Moleskine Virtual Cognitive Laboratory:

a digital tool to increase creativity and stimulate innovation

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Abstract

This dissertation aims at identifying some of the benefits that the introduction of a Virtual Cognitive Laboratory might bring to both the company "Moleskine" and its potential users. Built on the data collected through a questionnaire addressing a group of "creative talents", the investigation focuses on two main aspects of the creative process: the individual need to build the knowledge necessary to produce a creative outcome, and the predisposition towards taking part in a community in order to foster knowledge production, acquisition and transfer even further.

The findings, integrated in a conceptual framework, suggest that the creative talents involved in the study inform their creative process in several ways and rely on a variety of sources that go beyond the boundaries of their specific filed of practice. Moreover, the results show that they look at interactions between one another in a positive way. Overall, this study represents a preliminary investigation providing positive signals on which to build further research in future.

Keywords: Creativity, Innovation, Digital tools, Ideas Generation, Community

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1 Introduction

1.1 A case study: “Moleskine”

“Moleskine” was created in 1997 to address a new class of creative people, “The New Nomads”, namely, young and educated professionals combining business and personal interests with travel. Besides the iconic black notebooks and journals, nowadays the company offers a vast portfolio of products and services, such as analog and digital notebooks and stationeries as well as applications for smartphones and tablets (Raffaelli et al., 2017). Moreover, Moleskine brand is supported by worldwide communities of enthusiasts who write, sketch, paint and draw on Moleskine notebooks and then upload their work on online websites, blogs or social media platforms (Moleskine Company Website, 2017). Besides the product offering, the company has decided to create “mymoleskine.com” as a proprietary platform enabling creative enthusiasts to view, upload, share material as well as comment sketches, videos and templates created by other mymoleksine.com users. Moreover, the platform gives the users the possibility to rate drawings and follow artists. This shows Moleskine’s unique willingness of supporting users in their creative journey (Moleskine Company Website, 2017).

The next sections present the changes that Moleskine has been undergoing along the years in order to keep pace with emerging needs of their users.

1.1.1 From Milan to a global distribution

It was “Modo&Modo”, a small Milanese publishing house that imported stationery products throughout the Italian wholesale market, that in 1997 brought back to life the black handmade notebooks called “Moleskines”, inspired by the oil-clothed cardboards used in Paris by artists such as Vincent van Gogh, Pablo Picasso, Ernest Hemingway and many others. Today, Moleskine reflects the same design that was created by that time: a 'traditional' black notebook with rounded corners and ivory-colored paper. An elastic band is used to open and close it, a ribbon bookmark is included to sign the pages, and the notebook disposes also of an expandable pocket inside the rear cover.

In order to align with the company’s value proposition, namely “to create tools for creative minds”, one year after the launch of the today-iconic black notebooks, the publisher Modo&Modo offered the notebooks in three forms: rule, square and pocket size

in order to suit each individual's personal form of expression. This followed two strategic choices (Raffaelli et al., 2017).:

1. retaining the handmade details of the original French manufacturers which were very appreciated not only by the targeted segments but also by unintended audiences such as *design engineering* students and *technology entrepreneurs* in USA. Reasonably "this was due to the fact that Moleskine's shape made the notebooks aesthetically complementary to digital tools" (Raffaelli, 2017).Reasonably "this was due to the fact that Moleskine's shape made the notebooks aesthetically complementary to digital tools".
2. distributing the product in Feltrinelli bookstores, comparable in size to Barnes & Nobles in the USA, rather than in stationary stores in order to target *young customer*s in need of a peaceful corner where to sit, read and eventually write on their notebooks.

In the early 2000s the company had already managed to foster brand awareness by partnering with local artists, writers, photographers, distributors, vendors and suppliers. However, this required a reconfiguration of the firm from both a logistical and strategic perspective. In order to reduce the costs, the founders moved the production to China to a high-quality paper products manufacturer with the ability to mass produce. However, they were determined to keep the price consistent with their value proposition regardless of the introduction of similar but cheaper notebooks by the competition. Therefore, it was required *"not to enter into the mainstream but remaining a cultural icon, more than a luxury premium brand and seeking inclusiveness over exclusiveness"*(Raffaelli, 2017). However, the entries in the market of new rivals started to deteriorate the company market share, and to become and keep competitive new capabilities were required. In order to acquire them more capital was needed, that is when in 2006, Syntegra Capital acquired 75% of Modo&Modo and a new CEO, Arrigo Berni, was instructed to expand quickly the scope of the firm (Raffaelli et al., 2017).

Under Berni's direction the company expanded to the point that today Moleskine Group includes Moleskine America, Inc. (established in 2008); Moleskine Asia Ltd (2011), which controls Moleskine Shanghai and Moleskine Singapore; Moleskine France (2013) and Moleskine Germany (2013). The product portfolio is composed of over 600 offerings on the base of new product classes such as the Writing, travelling and reading collection, for instance (Raffaelli et al., 2017). New distribution channels were introduced: an e-

commerce initiative in 2006 to capitalize on increasing web presence; Moleskine Stores in China and Italy (2011); B2B partnerships to custom corporate gifts and promotional goods and Moleskine Cafes to aggregate the New Nomads and the creative minds in the same place. Currently Moleskine distributes its products in approximately 105 countries through a network of book, department, specialty, and stationery stores as well as museums through a retail network of 30 directly-operated stores, including 9 in China, 12 in Italy, 2 in the United Kingdom, 2 in France, and 5 in the United States (Moleskine Company Website, 2017).

1.1.2 Digital expansion as a challenge

The most relevant challenge for Moleskine nowadays, however, concerns the digital expansion. In fact, the company has discovered over time that Moleskine's consumers see their analog notebooks and online technologies as complementary tools necessary to undertake their creative process. This is also why, in 2011, the company hired Peter Jensen, ex Senior Director of Digital Development of Lego, with the purpose of transforming Moleskine into an open platform for creativity (Smith, 2015).

Thanks to the digital strategy undertaken by the company in the last 6 years, today Moleskine collocates itself in the global Stationery Industry by integrating digital device accessories, smart-writing tools, smart notebooks and apps besides the vast family of paper objects, bags, books to the product portfolio. This has been possible by keeping the brand offerings aligned with the value proposition of the company, by increasing the customer proximity through higher control over outsourcing ensuring consistency, and by facilitating content migration from the analog to the digital world. In order to sustain such expansion strategy, in 2013, the company decided to go public and became listed on the Italian Stock Exchange with an IPO of 2.3 euros per share (Raffaelli et al., 2017).

Unfortunately, in 2015 the prices dipped below 1.5 euros per share but its continuous introduction of new digital tools integrating the analog ones kept the interest of potential buyers alive: 41% of the shared were acquired by D'Ieteren, a Belgian family-owned automobile group at the end of 2016. The 100% acquisition was completed in 2017 so that to date the company is delisted from Milan Stock Exchange (Raffaelli et al., 2017).

1.1.3 Current Digital Strategy

Moleskine's current digital strategy is based on three key pillars.

1. The *integration between analog and digital products* along the so-called analog-to-digital continuum, which means supporting all the steps of the creative process from ideation to implementation. This will be possible through the integration of both physical and digital products in a path that resembles a cycle: the user will be able to go back and forth from the analog to the digital environment. This has given birth to the product category Moleskine +.
2. The *creation of utility, functional and contextual applications* to support the new generation of products that reflect the feature expressed in point 1).
3. Performing *services that enable the user journey* in the cyclic path expressed in point 1) and improve the individual creative journey.

With these three concepts in mind, Moleskine has developed various products and services throughout the years (Jensen, 2017).

1.1.3.1 Digital strategy through physical products and digital services

After 2012, a series of incremental innovations has been introduced in order to improve the consumers' analog-to-digital journey:

In 2013 *Moleskine* Photo-Books and Photo-albums were introduced to allow digital users to upload their pictures online and create sequences of their own pictures to design their very personal photos collection on the guidelines and style of Moleskine. In 2015 Moleskine Time-page was introduced, a smart calendar that combines events, maps, contacts and weather into an app, combining the existing calendars synced to the smartphone and combining them under the same UX design which of course reflects the analog Moleskine's design. The same year, the "The Livescribe Notebook" was launched which, by relying on Bluetooth technology of the Livescribe 3 Smartpen and dot paper, allows content produced analogically to instantly appear in the app in real time. The notebook features the iconic Moleskine design details and its paper is standard paper with printed microdots on its surface. These dots are nearly invisible to the human eye, however, a smartpen can easily see these and use them to know which page the user is writing on and the exact location on that page. To perform its many operations, the Livescribe™ dot paper should be used together with the Livescribe smartpen (Raffaelli et al., 2017).

The evolution of such ultimate innovations can be found in the so called "Smart Writing Set", launched in 2016 and composed by a dotted layout Paper Tablet, a smart-pen

"Pen+" and Moleskine Notes app. Similar to the Livescribe technology, Ncoded paper technology allows Moleskine's Pen+ to recognize exactly where it is in the Paper Tablet and capture each stroke. The Moleskine Notes app then smoothly transfers words and drawings from page to screen in real time, so that the user can digitize text, edit, organize, share and bring content to life. The Smart Writing Set is compatible with all other Moleskine Paper Tablets and the Smart Diary/Planner. Moreover in 2016 the company introduced analog products inspired by the digital world:

My cloud: a writing, traveling and reading collection for the new nomads' mobility. Bags and wallets resembling notebooks and reflecting the iconic design elements of the brand. The name and the style were inspired by the digital cloud.

Myanalogcloud: an online game to personalize Moleskine's products and generate a digital profile to be matched with other users' profile on the bases of shared interests and tastes.

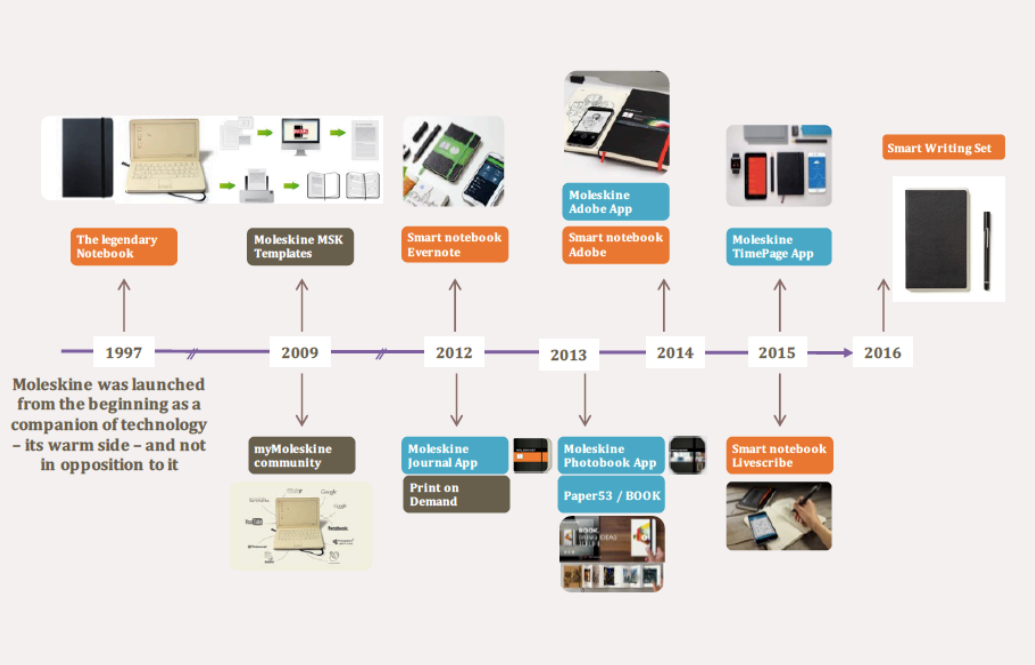

Figure 1. Moleskine Products Offering (Jensen, 2017).

1.1.3.2 Digital strategy through partnerships

Moleskine tries to deliver value to its consumers through partnerships aimed at empowering consumers in their creative and identity creation processes. In a special marketing event held in 2013, Moleskine has partnered together with *Spotify*. During this event, the 10 best hobby artists had the chance to design the album cover of the 10 most

played songs on Spotify. As a result of this event, the tracks got played more than 200.000 times and 8 of the 10 designers got offered professional contracts.

In 2013, the company started a partnership with *Paper53* and together they gave digital creative talents the opportunity to bringing their ideas to life with a custom-printed Book by Moleskine, created right from the digital sketches made on Paper53 app.

A year later the company started a joint-venture with Adobe to create *The Moleskine Smart Sketch Album*, Creative Cloud connected, which would let the user to instantly turn hand-drawn sketches into fully workable digital files on the Adobe Creative Cloud app. The cloud obtained 500000 subscribers by the end of the year (Raffaelli et al, 2017).

Moleskine collaborated also with Etsy. Thanks to this partnership, creative Moleskine users could upload and sell their sketches as Moleskine notebooks covers on the Etsy platform.

Moreover, in 2012 thanks to the collaboration with Evernote, a Californian company that develops digital applications for personal productivity, Moleskine managed to implement another way of transferring the analog notes to a digital cloud. Moleskine Evernote+ users had a new opportunity to upload their handwritten notes to their portable devices and organize these in folders by simply using hashtags. Evernote+ makes these notes searchable and accessible across different devices anywhere at any time. The introduction of such co-branded product was matched with the Moleskine Journal app and the possibility to print on demand.

1.1.3.3 Digital Strategy based on brand communities & customer engagement

One major factor of Moleskine's success has been the ability to exploit the support of products' enthusiasts which can be addressed as a real worldwide community (Raffaelli et al.2017). In order to provide Moleskine's consumers with a common ground, in 2009 the company created a platform called *mymoleskine.com*. In this community participants can create a profile, upload their sketches and get rated by other users. The platform reflects the initial spirit and provides its members with new ways of interacting with each other. Furthermore, it is showcasing their work and sharing their creations far and beyond the boundaries of the community. An important goal for Moleskine in its brand communities and customer engagement process is to support users and potential customers in expanding their knowledge, creativity and individual expression. Besides that, Moleskine

Marketplace is an opportunity for artists who are part of the mymoleskine.com community to create a notebook cover and sell it via the marketplace platform. By this, artist can promote their creative skills, drive traffic to their website and earn money. The Moleskine brand benefits by these co-creation processes through increased engagement (Moleskine Company Website, 2017).

