer* uses co-working-spaces to profit from the technological

infrastructure;

- *Learner* uses co-working spaces to acquire knowledge, visit events, and exchange with peers;
- *Socializer* searches for recognition and acknowledgement in co-working spaces.

A critical point in the today society is understanding how these forms that enhance new entrepreneurship formation can improve the economic situation of a territory, such as in several geographic areas of the world (Silicon Valley, Silicon Roundabout, Israel, etc.) where digital startups thrives and impact the welfare of a specific area.

With reference to the types of co-working spaces structures, several models have been developing. A *public co-working space*, refers to the governance and ownership structure, it can relate to firms, institutions, universities, libraries, that often offer a membership access to everyone. Differently, *incumbent firms* or *corporate co-working,* use a membership restriction for the access. For example, IT-companies like Google or Apple allow to use co-working space to their employees only. Otherwise, *semi-private* or *private-public form of co-working space* influence the structure of their business models through selection mechanisms, artifacts, and facilities that they offer at certain price to a specific target of users. Co-working spaces related to universities or technology incubators are interested in knowledge and learning sharing instead of earning

capital. Differently State-owned ones aim to increase the occupational rate of the region.

Co-working space industry is turning into a hotel business, where, as in origin, they make profit by shared spaces rentals differentiated by interior design, architectures and many amenities, reaching often the form of branded franchise systems.

Belk (2014), claims that "the sharing economy relates to the perceived value of ownership. Consumers enjoy goods and services only when they are required or desired without obtaining ownership and the involved obligations". These systems, thanks to social interaction and shared services drive to the formation of places in which creativity is a landmark. And when it comes to the new venture development, it matters.

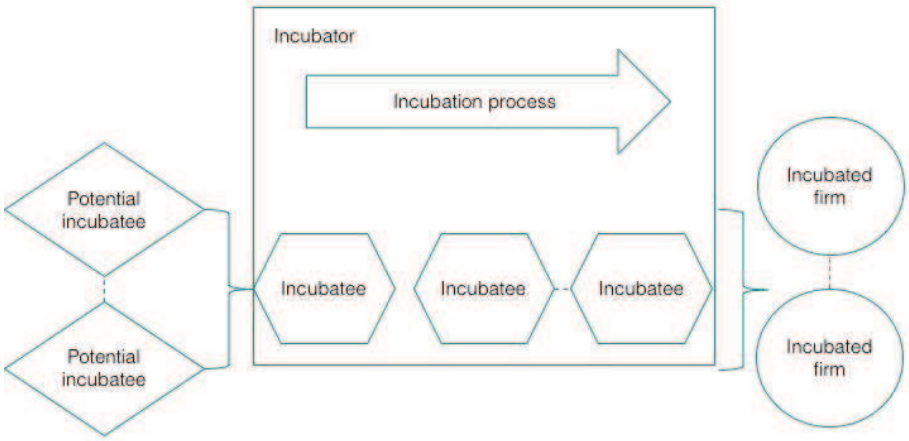
3.5 **Incubator-incubation concept**

Today it is not easy to identify a right definition of incubation. It is due to a heavy presence of startup creation trend worldwide. Hackett and Dilts (2004) after a systemic review on the theme of new venture creation, give the following definition of a business incubator as a shared office- space facility that seeks to provide its incubates (i.e. ‘‘portfolio-’’ or ‘‘client-’’ or ‘‘tenant-companies’’) with a strategic, value-adding intervention system (i.e. business incubation) of monitoring and business assistance.

Miller and Stacey (2014) consider it as an "umbrella" term like a "collection of techniques that can be used to prove an idea, develop a team and de–risk ventures for later–stage investors. It happens in accelerator programs, co–working spaces, social venture academies and learning programs, competitions and through the work of very early–stage investors".

Furthermore, Grimaldi and Grandi (2005) assert that "the incubation concept seeks an effective means to link technology, capital and know-how in order to leverage entrepreneurial talent, accelerate the development of new companies, and thus speed the exploitation of technology […] Incubators assist emerging businesses by providing a variety of support services such as assistance in developing business and marketing plans, building management teams, obtaining capital, and access to a range of other more specialized professional services."

Figure 10*: Incubator-incubation concept map*



Source: Hackett S.M., Dilts D.M., (2004), Op.cit.

They assert that a business incubator is not just an office building or an infrastructure that offers shared space to tenants who look for a cheap desk, but it has several tangible or intangible facilities, that help the new venture to develop, such as network of individuals and organizations, an incubator advisory board, incubate companies and their employees, a members community to join, and many professional services providers like lawyers, accountants, consultants, marketing specialists, venture capitalists, angel investors, and volunteers.

On the same wave of co-working spaces, incubators are differently classified in function of the expressed need of their users, mainly identified in the new ventures or startup companies.

3.6 **Incubators models**

Incubators offer distinct services that reflect the customer needs and the specific resources available. The existence of different incubators and the evolution of their business models over time have been driven by the evolution of company requirements and needs. Grimaldi and Grandi (2005) identified four types of incubators described as follow: *Business Innovation Centres* (*BICs*), *University Business Incubators* (*UBIs*), *Independent Private Incubators* (*IPIs*), *Corporate Private Incubators* (*CPIs*).