1.2 Problem Formulation

1.2.1 Moleskine's potential to impact new idea generation

We are in an era where the increased use of digital technology is allowing companies to tailor their offering even to the level of each single individual' taste (Baines, 2009). In fact, today more than ever, companies are adopting innovative ways to gather insights into consumers tastes such as the monitoring, screening and retrieval of the digital traces left by users of the internet and the digital devices to access it. All of this might be used for a deeper understanding of the customer context, which is required in order to develop a successful value proposition. Ultimately, then, digital technologies can help companies develop a closer customer relationship, which is critical for competitiveness (Baines, 2009).

Moleskine's products address any type of creative mind, from those who use only analogic tools to those who want to transpose their creative outputs into a digital environment, which is why its iconic notebooks are used to collect ideas in form of sketches and written notes. In fact, Moleskine has tried to follow the shift of consumers' preferences towards digital tools by developing mymoleskine.com and digital devices such as the Smart writing set. However, it can be stated that the distance between the company and its customers could be further reduced, by finding a digital solution which addresses creative talents' needs at an individual level as much as their desire to network, namely, a solution concerned also with aggregated needs at the level of a community.

Specifically concerning creative talents' individual needs, if we think of the creative process as made of different phases, as proposed by Howard et al. (2008), it can be argued that Moleskine's notebooks represent the medium through which abstract thoughts and ideas are made tangible on paper. But what about how creative talents have come to reach those thoughts and ideas in the first place? Is it possible for the company to be of any help to its users also in that case?

Mayer (2011) states that one of the hardest challenge for creative talents is the generation of new ideas since it involves gathering and making decisions about readily-available information. In other words, it represents the "challenge of seeing clearly and thinking sensibly". However, seeing clearly and thinking sensibly seems even harder nowadays than before given that with new IT systems, the development and the sharing of information and experiences have gotten easier and almost costless, allowing also non-expert to have access and to contribute to an overwhelming amount of online information

(Heintz, 2008). As a consequence, for the majority of creative talents, the retrieval of information has turned into time consuming and not very effective process since information are too superficial and too broadly distributed to be valuable and useful to give inspiration (Kim et al., 2009, Oldham & De Silva, 2015).

Specifically concerning creative talents' needs to network, it could be argued that through the years Moleskine has managed to build a community of enthusiasts emotionally attached to its products (see Section 1.1.3.1). Nevertheless, we argue that the company needs to investigate more about creative talents' need of networking in order to enhance an already well-established brand community around the products.

1.3 Research question

Arguably, by considering the possibility to support the creative process from the very beginning, namely by providing a service that helps users to collect and organize the information necessary to generating new ideas, Moleskine could not only enhance the creative process but also inform it, becoming even more meaningful to its users.

Ideally, we argue that Moleskine should set a system to help creative users generate creative outputs faster and more efficiently. At the same time, such a solution would benefit the company providing them with a new opportunity to keep pace with the new trends. Specifically, the system should support creative talents in the collection of inspiring material useful for their phase of idea generation as much as allowing them to network. This also considering the fact that, arguably manufacturers in the stationery industry have been more prone to provide tools support ideas implementation, whereas a new focus on ideas generation might let the company discover an unexplored market segment.

Specifically, we suggest the mise en place of a virtual cognitive laboratory addressing information storage and categorization. Overall in fact, the primary goal of this dissertation is to answer the following research question:

How an organized and structured system of information collection and storage through digital technology could help Moleskine support the ideas generation phase?

In order to answer this question, we need to dig into the potential benefits that such a system might have on creative users one side and for Moleskine on the other. Therefore, we first wonder:

1. *How creative talents inform their creative process and nourish their inspiration to generate new ideas?*

2. Would a virtual cognitive Laboratory be valuable for creative users? (a)

Does the Virtual Cognitive Lab represent an opportunity for Moleskine? (b)

3. *Which factors might prevent the adoption of such a system?*

2 A literature review: Creativity, Technology and Knowledge

As expressed in the introduction to this dissertation, the focus of our investigation is on the potential of digital technologies to impact the creative process from its early stage, specifically addressing the issue of how the phase of ideas generation might be supported with digital tools. This field of investigation arguably involves research about how *creativity, knowledge and technology* are related to each other. Such interrelation has proved as fundamental since the very first attempt of humankind to reach any of its scopes. *Creativity* in fact, is commonly described as the action of putting *knowledge* and experience to use in order to develop new ideas and, as such, it is the mother of all inventions and innovations (Amabile, 2005). *Technology*, in turn, involves the basic function of expanding the realm of practical human possibilities (Hannay & Mcginn, 1980). Nevertheless, the literature addressing how creativity, technology and knowledge interrelate is vast and, although embracing different realms, it largely builds up the groundwork for managing Innovation.

For the purposes of our investigation, nonetheless, we need to narrow the topic down to how *digital technologies,* specifically, might contribute to *shape the knowledge necessary to develop new ideas.* In this respect, Broadhurst & Price (2017) noticed that "technical experimentation has always posited some challenges to human creativity, not least of which is a fundamental questioning of the former's usefulness in enhancing the latter". However, it can be generally stated that, by integrating digital tools in the creative process, our perception of the world is reconfigured, and this is because the "exponential growth of digital technologies is gradually affecting the way we think, reflect ourselves, interact with the world and create" (Broadhurst & Price, 2017). As a consequence, it is almost impossible to avoid relying also on cognitive psychology literature. The next sections illustrate the most relevant findings reached so far in the field of Innovation Management, Cognitive Psychology and Strategic Design (being the latter strongly pertinent for addressing the use of creativity to develop new ideas) in the directions just expressed. Starting from the most relevant research findings of the twentieth century concerning a general understanding of creativity, we then pass to explore the essential linkages between creativity and innovation and between creativity and technology respectively.

2.1 The first half of the twentieth century: creativity as a personal trait or as a form of intelligence?

The first systematic study of creativity was undertaken in 1869 by Galton who, however, focused mainly on the attributes necessary to define a "creative genius". This type of investigation, mostly concerned with the individual traits that might determine creativity, remained prevalent until 1920s, when psychology shifted the focus to the investigation of intelligence, which continued for the whole first half of the twentieth century with philosophical speculation rather than empirical investigation of creativity. Such speculations led to four main traditions: the psychoanalytic tradition positing creativity as central and intrinsic to human nature (with Freud and Winnicott as first exponents); the cognitive tradition focused on the production of ideas and products stemming from Galton and Mednick's theories; the behaviorist tradition and the humanistic tradition (Craft et al., 2001).

It was only in 1950s, with the research about the limitation of intelligence and the investigation of the so called "Divergent Thinking" by Guilford (1950) that a particularly rich period of studies concerning creativity occurred. From that moment on, in fact, several attempts to test and measure creativity started, and such prolific interest led to the development of three major foci: work on personality, cognition, and how to stimulate creativity. However, especially for the first focus, some scholars argued that, although providing important information about the traits of the Creative Person, studies have been too narrow, contradictory and superficial (Craft et al., 2001). Cognition instead took in analysis several different aspects related to creativity, which respectively highlighted its function as unconscious process, as part of Intelligence, as problem-solving capacity, and as an associative process (Craft et al., 2001).

Not only, Ryhammar and Brolin (1999) described creativity in relation to various processes of thought and experience such as the capability of thinking in opposites, analogies and metaphors, intuition, inspiration, mental representation, perceptions, and ultimately problem finding and solving (Craft et al., 2001). It is thanks to this progresses in the field of psychological cognition that two major lines of creativity investigation developed in the second half of the twentieth century: *Psychometrics* which aimed at providing tools to measure creativity but which came under criticism for measuring intelligence-related factors rather than creativity; and *Psychodynamics*, focusing on personality, perception and creativity and of which the main finding is that the creative

person has the ability to make alternative views of reality, has good communication between logic and imagination, has the courage to go against convention by believing in their own ideas and is emotionally involved in their work creation (Anderssson & Ryhammar, 1998).

Research carried on during 1980s and 1990s shifted the emphasis away from measurable outcomes-based and product-linked approaches (such as those developed by Torrance in 1960s and 1970s) to the point that in 1993 Gardner decided to focus mainly on understanding the creative mind in term of intelligence held by people considered to be representative of certain creative fields (Craft et al., 2001).

2.2 The second half of the twentieth century: creativity and social systems

In 1980s and 1990s, creativity started to be framed by social psychology. Ryhammar and Brolin (1999), for instance, identified the importance of social structures in fostering individual creativity and their findings acquired credits to the point that creativity and social systems became an additional area of study, given that various elements of social and cognitive context were seen as highly relevant to the activity of creating (Craft et al., 2001). Among the ecosystems taken in analysis, organizations seemed to provide a complex scenario were creativity could be observed and attempts of measure could be performed. In this respect, for instance, the studies carried on by Amabile in USA and by Ekvall in Europe suggested that in a creative climate the participants in organizations are more creative overall if specific conditions are met. Thanks to Amabile's studies (1988) the role of the context has been increasingly emphasized since the early 1990s, and a new line stemming from systems theory, where environmental conditions were taken into account, developed. Not only, during 1990s, due to the development of the approach from social psychology, research into creativity became more comprehensive, and it began to focus more on the creativity of ordinary people (Craft et al., 2001).

From 1990s on, several studies have been carried on about the sources of individual creativity, but it is the field of cognitive psychology which has reached the most articulated perspectives. This focuses mainly on the cognitive aspects involved in creativity, as well as on the individual traits and characteristics of creative people, and how these traits are influenced by the social environment. Notably, we find the most relevant insights, for what concerns our analysis, in Teresa Amabile's studies, whose theories coalesce on *knowledg*e

and expertise, *creative thinking* and *motivation* as the three factors that most influence creativity (Amabile, 1988; Amabile 2005).

In fact, *knowledge* is intended as all relevant information that an individual considers as attached to a problem. In this regard, interestingly, Howard Gardner distinguished between two different types of knowledge: in-depth experience and long-term memory allowing people to build the technical expertise that can serve as a foundation for creativity within any domain on one hand, and the ability to combine disparate elements in new ways on the other hand. This in turn implies a need for a broader focus, spanning across several domains also, and varied interests (Craft et al., 2001).

As the second factor, both Amabile and Gardner identified *creative thinking* as a key aspect of creative process, characterized by the ability to disagree with others but at the same time finding solutions in order to make information and perspectives apparently opposite converge. Moreover, in both scholars' opinion, creative thinking makes individuals capable of combining knowledge from disparate fields (Amabile, 1988; Amabile 2005). Similarly, Werthermeier in 1959 suggested that productive thinking arises when the thinker grasps the essential features of a problem and their relationship to a final solution (Craft et al., 2001). This is confirmed also by literature in the field of innovation management, which assumes that creativity is at the forefront of the problem-solving process that might lead to innovative outcomes (Schilling, 2017). Others, such as Koestler in 1964, proposed that creativity involves the connection of two or more unrelated *matrices of thoughts* to produce new insights or invention. More recently, studies carried on by the National Research Council in USA (2003), reinforced this conception claiming that a creative act starts with challenging previous assumptions. Namely, through a critical comparison of different contexts at odds, new fresh ways to frame existing issues are opened up, giving new room for more creative solutions. This is to prove that many scholars, although framing the issue with different assumptions, seem to agree on the fact that the generation of a creative output involve both cognition of the reality and thinking.

Lastly, *motivation* intended as curiosity and intrinsic interest seems to be the primary reason behind individuals' willingness to undertake the creative process, rather than external pressure, and the main thrust triggering satisfaction once a creative task is completed.

2.3 The social environment as a fourth factor influencing creativity

In her studies, Amabile discovered also that the social environment can influence both the level and the frequency of creative behavior and that it might impact the creative outcome more than the mere individual traits of the creative person, as contrarily supported by the traditional psychological approach (Barron 1955). These discoveries proved to be very relevant especially for companies interested in leveraging the creative skills of their employees. In fact, individual creativity within organizations can be extremely valuable for solving any kind of problem, from managerial issues to product development (Schilling, 2017). Arguably, this linkage between creativity and the ability to solve problems has become central in the field of business management, to the point that creativity has come to be defined as the successful implementation of creative ideas, especially for commercial purposes. Moreover, given that all innovations begin with creative ideas (although not being sufficient condition for it), creativity has become central also in the literature of Innovation Management (Schilling, 2017). Indeed, particularly in engineering and technology-based industries, creativity represents the trigger to technical innovations, which eventually results in commercially successful products, improvements to the quality of life and generation of income streams through intellectual property licensing (National Research Council et al., 2003)

In 1988 Amabile et al. developed a framework to assess the dimensions that have a role in determining creativity in work environments. In fact, the scholars believed that creativity needs to be observed in its psychological context, namely, the "environment perceptions that can influence the creative work, since these can impact the motivation to generate new ideas" (Craft et al., 2001). Analogously, in their study Oldham and De Silva (2015) proposed three critical conditions to motivate the generation of creative ideas and two of those are related to the interaction of the employee with the workplace. Specifically, according to Oldham and De Silva (2015), a high degree of employee engagement with the work environment and the socioemotional or instrumental support perceived (i.e. provision of resources, help to overcome obstacles) can positively stimulate the development of more creative ideas. This demonstrates also how, in the effort of digging in deep to find the factors stimulating new ideas generation as well as creativity and innovation overall, the psychological aspects and the related cognitive psychology literature should not be neglected.