- *Business Innovation Centres* (*BICs*) offer a set of basic services to tenant companies, including the provision of space, infrastructure, communication channels, and information about external financing opportunities, visibility, etc.; they fall within the cluster of public incubators, that has the main objective of cost reduction of doing business by offering support services such as assistance in business plan development or providing public funding within national and international schemes. Thus, these services represent one of their main form of profit.

- *University Business Incubators* (*UBIs*) is where research leading to patentable inventions and discoveries, faculty spin-off ventures, and technology transfers happen. They rely on government policy-makers who view science as a vehicle for energizing economies, asking universities to lend resources, faculty time and talent making substantial contributions to local economies through. UBIs place more emphasis on scientific and technology transfer from academia to companies. Two are the typical services offered by UBIs: 1. typical incubator services including shared office services, business assistance, access to capital, business networks and rent breaks; 2. university related services (faculty consultants, student employees, university image conveyance, library services, labs/workshops and equipment, mainframe computers, related

R&D activity, technology transfer programs, employee education and training, and other social activities).

- *Independent Private Incubators* (*IPIs*) are incubators set up by single individuals or by groups of individuals (companies too may be among their founding partners), who intend to help rising entrepreneurs to create and grow their business. Sometimes they are called accelerators, since they usually do not intervene during the business concept definition phase, but they do intervene when the business has already been launched and needs specific injections of capital or know-how.

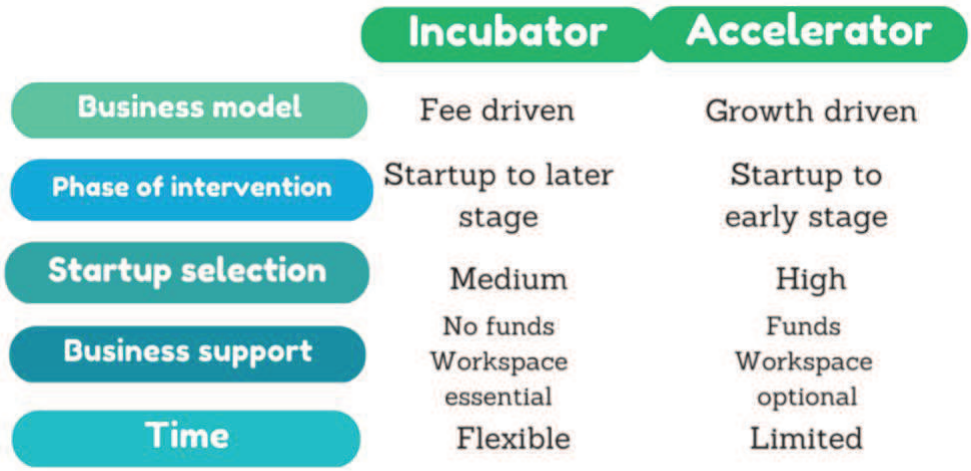
- *Corporate Private Incubators* (*CPIs*) are incubators owned and set up by large companies with the aim of supporting the emergence of new independent business units. These new business units (corporate spin-offs) usually originate from research project spill-over (carried out within source-organizations) and happen to be the outcomes of diversification strategies. In general, these incubators (like university incubators) intervene during the early stages (business concept definition) of the business development cycle. Both with the IPIs belong to the category of private incubators pushed by the IT revolution that lead to the purpose for both IPIs and CPIs to create new ventures and take a portion of equity in the new venture as fees, giving birth to form of entrepreneurial

supporting organizations dedicated to another growth stage level of a startup company, such as business accelerators do.

3.7 Business acceleration

Barbero et al. (2014) assert that over the past decades a wide variety of incubation mechanisms have been introduced by policy makers, private investors, corporates, universities, research institutes etc. to support and accelerate the creation of successful entrepreneurial companies […] Whilst extant literature on incubation mechanisms agrees on their contribution to the nurturing of new ventures in general, it also points to the need to take the heterogeneity of different incubation models into account. Bruneel et al. (2012) claim that Incubation models have evolved and continue to evolve into new generation incubation models.

Figure 11: Incubator vs accelerator



Source: Master in Marketing & Service Management Students, (2015), Ed. XIV. Department of Economics, Management, Institutions

A new generation incubation model involves the seed accelerator program.

“Accelerators” are organizations that aim to accelerate successful venture creation by providing specific incubation services, focused on education and mentoring, during an intensive program of limited duration” (Cohen and Hochberg, 2014).

They can be considered as a special case in the business incubation industry. Accelerators, act as intermediaries between providers of capital (usually institutional investors or entrepreneurs). The core value recognized to accelerator is the possession of the experience and know-how in certain sectors of activity making the ideal subjects to push and accelerate the growth of a startup. Accelerator programs usually make more investments simultaneously on different startup (cohorts) and investments decisions are taken by management team while it is rare for individual investors to be involved in such decisions. They are also characterized by stronger relationships during the months of the program. They combine the services offered by incubators with expertise, resources and experience designed to validate the idea of business and to lunch it on the market. Accelerators indeed offer programs lasting between 3 and 12 months in which the selected projects receive the support and sufficient funds to ensure the maintenance of founders and coverage of major expenses for product development by bringing the project from a conceptual stage to a first stage of

implementation. Often teams are made to transfer structures which are common in workspaces tailored to their needs. There are also a lot of consultants and mentors to value the business of the startup and of the idea just to increase the potential business of the firms in early stage.

Box 1. Phases of the acceleration process

Call for ideas: *submission of the projects is open to anyone with an idea to be submitted;*
Selection: *the admission project is highly selective and it is focused on common parameters: consistency and characteristics of the team, the value of the idea or product, market potential, scalability of the business and the quality of the presentation of the project;*
Admittance: *the startup often is not yet established as a business, than in this phase starts the constitution of the startup;*
Program: *validation of business ideas, development of the prototype and market testing;*
Final event: *at the conclusion of the program held an event in which teams have the opportunity to present their ideas to potential investors.*

Source: Kauffman Fellows Program, (2012), Thomas van Huijgevoort, The 'Business Accelerator': Just a Different Name for a Business Incubator?

For its services and funding the accelerator keeps a percentage of equity however, it presents strong oscillations between the various programs and it is usually comprised between 4 and 40 % of the capital. One important contributing factor has been the changing economics of start-up firms (from the start-up firm perspective), in the last decade. Lower technology costs,

easier routes to customer acquisition and better forms of direct monetization have paved the way for high technology teams to quickly bring a product to the market. The decreasing costs of software and hardware have been an important trigger for the increasing number of start-up firms and 'Business Accelerator' programs. Through the rise of internet, new business models have been emerging and it became possible to create revenue from day 1 of the business. From the perspective of the investment community, accelerators facilitate a way for early stage investors to lower the risk of investing

in ICT or other high-technology start-up firms. After the dotcom boom of 2000, investors became extremely cautious with putting these firms in their portfolios, because of the high risks attached.

3.8 **Business accelerator design**

Eventually, business accelerators, have the aim to increase the new entrepreneurship growth throughout mentoring and training services to one or more groups of startups during a limited period. These kinds of accelerators, have a for-profit legal status, since most of the time, they keep a part of the equity in the participant startups[21].

[21] Cohen, S., & Hochberg, Y. V, (2014), Accelerating startups: The seed accelerator phenomenon.

With reference to the new entrepreneurship supportive organizations, the term accelerator, embraces every program that provides, services like mentorship, networking opportunity and fundraising sources. In the *Table 3*, as follows a classification of some of the key elements[22] that describe a business accelerator.

Table 3. Design elements of a business accelerator

Design Elements of Accelerator	Main Activities	Actors Involved
Selection Process	***Multistage Recruitment events:*** *online application, open call, matchmaking and team building*	*External Stakeholders: mentors, investors, alumni, senior executives Internal entrepreneurs in residence for joining the team*
Strategic Focus	***Industry/Sector/ Geographic Specification:*** *Vertical or Generic (retail oriented, health, financial)*	
Program Package	***Mentoring Services*** *: Define business model for startups + connect with customers/investors*	*External: Entrepreneurs with high experience; Alumni. According to the Design Theme: Corporate Mentors;Active Business Angels;Consultants or business developers*
	Curriculum & Training: *Courses about specific topics (finance, marketing…)*	*External: lawyers, accountants and HR people Internal/External: mentors and coaches*
	Demo Days/Investor Days:Visits and Presentations and Networking	*Internal: Startups External: Customers and Investors*
	Counselling Services: Business Assistance activities such as evaluation moments, "office hours"	*Internal: accelerator management team*
	Location Services: *co-location in shared open space*	*Internal members*
	Investment Opportunities: *Funding in exchange for equity*	*Internal Members*
Funding Structure	***Working Capital/Fund Raising Methods***	

Source: adapted by Pauwels C. et al. (2016).

[22] *Pauwels C. et* al., (2016), "Understanding a new generation incubation model: The accelerator", *Technovation,* Vol.50-51, pp.13-24.

3.9 **Other programs**

Different are other options in which freelances, aspiring entrepreneurs or effective ones can start approaching to new venture development building: startup weekends, startup schools, meetups, hackathons.

- Startup Weekends are 54-hour events where developers, marketers, product managers and startup enthusiasts come together to share ideas, form teams, build products and launch startups. By bringing their experience, entrepreneurs and aspiring entrepreneurs can find out if startup ideas are feasible. On average, half of Startup Weekend's attendees have technical or design backgrounds, the other half have business backgrounds. Examples of Startup Weekend in UK are Launch and Social Innovation Camp;
- Startup schools: Startup school's main purpose is helping people start their own businesses by providing training and support programs, and helping governments and regions drive economic growth based on the principles of entrepreneurial economics;
- Meetups: aim is to connect the various tech communities to help members network, connect, invest and launch products in principal technology clusters. Generally, are organized monthly meetups to cover various technology subjects that are of interest to community members;

- Hackathons: these differ from meetups because there's a focus on building new tools rather than on connecting with new people, but they aren't as focused on creating new businesses as startup weekend events.

3.10 **Comparisons**

Even in the new entrepreneurship literature the name "entrepreneurial support organization" is not diffused, it is used in this part of the work to embrace the different forms of spaces that enhance new venture formation under the different frameworks of public, private and hybrid actors of an ecosystem.