Although influences on work environment perceptions can arise at several different levels within an organization, in her studies Amabile focused on individual perceptions and the influence of those perceptions on the creativity of their work, in fact, it is "the psychological meaning of environmental events that largely influences creative behavior" (Amabile, 1988). From Amabile's discoveries on, research has focused mainly on creativity in organizational contexts (Craft et al., 2001). In 1993, Woodman and Sawyer studied how external influences and intra-organizational influences might affect creative behavior, too. In their model, in fact, creative behavior within organizations is a function of two dimensions: work environments inputs groups, such as norms, group cohesiveness, size, diversity, roles, etc. and organizational characteristics, such as organizational culture, resources, rewards, strategy and focus on technology.

2.4 The interaction between social environment and personality

Already in 1983, while investigating the social psychology of creativity, Amabile realized that, despite the importance of social and environmental influences on creative performance, a social psychology of creativity was yet to be developed (Craft et al., 2001). In fact, research had traditionally focused more on a personality approach and to a lesser extent on a cognitive-abilities approach, namely, a perspective more specifically describing the ways in which cognitive abilities, personal characteristics and social factors might contribute to different stages of the creative process. More precisely what Amabile considered the most relevant aspect being neglected was the interaction of social-environmental factors with personality characteristics and cognitive abilities and the consequences that such factors could have on observable creativity (Craft et al., 2001). As a matter of fact, by digging in deep in a bibliography of psychological studies carried on between 1566 and 1974, she realized that the topic of creativity was largely overlooked and also that between 1975 and 1980 "there were barely half a dozen of articles in the journal of personality and social psychology that dealt in some way with the social psychology of creativity" (Craft et al., 2001).

Hence, she decided to extend the research about how the interrelation between personal traits and the surrounding environment can affect creativity, assuming that a social-psychological research could provide a more comprehensive understanding of the creative process. From here, arguably, Innovation Management and organizational

behavior disciplines have started to address the issue of how to support creativity within organizations and also whether or not entrepreneurship could be seen as a form of creativity (Schilling, 2017).

2.5 When creativity meets innovation

Initially creativity and innovation were considered as separate research field. Indeed, whereas creativity was mostly studied by psychologist, innovation was one of the main topic investigated by economists (Legrenzi, 2005). However, in 1998, in the Journal of knowledge management, Gurteen defined creativity as "the process of generating ideas" whilst innovation as "the implementation of those ideas". Given these definitions, it seemed not possible anymore to consider the two processes as independent from one another, but instead it appeared clear that according to Gurteen (1998) innovation is a continuum of creativity: there is no innovation without generation of ideas.

In 2003, a study carried out by the American National Research Council et al. introduced a further distinction between what they called: economic and cultural creativity. Starting by the assumption that entrepreneurship consists on "bringing together ideas, talent and capital in innovative ways", it identified the entrepreneur as a manifestation of the economic creativity. Conversely, art and design were considered as the manifestation of the cultural creativity. Specifically, the study recognized the interaction of the two as to be an important element of the so called *Creative Industries.* In its report the U.K. Creative Industries Taskforce (1998), defined Creative Industries as "those industries which have their origin in individual creativity, skill and talent and which have the potential for wealth and job creation through the generation and exploitation of intellectual property". Hence, whereas entrepreneurs develop new innovative ways to produce and distribute creative products, creativity productions required the support of business and institution to be developed and to be brought into the market (e.g. new distribution channels such as museums or art and design schools) (National Research Council et al., 2003).

Furthermore, the American National Research Council et al. (2003) identified two additional creative domains: scientific and technological, and it was observed that the interrelation among the four domains (scientific, technological, economic and cultural) might reciprocally nourish creativity and support the implementation of creative ideas. Namely, the invention of new technologies may burst artistic and design creativity while outcomes from artists and designers may boost technological innovation and/or shape

direction for technological investigation. Analogously, scientific discoveries can drive new technological invention and vice versa (National Research Council et al., 2003).

2.5.1 Design driven innovation: radical innovations as the outcome of creativity

If we consider the multiple forms that technological innovation may take, creative talents are responsible for harnessing its potential to change. If we think of the specific case of designers, for instance, it can be stated that their work ensures that we are able to take advantage of new technologies, rather than be overwhelmed by them. As a matter of fact, The American National Research Council et al. (2003), defined *innovative design* as the outcome of the intersection between *technologically* and *culturally creative* practices. for instance, companies such as Apple and Audi have been able to differentiate themselves through the combination of innovative technological functionalities with aesthetically creative features. Indeed, whereas often the role of the designer is thought to be only related to the "aesthetic content" of a product, it is important to consider that design is the "integrated innovation of function and form" (Verganti, 2003) and, more in particular, the designer is the one in charge to give new meaning to things and deliver new experiences. Indeed, many products do not aim just at satisfying customers' operative needs, but also at transmitting emotional and symbolic value that go beyond the style itself (Verganti, 2003). For all these reasons, according to Verganti (2003) *creativity can be integrated in companies' innovation strategy* creating Radical design-driven innovation. i.e. innovation in which the novelty of a message and of a design language prevails over the novelty of functionality and technology.

2.5.2 The design of innovative ideas

Given their role as "proposers of new meanings", in order to be successful, designers need to have a deep knowledge about socio-cultural models and product semantics in different social and industry setting (Verganti, 2003). Indeed, this kind of innovative process requires a different approach with customers. Designers try to anticipate visions of possible futures, and then they *propose* them to consumers in their products. With this regard, since people cannot give insights about needs that they don't know to have, traditional market researches are useless. Hence, designers must have the capability to "understand, anticipate and influence the emergence of new product meanings" (Verganti, 2003). Nevertheless, if users' insights cannot be taken as a starting point, the understanding of the evolution of sociocultural models is fundamental. According to Verganti (2008), sociological scenarios

are tacit and are not codified in books, rather knowledge is distributed, and specifically design-driven innovation is the result of a networked research process. Indeed, actors from different fields share same problems (e.g. understand people lifestyle) and thus they adopt different approaches to find their solution. If these perspectives are shared, they can contribute to fill gaps and dictate future trends (Verganti, 2008). Additionally, since design-driven innovation neither starts form the analysis of users' needs nor it is the results of scientific and technological research, it differs from the traditional market-pull and technological-push innovation. As above mentioned, it is about the comprehension of subtle and unspoken dynamic (Verganti, 2011). However, through the combination of technology-driven and design-driven innovation, Verganti (2011) identifies a new reason to why innovation should be kept open. Indeed, given the possibility to provide different applications and thus arise different experiences with the same technology, "the main challenge for managers, is shifting from being the first in launching a new technology to be the first in finding the right application of technological opportunities". Hence, open innovation would allow to have access to more abundant opportunities, and thus better satisfy the market (Verganti, 2011).

2.6 Creativity and knowledge

Song et al. (2005 and 2006), argued that "knowledge possessed by individuals is of vital importance to the creative work". To this, Elsbach and Kramer (2003) added that "accurate and detailed knowledge regarding the creative task or innovation prototypes will be able to determine which attributes to emphasize (or downplay) in creative activities" (Zhang et al., 2015).

Research carried out by Zhang et al. (2015), moreover, discovered that the more knowledge stock relevant to a creative task is available in a team through its members, "the more sufficient cognitive resources are available" in order to solve a problem and complete the task.

Not to mention Tiwana & McLean (2003), who believed that the more knowledge stock is available within a team, the better the ability of it to "recombine", transfer and modify, knowledge to generate a greater number of ideas. But even extending the discussion outside of the borders of organizations and team working, we can notice how, for instance, in science and mathematics, the most fundamental outcome of creative intellectual effort is important new knowledge (National Research Council et al., 2003). However, in science and mathematics as well as in art, design and in any other fields, in

order to be able to elaborate and express thoughts that would eventually lead to new creative and innovative outcomes, individuals need to have a knowledge base from where starting their thinking process (National Research Council et al., 2003). As a matter of fact, Gurteen (1998) defined innovation as putting generated ideas into action. Nonetheless, he also claimed that it is not a straightforward process but rather it involves convergent thinking, namely, sifting, refining and critically implement the ideas. Therefore, in order to do that, existing knowledge should be applied and appropriate new one developed (Gurteen, 1998). Additionally, the scholar emphasized the importance of know-why in relation to know-how, and how the former represents the key to be creative. Indeed, knowing why a certain phenomenon occurs, allows to re-invent or invent new solution that lead to similar outcomes, and thus it allows to re-build or build new know-how (Gurteen, 1998).

Analogously, Boden (2001) stated that rich and structured knowledge is the catalyst of creative thinking. More specifically, she described this relation through the exemplification of three different types of creative thinking: combinational, exploratory and transformational. According to Boden (2001), in order to develop each of these thinking, different kind of knowledge is needed. Namely, the *combinational creativity* consists on the combination of old ideas in unfamiliar ways. Hence, the more diverse the knowledge base is, the richer would be the source from where to combine ideas in new creative ways. On the contrary, *exploratory creativity* is about generating new ideas by the exploration of a concept. Through the exploration, it would be possible to identify the most relevant rules governing the conceptual space and use them as requirements for new domains. Lastly, *transformational creativity* consists on the transformation of these rules in order to generate new kind of ideas. For instance, "Tete de Femme" shows how Picasso change the conceptual space to express his creativity (Picasso, 1962).

2.7 Creativity and technology

2.7.1 Technology and information sources

The first and more tangible impact of technology in the process of creativity has been associated with the way how professionals and non, look up for information and/or take inspiration. As a matter of fact, Heintz (2006) claimed that before the advent of information technologies, the only way to have access to valuable knowledge was through libraries or conversations with high experienced people. Nowadays, the World Wide Web and other

online services have sharply facilitated this step giving the possibility to anyone to have broad access to unlimited information domains. According to Oldham & De silva (2015), who studied the impact of digital technology in the generation and implementation of creative ideas in the workplace, the exposure to new, broad and unique information enhance creativity by "energizing the combinatory processes" namely, the combination of diverse information that will eventually result in the production of creative ideas.

Furthermore, studies by the American National Research Council (2003) recognized that information technology is a fundamental contributor in the creation of creative activities clusters. Indeed, if previously the geographic position represented a critical condition for the transfer of information and for making interaction among experts possible, nowadays, communication among people in different fields and geographically distant has got easier. In this way, thanks to these *global* talent pools, individuals can have their creativity stimulated by having a broad access to cross-domains knowledge (National Research Council et al., 2003).

Additionally, in their study the American National Research Council et al. (2003) claimed that "information technology is, by its very nature, a powerful amplifier of creative practices". This statement has been grounded on the observation of softwares' main features: the possibility to be copied, and the fact that they can be used by an unlimited number of users. Because of these, IT have a strong impact on the innovation process; it can ignite users' inspiration giving them the possibility to build completely new solutions through the creative recombination of already existing functionalities (National Research Council et al., 2003).

However, critically reading the literatures, we realized that all of them emphasize a main drawback. As a matter of fact, despite the positive contribution that information systems can give to the idea generation phase, the access to such a large number of channels and volume of information might lead to the completely opposite outcome: hinder the creative process. Specifically, the screening, sorting and evaluation activities required to assess the reliability and the value of the overwhelming amount of information available, would potentially waste the time to be creative (Oldham & De silva, 2015, Heintz, 2008, National Research Council et al., 2003).

2.7.2 Technology as failures facilitator

"Fail fast, Fail Cheaply"

Nowadays, the Lean process and design thinking are becoming the new standards within organizations approaches introducing a new important perspective in the development of new products/services. Both share the same idea that failing is the fundamental step to success: the faster you fail the more impactful your solutions will get. However, in order to fail quickly, the cost and time required to do so should be equal to zero, and here is where technology has been accredited to have a crucial role. On this topic, through his analysis concerning how technology can foster creativity, Satell (2014) observed that in the past analog world, any failure was paid at a high price. Namely, due to the large resources needed for the modelling and prototyping phase, errors were associated with frustration, tiresomeness and waste of money (Satell, 2014). On the contrary, Austin (2016) noticed that in the digital era, thanks to software and other technological tools, potential market solutions can be cheaply prototyped and tested, facilitating and speeding up the iteration process (i.e. the action of trying, modifying and improving products' features). Lê et al. (2013) strengthened this perspective by stating that since ideas are embodied in specific artefacts (e.g., prototypes, lines of code, pieces of software) digital technology can be defined as the tool through which creativity takes shape and, "thanks to its plasticity it allows last minute changes". As a consequence, there is a way higher likelihood to produce something truly outstanding than before (Satell, 2014).

2.7.3 Technology opening up to new opportunities

Very often, the role of technology in the creative process tend to be related mainly to its technical functionalities, as instruments to facilitate and automate traditional activities (e.g. search of information and prototyping) (Satell, 2014). Specifically, since many tasks are now automated, people are not required to dedicate a lot of effort in basic manual activities, resulting to have more time to engage in experiences that lead to greater creativity (Satell, 2014). However, according to Lê et al., (2013) technology is more than that. Namely, new technologies can be source of inspiration for their "materiality", opening up to new opportunities. In their paper, Lê et al., (2013) claim that individuals have the possibility to *"build their ideas from technical innovation"*. For instance, if it wasn't for the development of the pianoforte, Beethoven would have probably never had the chance to unleash his creativity (Peterson & Anand, 2004). Analogously, new technologies that give the

opportunity to amplify, manipulate and transmit sounds, has radically transformed the way of playing music; in the 20th century, electronic music has become very popular and it has slowly taken over traditional music (Peterson and Anand, 2004).

Similarly, to the Lê et al. perspective, the study by the American National Research Council et al. (2003) discovered that Information Technologies has yield impressive results in providing "a whole new field of creative practice", but very often people lack of grasping the true potential of them. Generally, indeed, IT is conceived merely as a product to be consumed. Namely, as mentioned above, consumers buy software or hardware in order to better and easier carry out activities or processes. Despite this could still be considered of relevant aid to the creative process, however, in this way professionals and artists would exploit just a limited value of what these technologies can offer. With this regard, studies by the National Research Council in USA (2003) suggested that the relation between users and software designers should be of collaboration. Such tools should be subjected of critical reflection through what they can be improved to better support art and design, and to further stimulate creativity through the possibility to challenge presuppositions on what they are build. Specifically, "as the engagement of IT helps shape the development of inventive and creative practices, so also can inventive and creative practice positively influence the development of IT" resulting in developing even more innovative solutions (National Research Council et al., 2003).

Furthermore, Rubin (2012) analyzed the impact of digital technology in the very beginning of youngers' learning process, and he realized that digital tools stimulate parts of the brain that usually are not stimulated through traditional reading. Specifically, he concluded that digital exposure can expand creative possibility because it is positively related with sparks, epiphanies and the potential to come up with innovative ways to connect old ideas.

2.8 How creativity, technology and knowledge interrelate

As stated by Wegerif (2002) the use of new technologies is often linked to the development of thinking skills, namely those "processes of thinking and learning that can be applied in a wide range of real-life contexts, and include information-processing, reasoning, enquiry, creative thinking and evaluation". This belief relies on the assumption that people do not think entirely on their own, there are often tools and tool-systems to help them, from words within a language, a notepad, a pencil or a computer network. Among people' thinking skills there are also the so called "creative skills", intended by Wegerif (2002) as the ability "to generate and extend ideas, to suggest hypothesis, to apply imagination, to look for alternative innovative outcomes". Nonetheless, arguably, such creative skills are supported by the others starting from information-processing skills to the ability to evaluate information to judge the value of what read, and to develop criteria for judging own and others' ideas and to have confidence in their judgments (Wegerif, 2002). In fact, as philosopher Richard Paul argued (2006), "for strong critical thinking it is important to question one's own assumptions through thinking from the perspectives of others". This is why several scholars nowadays believe that thinking is both individual and social and that *social thinking* is constantly internalized into individual thinking and the latter externalized into the former (Wegerif, 2002). Especially from the advent of the internet on, it is technology to carry the external social part of the *movement of thought*, but what if a tool enabling to rationalize the internal movement and the external movement simultaneously existed?

In a new economy, in which the main products are information and knowledge rather than material goods, both the academia and organizations believe that workers require transferable thinking skills more than content knowledge or task-specific skills, namely, they need to learn how to learn, or even earlier than that, they need to know how to get the valuable information to be transformed into knowledge. In this sense, Information and Communication Technologies (ICT) can be thought of "mind-tools and as a support for learning". Collaborative learning improves the effectiveness of most activities, and its positive effect is amplified if learners are taught to reason about alternatives and to articulate as they work together (Wegerif, 2002). With this function, then, specific ICT tools might be capable of supporting dynamic and multiple representation of information by visualizing patterns in data-sets, for example, allowing learners to think at a higher level about statistical relationships; acting as a resource through which users can discuss and explore ideas; enabling the generation of a network allowing users to engage directly in

knowledge creation with others who are not physically present (Wegerif, 2002). Overall then, it can be stated that technology, creativity and knowledge converge towards the final objective of *learning* intended as "the process by which knowledge is increased or modified" and of *transfer,* intended as "the process of applying knowledge to new situations" (Wegerif, 2002).

2.9 ICT tools as aid in knowledge modification and transfer. Is there a need for further research?

Given the interrelation of technology, creativity and knowledge to the benefit of a learning process, hence, it seems almost natural to wonder which ICT tools could be the most appropriate in supporting both the process of learning and transfer of knowledge necessary to develop "new"[1] ideas. In this respect, Trucano (2005) arose some specific questions enlightening this issue, for instance "What do we know about the usefulness, appropriateness, and efficacy of specific ICTs (including radio television, handheld devices, computers, networked computers and the Internet)?". For our purposes, such a question needs to be narrowed down to the use of the internet and internet connected devices, also considering that "*one-to-many broadcast technologies like radio and television are seen as less 'revolutionary' ICTs as their usage seems to reinforce traditional instructor-centric learning models, unlike computers, which many see as important tools in fostering more learner-centric instructional models*" (Trucano, 2005).

However, referring specifically to the use of computers for educational purposes, Trucano (2005) also stated that the usefulness of computer-aided instruction (CAI), in which computers are seen as simple replacements for teachers, has been discredited, which posits some doubt about the most efficient way to use computers in this context. As he suggested, further investigations should be carried out in this respect, given that "there is very little research on the most appropriate placement of computers used to achieve various learning objectives" (Trucano, 2005). Arguably, the same can be said for internet connected devices and virtual environment developed for educational purposes, such as learning platforms. In fact, Trucano himself believed that, although the use of handheld devices in

[1] Once again, we remind the reader that we consider "new" as a relative concept, relying on the description of the idea generation process provided by Koestler (1964), as explained in the introduction.

particular was destined to receive increasing attention, as far as 2005 still little research had been done on uses of handheld devices (including personal digital assistants and mobile phones) in supporting the learning process.

However, our interest diverges from Trucano's focus on the use of ICT tools in the field of education, since we believe that learning is not only confined in this realm, but it could be rather extended also to creative processes requiring reconfiguration and modification of existing knowledge, acquisition of new knowledge, and transfer of knowledge from analogous realms. In fact, it is hard not to recognize how ICT and especially the internet and internet connected devices, have the potential to strongly impact knowledge and enable its transfer to the benefit of the creative process overall. Therefore, our opinion relies on both the research findings summarized in the previous sections, and on the fact that engaging all resources available over the internet and coordinating ways to connect people sharing similar interests have proven valuable in the field of education, which is the most emblematic field for knowledge modification and transfer (Trucano, 2005). We therefore believe that the research findings about the interrelation of creativity, technology and knowledge should be complemented by further investigations concerning which specific ICT tools could be of aid in the process of ideas generation. Not to mention that, arguably, "much of the publicly available information about the effectiveness of particular ICT tools is generated by the companies who market such products and related services" (Trucano, 2005) and that, hence, there is a need for further, independent research such as an investigation carried out for academic purposes.

2.10 Existing Solutions

Several examples of how ICT can help the modification and transfer of knowledge are provided by emerging Internet technologies such as recent wireless protocols and mobile Internet centers which provide connectivity to remote areas, as well as community telecentres in schools providing access to learners (including "teachers engaged in personal enrichment and professional development opportunities" to ICTs outside of formal school settings (Trucano, 2005). Arguably, all these solutions seem to converge towards two main objectives: firstly, to let people access information which they would not be able to grasp otherwise (which is arguably the primary goal of the internet overall); secondly, to simultaneously grant a collective experience, which transcends the mere acquisition of information by enabling also knowledge modification and transfer.

Nowadays, many online services with these aims have been developed, and some of the most recent and widest used can be identified in: Pocket, Evernote, Google Plus, Dribbble and Pinterest.

Specifically, *Pocket* was founded in 2007 and its main function consists on the possibility for users to save articles from the internet ("What is Pocket? - Pocket Support," n.d.). One of the main drawback of the web indeed, is that despite individuals can have easy access to a large number of different articles, there might be the risk that they can be lost due to their intangibility. Namely, with newspaper, if someone doesn't manage to finish an article, he or she can just leave it open on the kitchen table and keep on reading it once gotten home. On the contrary, with online news a bad timing (e.g. time to go to work, take the kids to school etc.) could result that the reader has a hard time in finding that specific article again. Additionally, this service provides users with personalized contents based on interests and family or friends' recommendation that can facilitate and speed up the research of articles; it works as a virtual "personalized library" ("What is Pocket? - Pocket Support," n.d.).

Evernote was founded in 2008 and it works as a cloud storage system. Users can store a text document, a photo, a video but also more factual information such as tickets, receipts, users' manual etc. However, the main difference from other cloud-based services, such as dropbox and google drive, is that Evernote is more focused on the creation of notes, and thus it is more concerned on the creative side of knowledge creation and storage (Moreau, n.d.).

Google Plus is part of the google suite solutions and it allows to organize personal and professional connections (Collins, n.d.). It differs from the previous systems described since it is more social network oriented. Indeed, other than having the possibility to find relevant information and articles in specific categories, users can also share contents with their personal connections (Collins, n.d.).

Dribbble was found in 2009 and it has been developed for a more specific target: Designers. It is considered as an online community that aim at providing creative professionals with a platform where they can gain inspiration, feedback, and eventually job opportunities. It is not strictly designed as a tool to provide field- related information, but more as a space where users can upload and share their work, namely graphic design projects ("The Community for Designers - Dribbble," n.d.).

Lastly, *Pinterest* can be defined as a social network where users can find artistic inspiration. Indeed, the concept is based on uploading photos, with a description and with a link of its original online source, that show "original" ideas, and thus that can give

suggestion about how to decorate a house or how to build a unique piece of furniture, for instance ("How Pinterest works," n.d.).

Despite of these examples, it can be stated that the closest instance of collective environment where people could reach very similar outcomes to the ones above mentioned was developed much earlier than the advent of such digital solutions. It is a laboratory built on the assumption that creativity is the result of a distributed cognitive system, an analogic space where creative minds could collect relevant information in a rational manner as well as share their project with others. This was a project by Sara Little Turnbull.

2.10.1 Sara Little Turnbull's Cognitive Laboratory

Back in the '80s, in order to deliver products that truly addressed customers' deeper needs, Sara Little Turnbull, an American product designer, design innovator and educator, identified the importance of the categorization of information and the identification of trends in the design process. For this reason, she decided to create a library where she used to store press cuttings classified in 375 categories which corresponded to 375 different areas (e.g. education, aging, healthcare etc.) (The Times, 2015). Nonetheless, these categories were dynamic and hierarchical which means that they could have been merged or modified when needed.

Sara's originally intention was to keep the "laboratory" offline in order to stimulate thinking and interdisciplinary overview since clients and students needed to be physically in the room in order to consult the files (Vienne, 2015); it was a sort of idea catalyzing space (Otitigbe, 2015). According to Sara, design should be the result of an interdisciplinary process and that was the aim of the laboratory: involving different kind of discipline to create a product that would really meet what customers want.

This perspective has been strongly supported also by Tom and David Kelley, the founders of the most famous design company, IDEO. According to them, anyone can develop creativity, and this can be stimulated working in interdisciplinary teams and thus sharing experiences, knowledge and ideas from different fields to create something new and unique (T. Kelley, D. Kelley, 2013). However, as Donald (2001) stated, with the increase number of articles and information available, "physically searching through stack and shelves is less productive" and time-consuming. This is probably why the project didn't scale and, instead, stayed within Stanford University's walls; the storage and management of so much information would have been too complex to physically manage.

3 Conceptual framework

3.1 Concepts that help understand the research question

Before presenting the salient aspects of our investigation, it is necessary to shed light on concepts that might seem basic but of which the complete understanding is crucial in order to fully grasp the meaning and the objectives of the addressed research question.

3.1.1 Innovation as a creativity-based process

So far, it has been taken for granted that the readers were familiar with the concept of "creativity". However, as already expressed throughout the literature review, creativity has been the object of studies in several different fields, hence, we feel the need to contextualize it. As previously mentioned, creativity is one of the most influential factors determining innovation and therefore, any time that we refer to Innovation we assume the reader envisions it as a creativity-based process. But what do we mean exactly by that?

Although Innovation can concern products as well as services and business models (Schilling, 2017), in practical terms, Innovation can be thought as a process through which a large amount of design related information is elaborated in order to produce a variety of design outputs, some of which will be "creative" (Howard et al. 2008).

A *creative output*, in turn, can also be defined in various ways. Relevant to our scope, we refer specifically to two meanings stemming respectively from psychology and design engineering. Whereas psychology literature defines a creative output as a single idea, in design engineering it corresponds to a finished artifact, often with commercial value. Nonetheless, the realm of cognitive psychology and of design engineering share some similarities for what concerns the description of the creative process. In fact, similar to a design procedure, the representation of the creative process in psychology is also mainly described as a linear sequence of steps and stages (Howard et al. 2008).

This might suggest, as argued by Howard (2008), that understanding the linkages between psychological and design constructs in respect to the creative output may help creative talents to better rationalize their work. That is why, along this dissertation we refer to the "*creative process*", as the sequence of steps that lead to a creative output through a cognitive process (which generates ideas in intangible form, such as thoughts), and a mechanical process (which in turn allows the transformation of abstract elements into a

concrete ground on which to start implementing a project, such as sketches and notes, for instance).

Cognitive and mechanical processes, arguably then, can be seen as two phases of the creative process, in which initially the *ideas*[2] *are formed*, and only later such concepts are represented in a variety of mechanical representations (Carlson & Gorman, 1990).

3.1.2 How ideas are formed

Whereas literature of quite different realms seems to agree on the dynamics of how a creative output is produced, there are quite different explanations of how ideas are generated. Some models, as the one Wallas proposed in 1926, suggest the emergence of ideas as a sudden phenomenon, while more structuralism's studies offer another perspective. Idea generation would be the result of *deliberate connection of matrices of thoughts* (Koestler, 1964), or as similarly expressed by Amabile (1983), the outcome of two or more existing ideas combined together[3]. Nonetheless, these structuralism's perspectives seem to approach the issue of new idea generation as a process through which already existing concepts might be recombined and reconfigured in order to produce new outcomes. This kind of reasoning, nonetheless, implicitly relies on the ability of human brain not only to generate concepts[4] but also to store them.

Traditionally, the storage of acquired concepts and their transformation into knowledge for later recall is what we commonly define as *Memory*. The storage of such concepts happens at least in two phases. Short-term memory lasts from seconds to hours, while Long-term memory is retained from days to years. However, they both have a limited capacity. More recent cognitive studies (Sherwood, 2015), nonetheless, address the former, the short-term memory, also as *working memory,* namely, "the temporary storage system under attentional control that underpins our capacity for complex thoughts" (Sherwood, 2015).