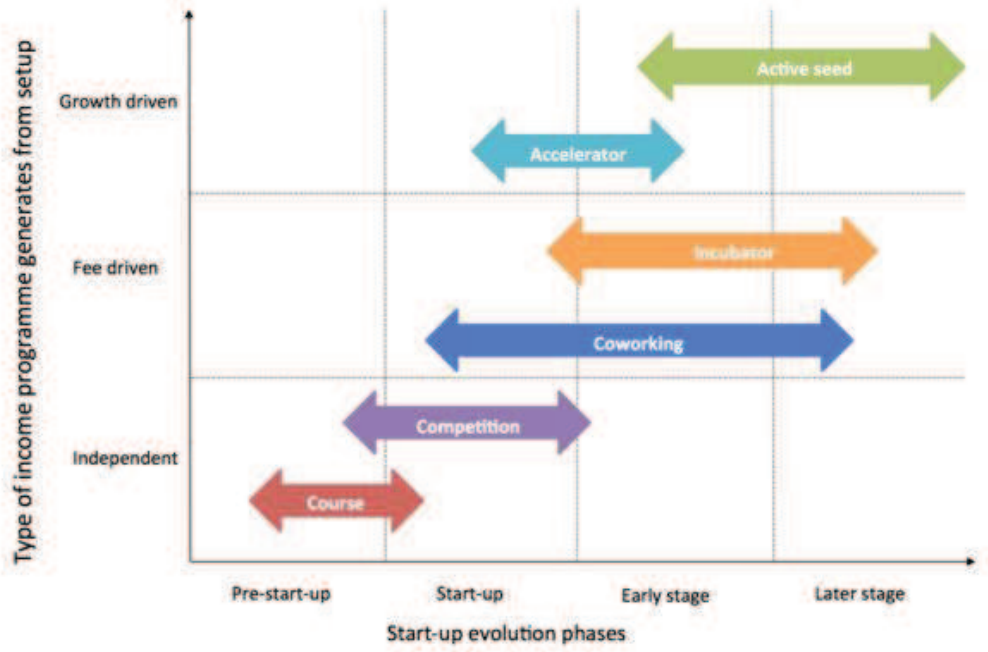
In order to give an overview of the entrepreneurial supportive presence that enhance new entrepreneurship formation with different manners (programs, facilities, services, etc.), here below, different variables on which these organizations can differentiate each other:

- *Startup selection*: many of the entrepreneurial support organizations, provide targeted support programs to startups or aspiring entrepreneurs through diverse approaches: primarily on the idea, the entrepreneur or the team. In order to pursue an idea-focused approach, incubator managers must have access to deep knowledge in relevant technological fields. The entrepreneur-focused approach, in contrast, requires the ability to judge personality as well as the knowledge of more general

business development requirements. Selection could also be distinguished between two basic approaches. In the ‘‘picking-the-winners’’ approach, incubator managers try to identify a few potentially successful ventures ex ante. When this approach is taken to its extreme, incubators resemble private venture capital firms. In the ‘‘survival-of-the-fittest’’ approach, incubator managers apply less rigid selection criteria, take on a larger number of firms and rely on markets to provide the selection processes that over time will separate winners from losers;

- *Business support*: it refers to the several types of services provided in terms of network, funding or other professional services;
- *Industry focus*: these organizations, might focus on a specific industry and develop a capacity to attract startups in the same industrial sector or in different but related industries (*i.e Fin-Tech, Fashion, Travel*).
- *Time*: support programs could have from 15 days to a year period length.
- *Business Model*: it refers to how to generate income from new venture formation, such as based on spaces/offices renting (*fee* driven), based on keeping a percentage of the venture equity in exchange of service providing membership (*growth driven*), or generating revenue from other types of activities such as advertising (*independent*);
- *Phase of intervention*: refers to the classification of the different venture development stages (*pre-startup; startup; early-stage venture; late-stage venture*).

Figure 10*: The link between entrepreneurial support organization business model and venture growth stage*



Source: Adapted by Dee N. et al., (2015), "Startup Support Programs. What's the difference?", Nesta, Feb, p.22.

The *Figure 10* shows a relation between the type of income that new entrepreneurship supportive programs generate in function of the different evolution phase of the startup.

Investors and programs with a business model that is reliant on the value of equity from startups, must have access to startups with high–growth potential; incubators and co-working spaces typically charge rental or membership fees in order for companies to gain access to space, facilities, networks and services. This automatically creates a tendency for these programs to work with ventures that already have revenue from which monthly fees can be extracted or ventures that have received investment. Co-

working spaces have developed innovative charging options to offer more flexible agreements and new payment options where ‘you only pay for what you need”; incubators tend to have less flexible arrangements than co-working spaces, and prefer tenancy agreements. Once the most flexible rental option for startups, incubators are now more likely to be seen as the next step after a co-working space, when the startup needs secure dedicated premises with room for growth.

EMPIRICAL STUDY

4.1 Intro and aims

This part of the work, is aimed to show the results of the dissertation study, that started with the exploration of the strategic innovation in new entrepreneurship environment, and contributed to a research project developed by Cantone et al. (2016), in which the authors explored and measures the contribution of innovator's DNA model (Dyer et al., 2009) on new entrepreneurship learning in the value co-creation process, measuring the impact of new entrepreneurship learning on the value co-creation process outcomes (value proposition, business network, shared cognitive scheme).