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[2] Following the explanation provided by the Cambridge Dictionary of Philosophy (Audi, 1999), we refer to "ideas", not necessarily as mental representational images of some object but as abstract concepts in general

[3] Both Amabile and Koestler's views stem from Aristotle's rules of association (Howard, 2008)

[4] Human brains do not store what are called *verbatim information,* but concepts (Cowan, 2014)

3.1.3 Digital technology influencing ideas generation

Assuming that new Ideas Generation is the result of already existing ideas combined together, following both Aristotelian view and the speculation of Koestler (1964) and Amabile (1983), it can be presumed that tools that are able to rationalize and control how *working memory* is formed will be also capable of shaping new thoughts creation.

Specifically, it is the type of technology embedded in the tools involved what shapes the creative output and has the power to both constraints and extend creative talents' actions (Donald, 2006). As an example, if we take Arts as creative output in its broadest sense, we can see how on one hand it represents a natural product of cognition itself, generated by the combination through cognitive systems of conceptual materials and perceptual material. While on the other hand, the media of artistic expression, the tools needed, affect what can be represented through the creative process. Hence, it can be stated that art is a cognitive outcome that is also technology-driven (Donald, 2006).

We should however specify the meaning that we attribute to "*technology*" in this context. As it has been expressed so far, "technology" is a broad term for human tool systems which, with specific functions, can also mediate the process by which human learning and thinking is mediated (Craft et al., 2001). Nonetheless, in more specific terms along the analysis and discussion, we narrow the concept down to "computer-based technologies used to handle information and aid communication (ICT)" (Craft et al., 2001). But which type of technology, intended in both ways, could be implemented in order to rationalize, control and extend humans' natural capability to memorize and eventually reuse existing ideas?

The first way humans invented in order to transfer the storage of an idea from the brain, its natural rest-medium, to a non-biological medium such as paper, has been through writing. Nowadays, nonetheless, as much as writing allowed humans in the pre-digital era to construct elaborate *Palaces of Memory* such as libraries for instance, digital technology allows us to store information in unlimited space previa a digitization process of information (Donald, 2001). Specifically, writing systems, new graphic media, external memory systems among the new digital technologies available, can change not only creative outputs but art in general and the possible interpretations of it because they influence memory itself through media storage and pathways retrieval (Donald, 2006).

3.1.4 Distributed cognition system enabled by digital technology

Digital technologies have not only extended the human capability of memorizing and reorganizing concepts but have also deeply affected the way people understand the world around them. In fact, as much as libraries used to function in the past, digital technology nowadays allows the creation of a system of *cognitive governance*, as expressed by Donald (2001). If we think of the Italian Renaissance for instance, we can understand how libraries involved much more than collecting manuscripts such as also a great number of people to organize and maintain those *Palaces of Memory,* causing a "large agglomeration of people to function as a unity" (Donald, 2001), a network.

Nowadays, electronic search devices allow the effective consolidation of many collections into a *single network*. This aspect is crucially impacting the way collective knowledge is produced. In fact, according to Donald (2006) and Tribble (2005), human cognition (i.e. the mental action or process of acquiring knowledge and understanding through thoughts, experience, and the senses) is not confined to an individual, rather it is collective: *"Human culture is based on the sharing of mental representation, and […] it allows them [people] to achieve things that are far beyond the capabilities of a socially isolated human being. […] It follows that the source of creativity, although partially personal, are also public, outside the nervous system" (Donald, 2006).*

3.1.5 Distributed cognitive systems as a form of structurally coupled embodiment

Regardless of whether it is individual or collective, human cognition is situated, namely, it is embodied (Ziemke, 2001). Cognitive scientists and cognitive psychologists believe that "intelligence cannot merely exist in the form of an abstract algorithm but requires a physical instantiation, a body", which means that *Embodiment* is the condition necessary for any form of natural and artificial intelligence to exist. Notably, however, this does not mean that intelligence needs an actual physical body, in fact, in some cases it can be considered as the environment in which intelligence is located (Ziemke, 2001).

In this sense, then, the meaning creation process is not only an individual process in which the human mind is comparable to an information processor which "receives external information and internally creates meaning", but rather it is a reciprocal interactive process between it and the environment in real time and space. This is why "Embodiment" might refer also to "the property of our engagement with the world that allows us to make it meaningful" (Li & Duh, 2013).

This is relevant because a distributed cognition system enabled by digital technology, as expressed in the previous paragraphs, can be analogously assimilated to a software that, without the need of a physical body, is intelligent because it is "structurally coupled" to its environment (Ziemke, 2001). Nonetheless, we consider embodiment as relevant for our discussion also on another level. As expressed in the next section.

3.1.6 Embodiment of words into Conceptual frames

Lakoff (2010), one among the most famous cognitive linguist and philosopher nowadays, stated that humans think in terms of unconscious structures called "frames" or "schemas". These frames are communicated via language and visual imagery and can include semantic roles, relations between such roles and relations to other frames (one example mentioned by Lakoff is the "Hospital frame", which includes roles such as "doctors" "nurses" and "patients" etc..). Words neutrally activates not only their defining frame but also others who are related to it by belonging to the same system of frames. Lakoff believes that all our knowledge is built through this framing process because, indeed, humans cannot avoid it. In fact, not only negating a frame it activates it but also changing frames is very hard considered that new language must make sense in terms of the existing systems. These means that any piece of information our brain catches, like facts for instance, must make sense in term of their system of frames, otherwise they will be ignored (Lakoff, 2010). This is possible because, every word is based on *embodied experience*. Let us think of conceptual metaphors, which have to do with correspondences in embodied experiences most of the time, for instance. Namely, thoughts and language are embodied in conceptual frames. This theory is in line with what stated also by Clark (2006), who claimed that the "*relation between the material conventional symbol structures that we encounter in the spoken and written word and human thought is given by a model of (...) coordination dynamics in which the forms and the structures of a language, play a cognitive key role that depends on materiality*". And all of this it possible thanks to the brain which creates radial, non-classical *categories* every time a word is elaborated (Lakoff, 2016). Therefore, the action of categorizing information is a natural process for people.

3.1.7 Categorization enabling creativity

In their studies, Rosch (1999) and Brinck (1997) supported that categorization represents a fundamental pillar of human learning and thinking process. Indeed, according to them, the possibility to learn from *experience* and to formulate thoughts is determined by the ability of the individual's mind to organize any world realities acquired through a system of

categorization. Specifically, for Brinck (1997), it becomes possible for a subject to "entertain a continuous and coherent thought only if he/she can identify the object of reasoning". Hence, the role of categorization is to gather, for instance, household items, emotions, objects, events etc. into specific classes that would aid this identification (Rosch, 1999). However, categorization is not only considered as an important factor for acquisition of knowledge and experience, but it is also identified as the facilitator of creativity. Indeed, according to Brinck (1997), insights that trigger creative solutions are the outcome of "temporary re-categorization". Creative people tend to find new alternative solutions through the *comparison among different knowledge domains*, namely *categories* (Brinck, 1997). In other words, through spotting domains that have different qualities but same contents, they are able to find new application to existing knowledge (e.g. masking tape used in grafting instead of bast). Additionally, Brinck (1997) stated that:" [...] for an individual to be creative in an area, he or she must have a good grip of that area, or whatever result he or she attains, it will be random, and thus cannot be called creative". In particular, in his articles the author specified that in order to solve a problem, it is important for an individual to have a well-developed background knowledge and/or experience because it would allow to better spots solutions.

3.1.8 Technology as easy access to information domains

If we identify the source of creativity in the process of comparing domains to spot alternative solutions (Brinck, 1997), Satell (2014) stated that nowadays technology has facilitated this process. Whether before *different domains* were accessible just through direct people collaboration and meetings, now anyone can have access to those by simply making use of search engines (Satell, 2014, Oldham & De silva, 2015). Indeed, "the sum of human knowledge is merely a few clicks away" (Satell, 2014). In this way, thanks to the development and adoption of new technologies, it is not possible to consider creativity as the outcome of luck and chance anymore, namely accessible just by few. Moreover, the possibility to easily store, display and share personal representation of thoughts (e.g. hand drawing), leaves room for other people to give their own interpretation and give feedbacks (Yamamoto & Nakakoji, 2005, Oldham & De silva, 2015) resulting to be a catalyst of inspiration.

3.1.9 The importance of an organized information tool to facilitate ideas generation

Whereas in the pre-digital era, knowledge and experiences were mainly accessible through relationships with other individuals and books, currently, the presence of many sources of information gives rise to some relevant concerns: where to look in order to find the information that we really need, and how to be sure that those are valuable and reliable?

As suggested by Heintz (2006) and Satell (2014), the most cost-effective and efficient way consists in the use of search engines (such as Google). Indeed, these facilitate the search since they provide an ordered list of URLs that incentivizes to consider only the first answers, and at the same time it ensures a certain degree of reliability-results showed at the top of the list, which usually represents a sign of quality (Heintz, 2006). Nonetheless, if we narrow down the users that need to use these sources, and, for instance, we consider people that base their work on creativity, this solution still represents a difficult and not effective way to retrieve information that can be a valuable source of inspiration for several reasons. Firstly, the process is time consuming, and information are too broad and superficial (Oldham & De silva, 2015). Kim et al. (2009) addressed this problem as a "lack of support to help idea generation". In addition, Kim et al. (2009) observed that nowadays customers expect a variety of new products in an always shorter time span, resulting in a contraction of the product life cycle. On this basis, the long time required for the retrieval of information and the following design and production process, might represent a hassle for creative talents. Moreover, through brainstorming and idea generation, designers tend to come out with a huge number of ideas that either for bad timing or limited feasibility cannot be adopted (T. Kelley, D. Kelley, 2013 and Kim et al. 2009). Nonetheless, even though they cannot find a development during a project, they can speed up the generation of solutions for next ones.

3.2 A proposal for Moleskine: Moleskine Virtual Cognitive Lab

Given that Moleskine is really focused on fostering creativity and it identifies creative talents as its main segment, we thought that the development of an analogous solution to the one developed by Sara Turnbull, but digitized, would be a good way for the company to support the product/service design process. In this respect, our investigation aims at addressing the issue of new ideas generation through the realization of a Cognitive

Laboratory in a digital environment. Namely, an online platform enabling a community of creative talents to connect and share thoughts and notes as well as having a broad access to new topic-related publications, which could be stored and organized through a system of categorization. In specific, the users would be able to: share personal written thoughts/notes; save articles that they find interesting while having access to categories of articles saved by others; post their projects to provide a source of inspiration for others. All this provided us with the opportunity to highlight the relevant connection between the creative process of creative talents, who are Moleskine's target, and distributed cognitive systems. Arguably, to understand whether or not such a solution would be valuable for creative talents requires to dig more in deep in their needs as individuals undertaking a creative process on one hand, and their desire to be engaged into a network of people with communal interests on the other. For our investigation, we assumed the following:

1. Organizing information in a systematic and easy to access manner helps the ideas generation process.
2. Re-utilization of existing ideas might speed-up the creative process
3. Categorization is a natural step in the human brain effort to store, elaborate and transform information into knowledge.
4. Sharing ideas in a community of people with similar interests helps generate a distributed cognition system which overall enhances each individual's creative process.

3.3 Concepts that help understand the analysis

3.3.1 The 4 main conceptual areas of our investigation

On the basis of our assumptions (see section 3.2) we designed a questionnaire[5] addressing 4 thematic main areas, which we classified as follow:

"Ideas Generation", which includes generic questions aimed at verifying whether or not the respondents recognized ideas generation as a phase of their creative process and investigating which media, tools and interests were involved in such a process.

"Re-utilization of existing ideas", namely, questions about the attitude of the respondents towards the potential usage of already existing but not-yet marketed ideas while also addressing the reasons behind both negative and positive responses.

"Sharing of ideas as part of a community", mainly concerning questions about the value that respondents would allocate to sharing ideas, materials and perspectives among people with the similar interests with respect to their creative process. It should be noticed, however, that we consider the action of "sharing" in its broader meaning of "Use, occupy, or enjoy (something) jointly with another or others." (Dictionary O., 2018). In fact, along the analysis, the reader will find that under the umbrella term of "Sharing", we collect both the action of accessing others' ideas and the action of making own ideas available to others. This is reasonable if we think that there would be no sharing at all if there weren't two actors involved: one who makes ideas available on one hand and another seeking access on the other hand.

"The value of a virtual cognitive laboratory", thought as grouping questions targeting the respondents' potential interest in a virtual cognitive laboratory such as the one we proposed, while also asking them to evaluate the pros and cons that such a system would present eventually.

[5] For details about how the questionnaire was designed see Section 4.

3.3.2 The theories supporting the investigation

By using the literature review proposed in Section 2. and the studies relevant for our research as a baseline, we identified some crucial theories to address the four areas described above. We discovered that, to begin with, studies by Oldham & De Silva (2015) about the ways in which technology can enhance innovation by facilitating the process of creative ideas generation represents a key step in the logic of our argumentations along the analysis, as well as a leit motiv from the introduction to the final discussion. Moreover, they are very relevant especially for the first section of the analysis, dedicated to "*Ideas Generation*" and "*Re-utilization of existing ideas*". Besides that, the research by Hemming (2008) and Medaille (2010) concerning the information-seeking behavior of visual artists is very useful to address the areas concerning ideas generation and the value attributable to sharing ideas within a community, respectively. Besides, the study carried out by Zhang et al. (2015) is also very relevant, by distinguishing and describing the creative process as clearly divided into ideas generation and ideas implementation. Lastly, of course, talking about the production and transformation of knowledge by framing and storing information through categorization would have been impossible without relying on the theories by Eleanor Rosch (1999).

For what concerns the third areas of investigation "*Sharing of ideas as part of a community*"**,** theories by Dessart et al. (2015) about Consumer Engagement and by Wenger (1998) endorsed by Hemming (2008) about the so called "Community of Practice" were fundamental in order to link some traits of creative talents with the degree of openness to share ideas within a community. Furthermore, theories from Oldham and De silva (2015), Sorauren (2000), Heintz (2008) and Verganti (2003, 2008), are relevant to understand the importance of a varied nature of information collected in one site in order to facilitate the creation of unique ideas and to identify new trends.