In particular, the dissertation study aims to investigate the discovery skills (Dyers et al., 2009) of the new entrepreneur that enhance venture creation, and to explore how these skills impact on the entrepreneurial learning (Politis, 2005) within a business accelerator. The exploration started with the aim to answer to the following questions:

- Which are the discovery skills of the new entrepreneur inside a business accelerator?
- How these skills impact on the entrepreneurial learning inside a business accelerator?

4.2 **Innovator's DNA**

In order to explore the main topics of the dissertation study, it is important to highlight Dyer et al. (2009) thought. They claim that "five are the discovery skills that separate the true innovators from the rest of us" and propose a model that has been adopted by Cantone et al. (2014) in order to investigate how innovation intermediaries, mobilize competencies in entrepreneurial teams to generate thriving firms. Dyer et al. (2009) started to investigate what is the "secret sauce" of a business success for entrepreneurs, as well as for individuals who developed innovative ideas and built new products or services (ie. Steve Jobs for Apple, Steve Bezos for Amazon or Pierre Omidyar for eBay).

Box 2. Put a ding in the universe

Why do innovators question, observe, experiment, and network more than typical executives? As we examined, what motivates them we discovered two common themes: (1) they actively desire to change the status quo and, they regularly take risk to make that change happen. Throughout our research we were struck by the consistency of language that innovators use to describe their motives. Jeff Bezoz wants to "make history", Steve Jobs, to "put a ding in the universe", Skype co-founder, Niklas Zennstrom to "be disruptive, but in the case of making the world a better place". These innovators steer entirely clear of a common cognitive bias called the status quo bias – the tendency to prefer an existing state of affairs to alternative ones.

Embracing a mission for change, makes it much easier to take risks and make mistakes. For of most entrepreneur we studied, mistakes are nothing to be ashamed of; in fact, they are expected as a cost of doing business." If the people running Amazon.com don't make some significant mistakes", explained Bezoz, "then we won't be doing a good job for our shareholders, because we won't be swinging for the fences". In short, innovators, rely on their "courage to innovate" – an active bias against the status quo and an unflinching willingness to take risks – to transform ideas into powerful impact.

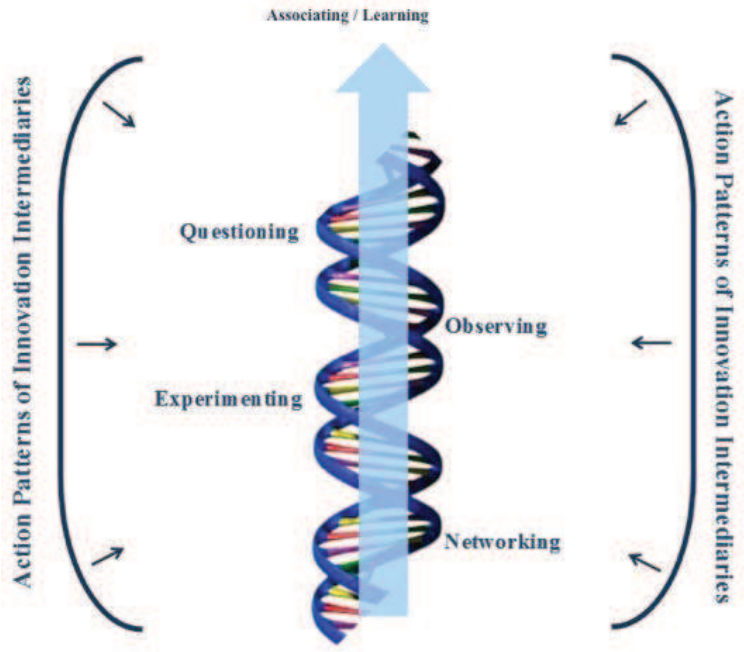
Source: Dyer et al. (2009)

These “innovation skills” are out-and-out action patterns that distinguish the mind-set of innovative entrepreneurs from the other business people and the approach they come up with creative, breakthrough and visionary business ideas (Cantone et al., 2014).

The empirical research carried out by the Authors (Dyer et al., 2009, p. 63-66) highlights that innovative entrepreneurs have the following five distinctive skills. *1. Associating*, “the ability to successfully connect seemingly unrelated questions, problems, or ideas from different fields”, in order to generate learning. *2. Questioning*, the ability to question right, provocative and unconventional questions, “that challenge the common wisdom”. *3. Observing*, the ability to scrutinize any small detail of the social and business phenomena (i.e., potential customers behaviors), “in order to gain insights about new ways of doing things”. *4. Experimenting*, the active experimentation and exploration in order to create innovation. *5. Networking*, the conscious effort “to finding and experimenting ideas through a network of diverse individuals [...] with different kinds of ideas and perspectives”, in order to extend the own knowledge domain.

To recognize how the action patterns or discovery skills work together they have been represented in the metaphor of DNA (*Figure 14*).

Figure 14*: The action patterns of value co-creation process within a business accelerator.*



Source: adapted from, Dyer et al., 2009.