Lastly, for what concerns the thematic area "*The value of a categorization system*", namely the area where we aimed at understanding whether users would be reluctant to share their ideas for the fear that someone could steal them when adopting Moleskine Virtual Cognitive Laboratory (MVCL), theories from Teece (1987) and Mazzoleni & Nelson (1998) about the appropriability and intellectual protection has been useful to better conduct our analysis. Additionally, the study of Dwyer et al. (2007) about trust in social networks sites, helped us to frame the issue since trust in relation to content sharing has now become a current topic of research given the large number of communities and social network that have been born with the digital era.

In order to better follow both the analysis and the discussion, the table below might come at aid. An explanatory way to read the table is, from left to right:

"Section 5.1 presents the results concerning the thematic areas of "Ideas Generation" and "Reutilization of existing ideas", addressed by the questions from 5 to 13 of the questionnaire, which were analyzed through the theories elaborated by Oldham & De Silva (2015) etc.. and which answered the first sub-question of the investigation by the findings 1,2,3"

Section	**Area**	**Q[6].**	**Theories**	**R.Q.**	**Findings**
5.1	"Ideas Generation", "Re-utilization of existing ideas"	Q5a, Q5b; Q6a, Q6b; Q7, Q8, Q9, Q10, Q11, Q12, Q13	Hemming (2008); Oldham & De Silva (2015); Medaille (2010) Hargadon & Sutton (2000)	1. *How creative talents inform their creative process and nourish their inspiration to generate new ideas?*	1. 2. 3.
5.2	"Sharing of ideas as part of a community", "The value of a virtual cognitive laboratory"	Q14, Q15, Q16, Q17, Q18, Q19, Q20 Q23, Q24	Dessart et al. (2015); Wenger (1998); Tamir & Mitchel (2012) Oldham and De silva (2015); Sorauren (2000); Heintz (2008); Verganti (2003); Verganti (2008)	*2a. Would a virtual cognitive Laboratory be valuable for creative talents?* *2b. Does the Virtual Cognitive Lab represent an opportunity for Moleskine?*	4. 5. 6. 7.
5.3	"Sharing of ideas as part of a community" "The value of a virtual cognitive laboratory"	Q21, Q22	Teece (1987); Mazzoleni & Nelson (1998); Dwyer et al. (2007);	*3. Which products-specific characteristics of such a system might prevent its adoption?*	8.

"RQ": Research Question addressed

"HYP": Hypothesis verified

"Area": Area of the questionnaire involved

"Section": Section of the analysis allocated to the topic

[6] For a complete overview of the questionnaire see Appendix.

3.3.3 The studies informing the codification of open-ended questions

By analyzing the answers to open-ended questions, we identified some major dimensions under which to group them. Hereby this section, we present the most important literature that supported the logic through which we undertook such a classification of the responses.

3.3.3.1 "Ideas generation and Re-utilization of existing ideas"

Hargadon & Sutton (2000) formalized the way in which innovators, either individuals or companies, serve as intermediaries between otherwise disconnected ideas, in what they called the "knowledge-Brokering Cycle". The steps entailed in such a cycle are four: to start, "knowledge brokers" capture good raw materials; then they keep them alive by playing with them; after that, they imagine new uses for such "old" ideas and lastly, they test them for new uses to see if they have commercial potential. This kind of perspective, arguably, involves two factors that we considered as fundamental for coding some of the open-ended questions in the questionnaire.

Firstly, the general consideration by Hargadon and Sutton (2000) is that already existing ideas can represent a starting point from where to develop new ideas. In this respect, we have identified some respondents' opinion claiming the same and we decided to collect them under the dimension "*Baseline*" (Q12-Q13) (Q14-15), which we identified in both the thematic areas "Ideas Generation" and "Sharing of Ideas as a part of a community". Secondly, the scholars claimed that by applying such "old" ideas to new uses, they can potentially assume another value and in this sense, they are subject of a requalification process. We recognized the same opinions among the answers that some respondents provided us and decided to collect them under two dimensions respectively: already existing ideas as a "*stimulus*" or a source of "*inspiration*" (Q10-Q11 & Q12-13) and "*Requalification*" (Q10-Q11). Concerning the latter, also Christiansen et al. (2010) stated that, differently to products, some brand concepts, which we can assimilate to specific ideas, have not an expiration date. In fact, they should not be considered in terms of Product Life Cycle but in terms of a *Valuing* process, for which the value of a concept, of an idea, is generated by the relationship between who produces the idea and who finds it useful; such a relationship is not static but rather dynamic and can be modified and re-created over time, causing an idea to be requalified depending on such relationship adjustments.

Another dimension that we identified as recurrent pattern in more than one answer for the thematic area "ideas generation" is what we called "*Matrix of thoughts*" (Q10-11).

Koestler (1964) used this expression to "denote any ability, habit, or skill (...) any ordered behavior governed by a "code" of fixed rule". The author claimed that "all coherent thinking and behavior is subject to some specifiable code of rules to which its character of coherence is due". This means, in practice, that any idea we can generate, is a coherent combination of concepts that already exist in our brains, even unconsciously, and therefore that "old" ideas can represent the "matrix", namely the pattern representing an "ensemble of permissible moves" to follow to generate other ideas (Koestler, 1964), which is slightly different from using already existing ideas as a "Baseline".

Arguably, the "Knowledge-brokering cycle" Hargadon & Sutton (2000) is relevant also for what concerns the dimension "*Problem Solving*" (Q10-11 & Q12-13), which we have identified as a recurrent pattern among the answers to open-ended questions belonging to the thematic area "Ideas Generation". In fact, Hargadon and Sutton (2000) stated that "the biggest hurdle to solving problems often isn't ignorance" but rather the fact that people cannot access necessary information at the right time for several causes. One among these is that previous studies and already existing ideas that might be of aid are often lost or forgotten, which is the main reason why the two scholars claimed the fundamental importance of "keeping ideas alive".

Another crucial aspect in the reutilization of already existing but not-yet marketed ideas for many respondents concerned the time needed in order to find new solutions. We collected these responses under the dimension "*Time-saving*" (Q12-13). Arguably, in fact, the lack of relevant knowledge for what concerns some aspects can also mean longer time of preliminary research before actually generating the ideas. In this respect, Tom & Kelly's book (2013) about design processes was helpful, considering their observations of designers' practices to keep track of previously generated but not implemented ideas, which overall, in the authors' opinion, constitutes a pool of knowledge ready to be used.

Among the responses provided, we also identified some perspective concerning the re-utilization of ideas that had been considered previously unsuccessful. Some respondents, indeed, presumed that there is a distinction between the generation of good ideas and good implementation, mostly agreeing that not always good ideas mean also successful ideas. These respondents seemed to look at ideas through broader lenses, by contextualizing them in their different applications. In this sense, we have decided to collect their opinions under the umbrella of "*Transformation*" (Q10-11). We believed such a decision could be supported by the theories by Akrich et al. (2002) highlighting the need to adapt, to manipulate and transform ideas in order to better fit them with the context. Such a dimension, however, is strictly linked also with another, which we have called "*Mismatch*

between ideas and market" (Q10-11). This dimension aims at collecting several respondents' opinion about the fact that sometimes ideas which are very good are not used nor marketed because of the lack of a developed ecosystem supporting them. By this, Adner (2006) meant that the success of some ideas, intended as products, services and models, depends not only on whether or not potential users and consumers find it valuable but also on the fact that who had the idea is not alone to develop it but can count on a number of parties who can contribute to its development.

Lastly, the concept that not only the ideas implementation phase but also ideas generation phase needs to be supported by more than one individual seemed to be also important for some respondents. We decided to collect this information under the dimension "*Collaboration*" (Q12-13) (Q14-15), which we identified as relevant for both the thematic areas "Ideas Generation" and "Sharing of Ideas as a part of a community", given also the fact that most of the Innovation Management literature states that creativity is fostered through cross-functional teams within organizations, namely through internal collaboration among individuals belonging to different departments (Edmondson et al., 2009).

3.3.3.2 Sharing of ideas as part of a community and the value of a Virtual Cognitive Laboratory

In order to address the concept of "Community", the studies by Muniz (2001) about the relationship between users and brands as well as the research by Wenger (1998) about specifically "Communities of Practice" seemed to fit the characteristic of a community of creative talents very well. Besides that, specifically concerning the concept of "*Sharing*" and "*Learning"* Dessart et al.'s theories (2015) and their detailed description of the Consumer Engagement online turned out to match our classification of the respondents' opinion in more than one occasion.

In fact, for what concerns the motivations provided by some respondents behind the willingness to access others' ideas and make own ideas available to others (Q14-15, Q16-17), we found slightly different comments that overall converge all towards the definition of "sharing" provided by Dessart et al. (2015): "Sharing is a way for online brand community members to exchange experience, ideas or just interesting content (…) driven by the motivation to provide resources". In this definition, indeed, the concept of "*Exchange*" is clearly stated. However, we identified some different shades of such a concept, such as gaining "*Different Perspectives*" (Q14-15) and "*Feedback*" (Q16-17) from

others, at which other respondents look as a way to interact through synergetic dynamics that lead to "*Collaboration*" (Q14-15) and "*Teamwork*" (Q16-17).

Moreover, we needed to refer again to Dessart et al. (2015), when it came to analyze open-ended questions by respondents that attributed their willingness to share ideas within a community to the desire to learn. However, being "*learning*" a multi-sided concept, we found other elements linked to it such as "*curiosity*" (Q14-15) and "*Self-rewarding feelings*" (Q16-17). In fact, in accordance to studies about the information-seeking behavior of artists (Hemmig, 2008), creative talents show a high level of curiosity which is demonstrated by an almost compulsive need to browse across different subjects in the case of individual research (Bates, 2007), and by the need to access a so called "shared repertoire", namely, the collection of resources that is required by practicing a communal activity and which "reflects a history of mutual engagement" (Wenger, 1998) , in the case of research within the community. For what concerns, "*self-reward*" (Q16-17), instead, by reading some answers we understood that the act of learning from each other itself is rewarding but that besides this, the fact that someone else might require access to your ideas and even endorse them and share them within the community is highly valuable to build creative talents' confidence. Hence, once again the theories by Dessart et al. (2015) about Behavioral Engagement were highly relevant.

Lastly, in analyzing if and why Moleskine Virtual Cognitive Lab could facilitate the idea generation process, the study from Oldham and De Silva (2015), seemed to be once again useful to ground some of respondents' answers. As a matter of fact, their concern about the importance for information to be unique and diverse in order to foster creativity, has been helpful to shape two lines on thoughts among respondents, namely *"Stimulus"* and *"Extended vision of the world"* (Q18-19). Specifically, the former explicates that thanks to so many and diverse information made available by the MVCL (Moleskine Virtual Cognitive Laboratory), people have potentially a much higher likelihood to develop a larger number of solutions; while the latter indicates that such diversity would open people's mind to different perspectives.

Furthermore, the reasoning by Heintz (2008) about the distribution of information among different sources due to the development of new technologies was needed to articulate the concept of *"Time saving"* (Q18-19) expressed by respondents; with MVCL the issue of where retrieve valuable information is overcome.

Sorauren (2000), with his article about non-monetary incentives, helped us to give a different interpretation to the motivation provided by respondents about the *"Self-reward"* effect (Q18-19) that the system would arise in potential users. Indeed, differently

from how the concept has been explained above, according to some respondents, the adoption of MVCL would ignite intrinsic and transcendental incentives among users that would be eventually rewarded by the possibility to share what they have created.

Additionally, we grouped under the label *"Enrichment"* (Q18-19) all those answers that identified MVCL as a tool to gain valuable knowledge in alternative and more dynamic ways than traditional one. Instead, we named "*Added value*" (Q18-19) those comments supporting that Moleskine Virtual Cognitive Lab would be something new, innovative and convenient.

Sorauren's theory (2000) resulted to be useful also for our investigation about the value that can derive from the use of a Virtual Cognitive Lab and specifically why people shouldn't be afraid to share their ideas. Indeed, in his article, in order to explain why non-pecuniary incentive are more effective than pecuniary one, he touched upon the concept of ideas as non-material good and thus as available unlimitedly to everyone, which perfectly fit with the thought of *"Ideas as public good"* (Q21-22b) supported by some of the respondents.

Baer (2012) and Levitt (2002), with their exhaustive explanation about why same ideas doesn't involve same implementation, motivated our choice to label some respondents' motivation as *"Implementation to diversify"* (Q21-22b). In relation to this, we labelled one category *"Ethic among professionals"* (Q21-22b). Specifically, it encompasses those answers claiming that, given the assumed professionality among users, they believe that ideas won't be stolen but just implemented following the personal way of thinking.

Additionally, we found Dwyer et al. theory (2007) very relevant to justify why adequate *"Privacy settings"* (Q21-22b) can decrease concerns about the sharing of information and instead increase the degree of depth and value of the information disclosed.

Teece (1987) and Mazzoleni & Nelson (1998) theories have been relevant to analyze the motivation of some respondents with regards to the potential "*uncertainty about the appropriability of return"* (Q21-22a) resulting from sharing personal ideas. Indeed, absence of protection of intellectual property might reduce the incentive and the degree of appropriability of the potential economic return of the ideas. This aspect can be strictly related to the category that we defined *"Uncertainty about ownership"* (Q21-22a). However, the reason behind why we decided to keep these separated lies on the fact that, whereas in the former, respondents clearly mentioned the uncertainty about economic return related to the potential success in the implementation of an idea, in the latter the concern was more about the possible lack of recognition of the authorship of the developed

idea, hence more in non-monetary terms. This aspect has been also useful to categorize the reason behind why thanks to a system of controlled *"Authorship"* (Q21-22b) users won't be afraid to see their ideas stolen. As a matter of fact, authorship would mean having the possibility to declare who is the owner of the ideas, and hence having the right of its economic return.