Associating is like the backbone structure of DNA double helix. The other action patterns or discovery skills – *questioning, observing, experimenting and networking* – wind around this backbone. They stimulate, reinforce and consolidate the new venture project, through the spawning of *learning process* inside the team members. *Associating/learning* is the core construct or main discovery skill that contribute to the value co-creation process in a business accelerator. The other action patterns or discovery skills wind around this backbone affecting the innovation process.

4.3 **Innovation Process**

As described in the first chapter it is composed of two main phases: the *initiation stage* and the *implementation stage* (Zampetakis and Moustakis, 2006).

Within a business accelerator some skills contribute to the *initiation stage* allowing entrepreneurial teams to screen the ideas, improve knowledge and awareness about it, and define better the value proposition. This phase has been defined by Cantone et al. (2016) "*strategic discovery*", and probably *observing* and *questioning* are very critical for such an aim. Other skills serve to the *implementation stag*e allowing entrepreneurial teams' execution of their business idea. So, this phase has been defined by Cantone et al. (2016) "*strategic execution*" and probably *experimenting* and *networking* are very critical for such an aim.

These two dimensions, "*strategic discovery* and *strategic execution*", represent the factors throughout the discovery skills of new-entrepreneurs impact on their learning inside business accelerators. Hence, it is important to highlight that, within a business accelerator, during the initiation and the implementation of a new venture, in which new entrepreneurial learning develops, three main strategic innovation dimensions represent the results of a value co-creation process (Cantone et al., 2016): *value proposition* development, *business network* and *strategic cognitive scheme*.

Correctly 'designing' a *value proposition*, then implementing and commercially refining viable architectures for revenues and costs, are critical to the enterprise success. They are essential when the enterprise is first created; but keeping the business model viable is also likely to be a continuing task (Teece, 2010). Ostwerwalder et al., (2014), recognized the relevance that value proposition design has in early stage start-up.

With reference to *networking* it is considered very important for successful entrepreneurial ventures (Peprah, 2012), since it enhances learning (Lechner et al., 2005). Theoretical and empirical works (Hoang and Antoncic, 2003) seek to understand (1) how *networks* affect the entrepreneurial process and how they lead to positive outcomes for the entrepreneur or their firms, and (2) how entrepreneurial processes and outcomes in turn influence network development over time. Thus, Cantone et al. (2016) labelled *networking* as the construct that impact on the entrepreneurial learning and *business network* as an outcome of the entrepreneurial learning process.

Eventually, another effect consequent to the discovery skills' leverage among entrepreneurial learning development inside business accelerators, is to create a *shared cognitive scheme* inside the founders' team that effectively guides the decisions and conducts to face the challenge of the new entrepreneurship venture (Ensley and Pearce, 2001)

4.4 **Methodology**

In order to pursue the research aims, a desk and a field part of the research have been carried out. The former consisted of a literature review on the themes of new entrepreneurship development during the 3-year PhD program. The latter is represented by a 3-month visiting period from January to March 2015 in a British business accelerator in London (UK).

An embedded and longitudinal in-depth single case study (Hamel, 1993; Yin, 1994; Easton, 1992, Perry, 1998; Saunders *et al.*, 2000) is the research approach adopted and it has been applied to a leading international business accelerator located in London (UK): *Innovation Warehouse (IW)*.

The techniques adopted have been diverse and carried out in team as follows:

- An ethnographic participation, performed during the key events and the activities of the business accelerator;
- 43 qualitative in-depth interviews (McCormack, 2004; Boyce & Neale, 2006), carried out among key actors of the organizations: *18* to the members of Innovation Warehouse organization and *25* to the entrepreneurial teams' members;

The findings of the qualitative research phase have informed factors and information to the step of:

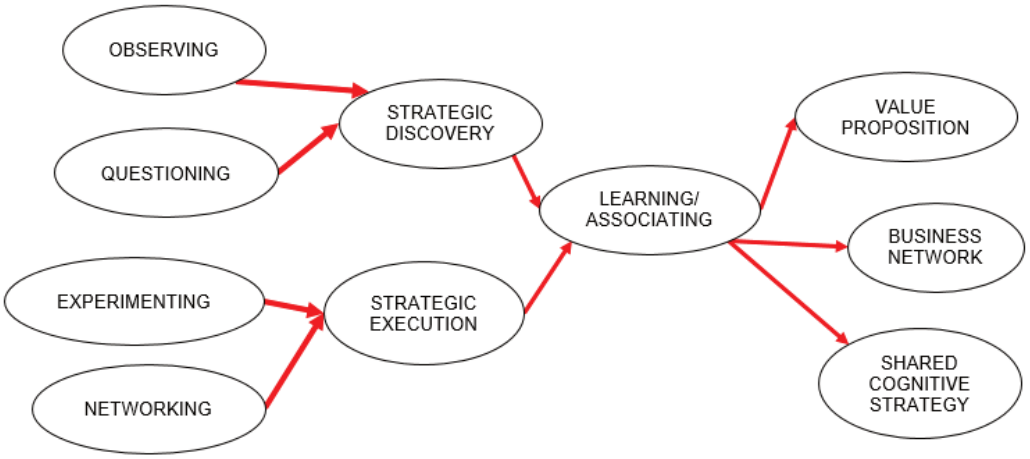
- 44 quantitative questionnaires that were designed on the base of the literature review and delivered in a guided and assisted form to key players in IW (*founders, CMO, CTO*) of accelerated start-ups; more specifically to 5 *founded, but not yet operating on the market*; 26 *early stage (operating on the market from 1 to 24 months)* and 13 *later stage (more than 24 months on the market)*.