Finally, Lin et al. (2009), have driven our decision to associate all those answers that doubted the quality of knowledge shared in absence of trust among users to the label *"uncertainty about quality"* (Q21-22a)

4 Methodology

4.1 Research approach

To carry out our investigation, we adopted an exploratory study in order to clarify the problem and gain new insights that could help us to better develop our idea and verify its feasibility (Saunders et al. 2016). Moreover, the strategy of this research has been driven by a deductive approach (Saunders et al., 2016). Indeed, thanks to our interest in Moleskine and in the creativity process, we observed that, even though its business is grounded on the concern of supporting individuals' creativity, the company does not seem to provide any tangible support to facilitate the creativity process, namely, in the phase of ideas generation. We believe also that the company might be more effective in fostering consumers' engagement in an era where users' communities have a relevant role in increasing perceived business value. Hence, these observations together with the support of a theoretical framework, made us think that an organized and structured system of information collection and storage could be a solution to address both these issues: how to supply a new service and increase customer engagement.

In order to assess the value of our potential solution, we adopted a qualitative approach since it is well suited to the analysis of poorly understood phenomena (Marshall and Rossman, 1995). Indeed, the solution that we aimed at investigating might result relatively new overall, and for this reason data collected by a quantitative analysis wouldn't have given us enough useful insights. Nonetheless, the data collected required some basic quantitative analysis just in order to visualize the data and present it in an easy to understand manner to the reader.

4.2 Research strategy and design

In order to collect the data, we chose to adopt a self-administered questionnaire survey (Saunders et al. 2016); it allowed us to better collect insights from a larger geographically distributed sample about the issue. Although generally a questionnaire is used as a quantitative method collection tool (Saunders et al., 2016), we thought to pose rather open questions to our sample, specifically why and how questions, in order to be able to easily and quickly gather opinions for a qualitative analysis. Indeed, the best way to understand

how the creative process occurs among creative talents and hence to assess whether our solution could be valuable for users, would have been through interviews or focus group among a large number of potential adopters, but due to the time constraint, the questionnaire represented the most effective tool to fulfil our goal. Additionally, we adopted a cross-sectional time horizon, namely, in order to optimize the time to elaborate complex information in the form of opinions often articulated in long sentences, we collected responses just for a limited time frame of two weeks instead of repeating it for an extended period (Saunders et al. 2016).

Since we read many theories concerning the topics we touched upon, as suggested by Saunders et al. (2016), we accurately designed our questionnaire in order to test the veracity of these theories and at the same time gain additional personal insights from respondents. This step was very important for our research, because according to the answer we got, we could establish whether our solution would be relevant for users, and thus for Moleskine.

We started the questionnaire asking information about respondents' background and experience, followed by insights concerning their creative process and their opinions about our solution. Lastly, we kept respondents' general information, such as age and gender, in the very last section of our survey in order to be sure that more relevant questions for our analysis did not remain unanswered (Saunders et al. 2016).

The first section concerning respondents' experience in the field was necessary to weigh respondents' answers, indeed different level of experience and different backgrounds can contribute to a more or less degree of reliability, and different interpretation of the information.

The second section of the questionnaire was useful to test whether the theories that we adopted to develop our research question find an application in practice, and thus to check whether the way we thought the creativity process, corresponded to the one applied by the sample.

The last section was relevant to understand to what extend our Virtual Cognitive Laboratory could be considered valuable among the potential users and lastly, we thought that age and gender could have been factors influencing different cognitive processes.

4.2.1 Ideal Sample

Our decision to target the segment "creative talents" was taken by observing Moleskine's original segment. In fact, the company considers the creative class as the one who could

use the company's products to find inspiration and "express their unique identity" (Raffaelli et al., 2017), and thus it might represent also the potential users for our solution.

Our ideal sample is composed by creative talents who are at forefront of a creative process. In fact, we aimed at targeting respondents who have been dealing with idea generation and creative process both along their studies or within the working environment. In this respect, however it should be observed that the degree of expertise of the two groups addressed (students and professionals) is usually different and for our purposes we expected interesting and sometimes diverging insights from each respective side. Indeed, students and recently graduated people would have probably answered on the basis of projects undertaken in school, rather than on the basis of systematic daily actions which were more likely to be performed by professionals. Nevertheless, we believed that responses from people who are relatively new in the field are still a source of valuable insights. In fact, we assumed that respondents who study in their twenties are also technology oriented and likely free from preconceptions stemming from a routinely working environment, and that therefore they could potentially represent the early adopters of our suggested solution. Indeed, our Virtual Cognitive Laboratory is very reliant on the concept of communities and sharing of personal ideas through the use of digital tools, hence many "older" professionals' answers could have been biased by their technology aversion. For all of these reasons we aimed at addressing a sample that was as more balanced as possible for what concerns what we called the "position" dimension, by looking for a sample composition ideally of 50% students and 50% professionals. We tried to reach the same balance also for what concerns the "gender" dimension, forwarding the questionnaire to as many female as male respondents, as indicated by the charts in the next section.

Besides that, the reader might find peculiar that we did not specifically targeted Moleskine's users. This was done on purpose, given that our aim was not to investigate whether or not the company satisfied the users' needs, but rather to discover which creative talents' needs the company could potentially fulfill by introducing a new digital tool supporting the creative process.

4.3 Data Collection

As already mentioned, a time-optimization logic led us to adopt a self-administered questionnaire survey (SAQ) instead of interviews or focus groups. A SAQ refers to a questionnaire that has been designed specifically to be completed by a respondent without intervention of the researchers (e.g. an interviewer) collecting the data. This was done on purpose, given the fact that we did not want to influence the respondents, and assumed that a web-survey is less biased by the point of view of the interviewers. This of course required special care in wording the questions as well as in formatting the questionnaire. Eventually, as expected, choosing a SAQ posited some limitations to the research that will be expressed at the end of the discussion to this dissertation.

The questionnaire was designed in a digital environment, specifically in the web-based Office Suite proposed by Google (Google drive) and generated through the application Google Doc. Such a choice made the online distribution easy, since it is possible to share any created Doc in the form of a link. In order to have a more targeted sample we adopted the snowball sampling technique (Saunders et al. 2016). Namely, we shared such a link directly to friends, family and colleagues who matched with our ideal requirements, and we asked them to forward it to their acquaintances. The questionnaire included open, close and forced-choice questions (Saunders et al. 2016). Specifically, since we wanted to collect respondents' different perspectives, the open questions would have allowed them to be completely free to give answers according to their own thoughts. The close questions have been useful to check whether or not and to what extent they agreed on what we were asking. Lastly, with the forced-choice questions we aimed at identifying those realms that respondents considered to be more relevant as a source of inspiration, namely we asked them to choose some among different categories that better fitted with their opinion.

All the answers were collected in an excel file automatically created by Google Doc, this has been helpful to match the opinions we got with the personal characteristics of the respondents (e.g. experience, profession, age) and to better identify the flow of their thoughts along the different topics.

4.3.1 "Gender, Age and Position"

The number of people to whom the survey was sent is 80, which is therefore considered the sampling frame. These 80 people are males and female who are somehow involved in a creative process, either students of professionals. However, 70 among them actually accepted to participate in our study. Moreover, it is necessary to say that some

respondents left some questions blank and avoided to answer. This is why, along the data analysis presented in the next section, we consider a sample of 70 respondents in the majority of the occasions, but in some exceptions some analysis was done on a smaller sample, given that a lower number of respondents actually provided an answer. Overall, the Sample (N=70) gender, age and position is presented in the next charts:

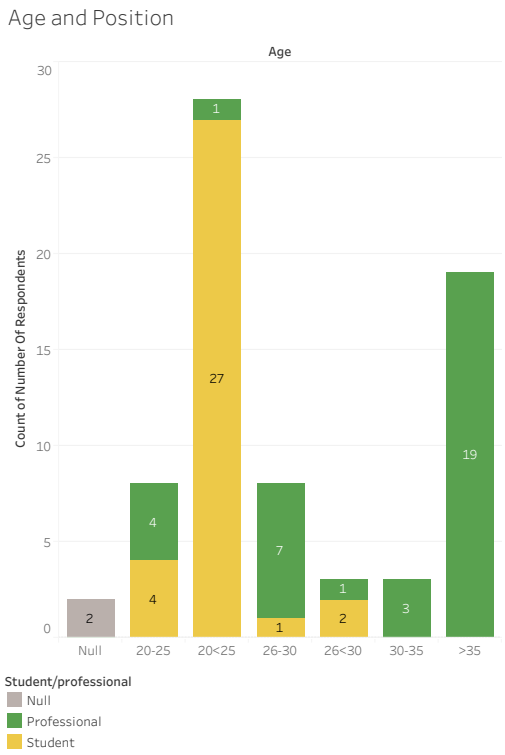


Figure 2a: Age and Position

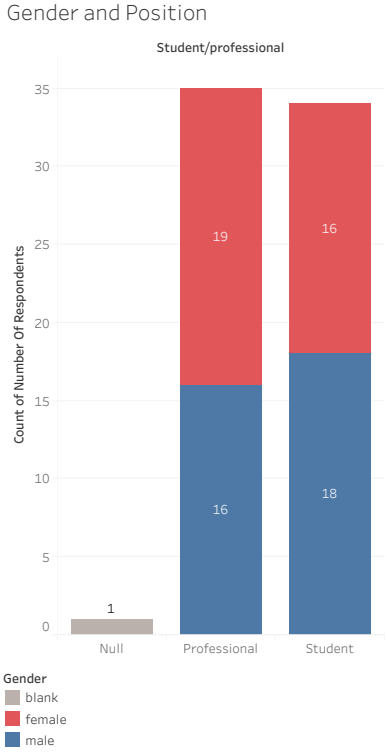


Figure 2b: Gender and Position

As we can see in Figure 2b, we managed to have a balanced composition for what concerns gender, being the sample represented for the 51,43% by females and for the 48,53% by males. Unfortunately, one respondent decided not to share such an information, but by corresponding to the 0.04% we believe this is not affecting negatively the discussion that will follow in the next sections. Moreover, we managed to reach a balance also for what concerns the "position" of the respondents, namely whether they are students or professionals. In fact, among 70 respondents in the sample, 35 are professionals (19 females and 16 males) and 34 are students (18 males and 16 females). Unfortunately, one respondent did not want to share information concerning its position.

Besides, as already mentioned, we decided to collect information about the respondents' age too, given the fact that often age is a determinant factor in the degree of resistance to adopt technology. Nonetheless, Figure 2a shows age matched with the

position, in order to verify the assumption that older people in our sample would also have a longer tenure in a specific field, which might also influence and potentially foster the degree of resistance to adopt technology. Even in this case, the graph shows that one respondent did not share information about age and one didn't either for what concerns position.

4.3.2 Background

The framing sample, as already stated, were meant to be people, either professionals or students, who are somehow involved in a creative process. Unintendedly the information collected revealed "Architecture" as the most determinant background in the sample, claimed in more than the 50% of the cases, followed by "Design" (more than 17%), Business Consultancy and Engineering, both very close to the 6%. We agreed on the fact that all the responses indicated areas involving creativity. Although greater variety might be preferred, we decided not to re-launch the survey, expecting more or less the same results due to the snowball sampling technique adopted and also considering the fact that architects in general, either student or professionals, are creative talents for antonomasia and that likely they would have provided us with interesting insights (See Figure 3a and 3b for "Background" sample composition).

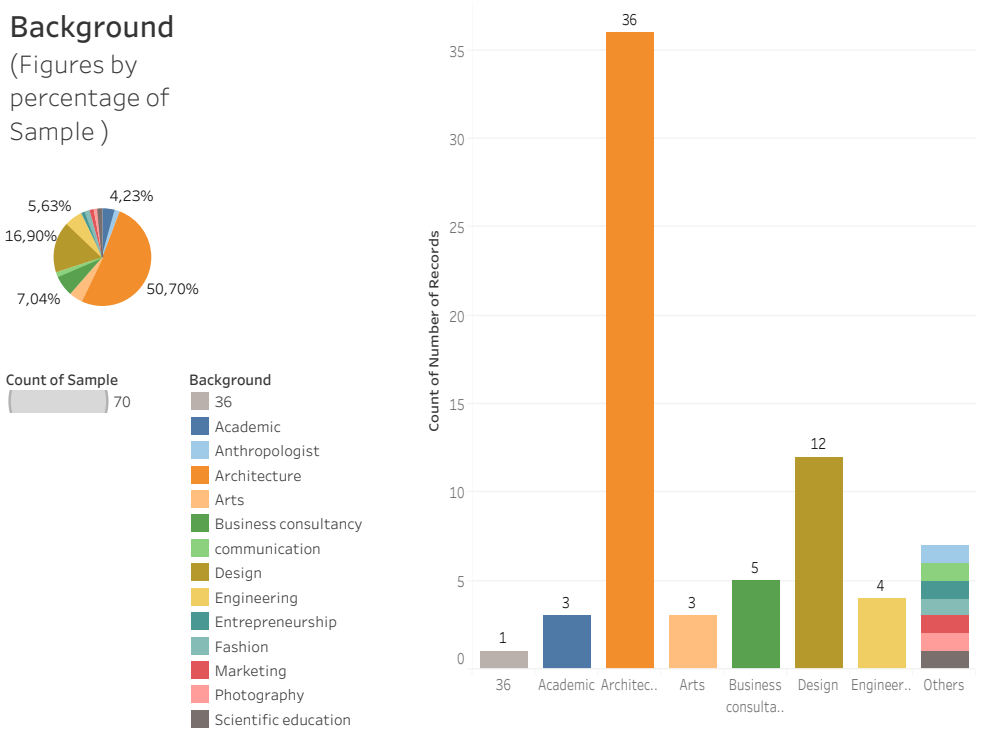


Figure 3a & 3b: Background sample composition

4.3.3 Years of Experience

The ideal sample would include creative talents with ability to carry out a creative process either for academic purposes or for specific tasks performed at work. However, we thought that the years of working experience might contribute to differentiate significantly the knowledge stock of each respondent. Hence, we decided to verify the years of working experience of the sample. Unintendedly, but probably due to the choice of the snowball sampling technique adopted, almost 50% of the respondents revealed to have not more than 2 years of working experience, as shown in Figure 4a and 4b below.