The collected data have been elaborated throughout a speech to text conversion, and a speculative reflection have been carried out among the authors (Cantone et al., 2016); a member check with IW founders helped to confirm the reflections made by authors.

A confirmatory factor analysis by *SEM (Structural Equation Model)* based on Partial Least Square (Wold et al., 1984, Tenenhaus et al., 2005) on the data provided by the questionnaires and main findings of qualitative phase was carried out in order to produce a scientific paper with Cantone et al. (2016).

The structural equation model *(Figure 15)* aimed to measure the impact of the discovery skills on the new entrepreneurial learning within the value co-creation process inside Innovation Warehouse.

Figure 15: the SEM for new entrepreneurship value co-creation process



Source: Cantone et al., (2016), op.cit.

The strategic discovery and strategic execution variables have been estimated recurring to multi block approach. This procedure consists in assigning to each multi block variable the manifest variables influenced by the latent one. For instance, to the statement "*The test/experiment was fundamental for structuring our business project as a sustainable one!*" (representing a manifest variable) of the survey, the respondent expresses his or her level of agreement through a 1 to 7 Likert scale, measure of the "*experimenting*" latent variable.

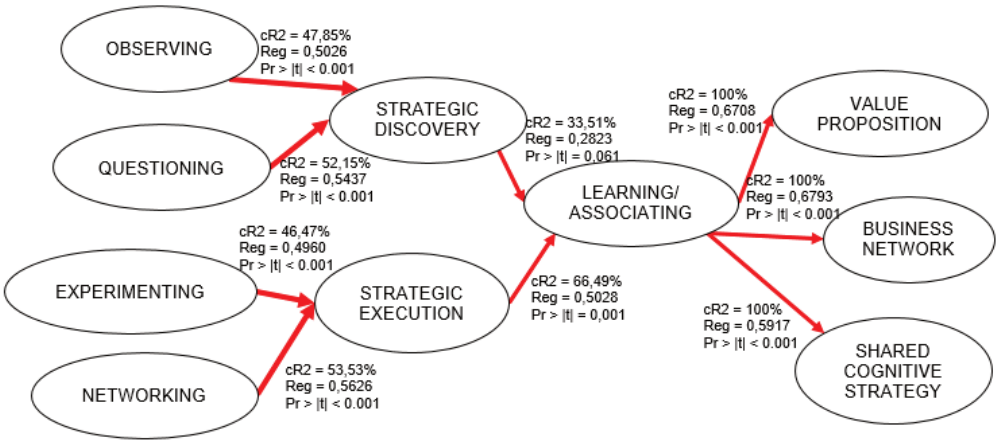
4.5 **Findings**

The results are visible in the theoretical conceptual and empirical model (*Figure 16*) created by Cantone et al. (2016) that highlights the cause-effect relations existing among the latent variables (questioning, associating, experimenting, observing, learning) of innovator's DNA model (Dyer et al., 2009) explaining how they impact on the entrepreneurial learning affecting strategic discovery and strategic execution.

Thus, the discovery skills of a new entrepreneur inside a business accelerator, positively and significantly impact on the entrepreneurial learning of an individual. More specifically, discovery skills impact on the entrepreneurial learning during the phases of *strategic discovery* and *strategic execution* (Cantone et. al, 2016).

Furthermore, the model measures even the impact of entrepreneurial learning in strategic innovation within entrepreneurial teams on three relevant outcomes: the innovation of *value proposition* (Chersbrugh & Rosenbloom, 2002; Teece, 2010; Ostwerwalder et al., 2014), the elaboration of a *shared strategic cognitive scheme* among entrepreneurial team's members (Knight *et al.*, 1999; Ensley and Pearce, 2001), and the improvement of *business network* (Lechner et al., 2005); Hoang and Antoncic, 2003).

Figure 16: the SEM for new entrepreneurship value co-creation process. Findings.



Source: Cantone et al. (2016)

As illustrated in the graph all the latent variables, exogenous and endogenous ones, are statistically significant. The lowest level of significance (Pr>ItI<0,061) is related to "Strategic Discovery" variable. All the other latent variables have high level of statistical significance (Pr>ItI<0,001). The main finding of the SEM is related to the "Learning" Variable. In fact, the impact (cR2=66,49%) of "Strategic Execution" on "Learning" is almost twofold respect to the impact (cR2=33,51%) of "Strategic Discovery". It is confirmed a finding that in Innovation Warehouse the new entrepreneurship value co-creation process is driven by strategic execution advantage for start-ups rather than strategic discovery ones. The exogenous latent variable impacting more on Strategic Execution is "Networking" (cR2=55,53%) followed by "Experimenting" (cR2=46,47%). The exogenous latent variable impacting

more on Strategic Discovery is “Questioning” (cR2=52,15%) followed by “Observing” (cR2=47,85%).

In terms of new entrepreneurship value co-creation outcomes cR2 is 100% and is useful to read the regression path coefficient. This latter is higher for “Value Proposition” and “Business Network” respect to “Shared Cognitive (Strategic) Scheme” (Regress about 0,67 vs 0,59). In the following, some measures that confirms the content validity of the model. Goodness of fit= 0,6861, relative goodness of fit=0.9056.

As the external model is reflexive for every latent variable, internal consistency has been verified: Cronbach's Alpha and Dillon Goldstein’s Rho >0,80 for each latent variable. Average Communality is >0,5. Thus each latent variable, endogenous or exogenous ones, is internally unidimensional. The mono-factorial validity is confirmed for each latent variable, so every manifest variable of each latent group explains better its membership group.

They have been elaborated also the SEMs findings at group level (founded but not operating, early stage, later stage start-ups). But still to be included in a future work to publish.

4.6 **Innovation Warehouse**

Innovation Warehouse was chosen as the research context for the field part of the research for several reasons. Firstly, it is a digital industry focused organization; secondly, it is based in London, which represents one of the most active places worldwide where start-ups proliferation was cutting the edge in 2015; thirdly, life cycle of venture development, was not defined yet in 2015 and could represent an opportunity of managerial implication increasing for the impact of the research.

Innovation Warehouse was founded in 2010 as co-working accelerator and community for digital high-growth start-up businesses in London. The idea was brought to life by a group of entrepreneurs and angel investors with significant experience and record of accomplishment in working with start-ups. Every day, over 200 entrepreneurs, angels and mentors work together from IW Smithfield location. Some key figures about IW in Farringdon: over £35 million in funding raised for start-ups; 250 active investors; 300 accelerated companies.

4.7 **Discussion**

This case study demonstrated that *Learning* inside Innovation Warehouse is the core value co-creation process. It affects mainly value proposition and business network definition, during early stage of new entrepreneurship creation, and business network and a shared cognitive strategy in later stage.

Entrepreneurial learning is also fostered by initiatives and collaborations that start spontaneously among start-ups members and IW organization and impact heavily on execution and business network exploitation, unexpectedly originated from the ecosystem.

Innovation Warehouse is a business accelerator ecosystem where start-ups search *execution* advantages more than *strategic discovery* ones.

On the one hand, *strategic execution* need increases in the maturity phase of a start-up; this probably depends on the priority for the entrepreneur to increase rapidly business performance in order to meet angel investors and shareholder returns.

On the other hand, *strategic discovery* is relevant in the early stage of new entrepreneurship development, more precisely when the team has not clear yet its value proposition to deliver to the market; differently, it decreases in later stage start-ups.

The value co-creation is led by Innovation Warehouse initiatives and heavily depends on key organizational and inter-organizational processes. They nurture *questioning, observing, experimenting* and *networking* functional to *learning* and business exploration.

CONCLUSIONS

The current study wants to be expression of a personal and professional growth path in which studying and living experiences related to innovation and new entrepreneurship development, could address thoughts to scholars, students and aspiring entrepreneurs.

In particular this work contributes to new entrepreneurship literature, identifying in the Dyer's model the main discovery skills of an innovative person. *Questioning, observing, experimenting* and *networking,* with the ability of *making associations* among collected knowledge and lived experiences, represents the main skills that increase the *entrepreneurial learning*.

Also, this study contributes to the literature on entrepreneurship discovering two multi block latent constructs (*strategic discovery* and *strategic execution*), not already existing in Dyer's et al. model, but impacting on entrepreneurial learning within business accelerator contexts;

The study confirms the theory of network: dependent and independent latent variables in new entrepreneurship context (Peprah, 2012; Setyawati, et al. 2011; Lechner et al., 2006). It shows the importance of the ability in managing relationships beforehand, during and afterword the implementation of a new

venture, from the idea to its potential success or failure. It demonstrates that in early stage of new entrepreneurship ventures, networking is an independent variable aimed to identify relationships inside the ecosystem. Also, it can be useful to explore and successfully bring the solution on the market. In later stage start-ups networking is a variable that depends on learning and aims to exploit business opportunities in the market improving commercial performances.

The theory of value proposition design in new entrepreneurship (Teece, 2010; Osterwalder, et al. 2014) is confirmed too. It explains that in early stage start-ups value proposition is an outcome of learning, whilst it decreases its positive impact in later stage ones.

The paper also discovers that a shared strategic consensus (Knight et al. 1999) or a shared strategic cognition (Ensley and Pearce, 2001) is an outcome of learning in business accelerator ecosystem that requires longer time to be achieved and is mainly relevant for later stage start-ups.

In the end, it statistically confirms the research theoretical premises related to experiential learning and effectual thinking (Gemmell and Kolb, 2013; Sarasvathy, 2001; 2005).

The study also represents a theoretical contribution on the effectiveness of innovator's DNA model adoption in business acceleration contexts and it is able to give a managerial contribution to improve acceleration mechanisms for

strategic innovation of new entrepreneurial teams, suggesting a differentiating relevance of discovery skills for early and later stage start-ups evolution.

In the case of Cantone et al., (2016) the single case study approach and the restricted boarders of the business ecosystem analyzed represent one of the limitations of the study, aimed to be overcome in the next future.

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