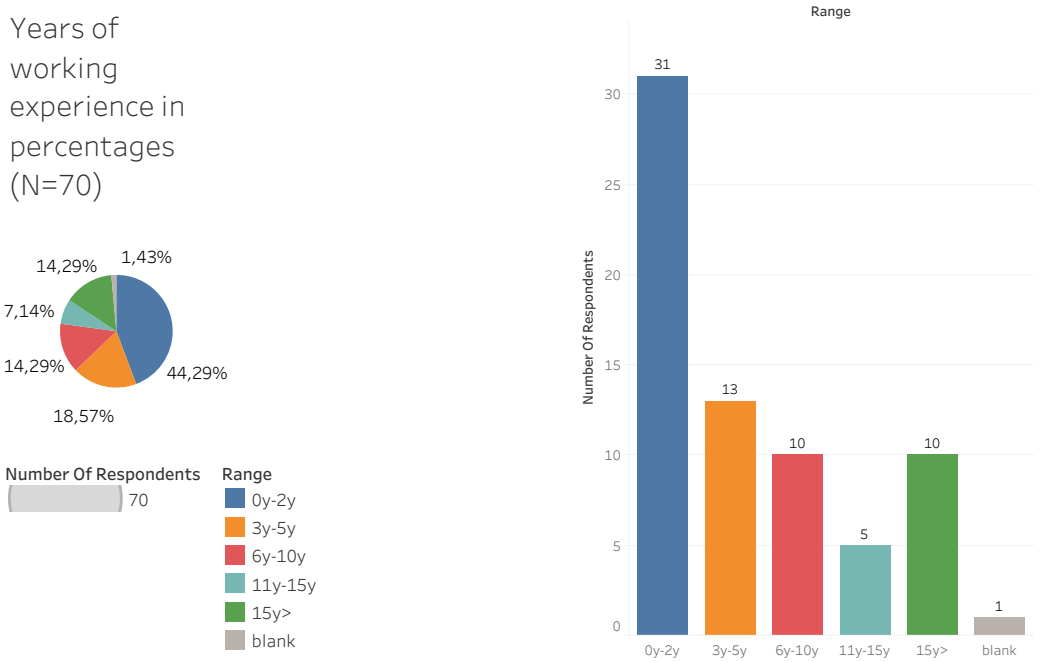


Figure 4a & 4b: Years of working experience

4.4 Data Analysis

For what concerns the data analysis, we decided to follow the approach suggested by Saunders et al. (2016) and thus for the open questions we designed a coding scheme. However, despite Saunders et al. (2016) suggested to design the scheme before the analysis, in our case it would not have been possible to do that beforehand since we didn't exactly know a priori which could have been the potential answers. Indeed, only by reading the questionnaire results we identified within each question the similar patterns among respondents' answers, and thus we were able to group them into macro categories. On this basis, we carefully read all the answers and we categorized and labelled them in order to distinguish the different lines of thoughts. This was useful for our research because enabled us to better analyze the answers and thus to find evidence supporting our hypothesis, and good argumentations for our research question. Eventually, we decided to visually represent the answers in order to give a clearer understanding of the insights that we gained through the questionnaire. This was done mainly through two tools, Microsoft Excel spreadsheets for calculus and elaboration of the data collected, and Tableau for the data visualization. It is important to mention the fact that it is a good habit to reshape the data once they have been retrieved from Google Drive. In fact, the Suite provides you with real-time updated data stored in an automatically generated online spreadsheet, which can be downloaded and used for the analysis. Nonetheless, in order to generate the data visualization with Tableau it is first necessary to split the data in smaller chunks, given that the raw-data is presented in aggregate form, namely the original spreadsheet contains all the answers to any questions, and using it directly for data visualization can be very challenging. We therefore reshaped the data on the basis of our needs, depending on the visualizations we wanted to provide for the analysis.

4.5 Reliability, Validity and Delimitations

4.5.1 Reliability

As already stated, thanks to the adoption of the snowball sampling technique (Saunders et al. 2016), we were able to target seventy respondents that matched our requirements and provided us with reliant information given their familiarity with the topic. Additionally, in order to be sure that respondents knew how to fill in the questionnaire and in order to reduce the number of invalid answers as much as possible, we dedicated the first section of our

questionnaire to the explanation of the purpose of our survey and the way it was designed (Government of Canada, 2007). Nonetheless, before officially launching it, we decided to pre-test it posting the link of the survey in a designer forum in order to test it in similar conditions to those that we would have eventually faced while collecting our data (Government of Canada, 2007). This action was aimed at collecting some feedbacks and at checking whether the way we designed it was effective and valuable to gain insights. Thanks to our test we figured out that initially the survey was considered too long for respondents, and since people did not know exactly the reason behind so many open questions, they resulted to be skeptic about the value of our questionnaire for a research purpose and hence less incentivized to fill it in. However, as soon as we implemented the suggestions, and we clearly explained our motivation for asking those kind of questions, we received positive comments from respondents about the questionnaire.

Thanks to such a pre-test we have been able to measure whether all questions were essential and/or adequate to our research purpose (Saunders et al. 2016). As a matter of fact, as we were noticed with the fact that the questionnaire was too long, we accurately examined all the questions following the feedback that the first respondents gave to us, and we realized that some of them were indeed not relevant for our research and thus could have been eliminated while other should have been modified. This step was very important because with the launch of the official questionnaire, we found the information collected very useful in giving support to our hypothesis, and very positive concerning our suggested solution. Through the questionnaire, we managed to figure out how the respondents find their inspiration and whether an organized system of information collection and knowledge modification and transfer would be useful to facilitate their phase of ideas generation.

4.5.2 Validity and delimitations

As already expressed in the section dedicated to the research design, we set some boundaries to the population of potential respondents, namely we submitted our questionnaire just to people who are somehow involved in creative processes, either due to their profession or studies. That is why our ideal sample would be composed for the 50% by professionals and for the remaining 50% by students. This in order to gain satisfying results from both perspectives. Considering that the sample is composed by 35 professionals and 34 students and that only one respondent did not state whether she/he is a student or a professional, we managed to get very close to the ideal composition just stated.

However, it should be taken into account that how we designed the questionnaire and the methods adopted to analyze the data collected posit some limitations to the validity of our findings, which will be expressed at the end of the dissertation in the section dedicated to the limitations (see Section 7). For now, nonetheless, we can anticipate that, especially for what concerns the process of data analysis and visualization, we had to make some very important decisions concerning what to exclude and what to keep for our analysis. This particularly considering the fact that, not only some responses were left blank, but also that among the responses given some were not relevant for the specific question.

This means that, from a methodological perspective, we gave ourselves some rules, in order to reduce the selection bias, which in any case was inevitable in some degree. Especially concerning the elaboration of the open-ended questions, we had to interpret complex thoughts expressed in long-sentences. Therefore, for this specific step, we decided to follow an inductive approach, for which we would read the answers and identify some patterns allowing us to group the responses under some key-words. Precisely, we decided to follow these steps:

1. Reading the responses
2. Identifying words that were repeated in more than one response
3. Setting a number for which such repetition could reflect the existence of a key-word
4. Once identified the key-words, labeling them with dimensions that were consistent with the issue tackled by the inquiry in question.

All of this was useful for our research because enabled us to better analyze the answers and good argumentations for our research question.

For what concerns the blank responses, two divergent choices were taken depending on the context. With regards to the demographics, visualized at point 4.3.1 of this section, we decided to represent the blank responses in order to "make the figures work", namely, to clarify that our statement of a balanced sample for what concerns gender and position (either professional or student) was reliable. Given that only the 1,43% of responses were left blank, notably, only one respondent over 70 did not provide an answer.

For the rest of the analysis, we had to make a different choice. In fact, especially for what concerns the open-ended questions, unfortunately many were the respondents not providing an answer. In some case, even half of the sample. However, we found the

answers provided by the remaining respondents very interesting and relevant for our purposes, therefore we decided to generate visualizations based on narrower groups, varying from case to case, but always specifying that the insights provided were not to be generalized for the whole sample. Despite all of this, when coding respondents' answers, we realized that they were giving us numerous new insights that we did not even consider possible when designing the questions. These new and fresh perspectives were very important for better tackling our research question.

Overall, then, our findings should not be inferred to a larger population of creative talents. In fact, we do not presume that our research might be significant statistically speaking but we hope it might constitute an interesting preliminary research for future studies.

5 Analysis:

what do the respondents think?

Specifically addressing the thematic areas “Ideas Generation” and “Re-utilization of existing ideas” of the questionnaire (See Section 3), this first part of the analysis has the final objective to present the data that allowed us to formulate the Findings 1,2, and 3, which we anticipate here:

Finding 1: digital technologies are acquiring a fundamental role in creative talents’ work
Finding 2: creative talents’ interests are not to be confined necessarily within the realm of arts
Finding 3: already existing but not marketed ideas can facilitate the creative process.

Starting from a presentation of relevant studies by Hemming (2008) concerning the information-seeking behavior of creative talents we then present the data about which tools, media and realms of interest our respondents showed to be interested in.
Moreover, thanks to the research by Oldham & De Silva (2015) and Hargadon & Sutton (2000) we also analyzed the data concerning the attitude of the respondents towards the use of already-existing ideas.

5.1 Creative talents’ creative process

5.1.1 Browsing among a range of sources

By trying to implement a user-centric library for art students in 1977, Derek Toyne discovered that, in order to be suitable also for creative minds, such as artists for instance, libraries had to provide information concerning practical and technical activity as well as inspiration.
Specifically, by interviewing art students, he realized that creative talents in the effort of acquiring new information and elaborating it into knowledge would patronize the library for hours, “browsing into subject areas also very far from art” (Hemmig, 2008). Also, Pacey (1982), noticed that students would look mainly for inspirational and visual information across several subjects, to the point that he defined them “compulsive browsers”.

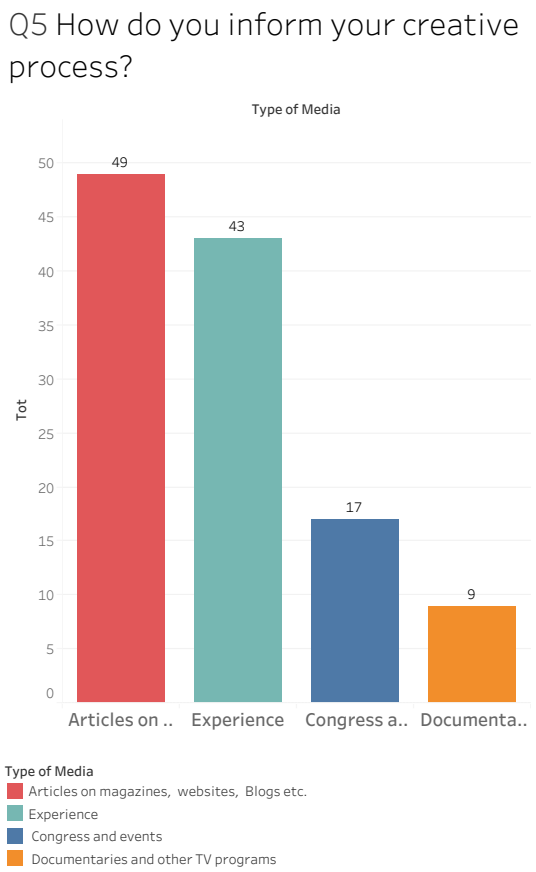
Particularly, he noticed how design students would use periodicals in order to get information about current trends. For what concerns professionals, Phillips (1986) realized that artists patronizing libraries had a need of information across different subjects in the form of periodicals, visual resources and how-to guides (Hemmig, 2008).

Bates (2007) provided a very comprehensive description of what "*browsing*" is. He identified such activity as a new model of searching which goes beyond mere information retrieval by implying a much wider variety of sources (Bates, 2007). He also proposed an alternative to the classical system implemented within libraries by claiming the need to "*stop trying to design systems that will target the desired information through perfect pinpoint match on the one best term: rather, design systems to encompass the answer by displaying and making it easy to explore a variety of descriptive terms. (...)"* Overall then, he proposed to facilitate the searchers' associative tendencies.

Being central to research by Pacey (1982), Phillip (1986), and Bates (2007), "Browsing" seemed an extremely relevant concept for our purposes. In fact, the traditional storage of materials and the classical system implemented in libraries appeared too rigid and not suitable to support such a model of research and retrieval of information (Hemmig, 2008; Bates, 2007). Stams (1995) digged in deep in such a matter by addressing the idiosyncrasies of artists' information-seeking behavior and understood that traditional libraries were often unable to support the browsing activity, especially given the lack of open stacks and comprehensive indexes for visual resources.

In this respect, we asked our respondents which media they would use to inform their creative process (Figure 5a) and, among those who answered, the majority confirmed that articles on magazines, website or blogs were the main source of inspiration. We also asked them which tools, would they use along their creative process, specifically whether more digital tools, analogical tools or both, in order to verify how much, they were familiar with the use of new technology for creative purposes (See Appendix, Q.8). The responses are visualized in Figure 5b and show that a minority of the 11.76% uses only analog tools, while the rest either a combination of analog and digital or only digital tools.

Moreover, we asked which realms would be the most preferred from which to grab inspiration to generate new ideas (See Appendix, Q.9) in order to investigate whether or not there was a ground on which to assume that *Browsing* could be a good model of searching for creative talents. Besides, we combined such results with those concerning the background and the "position" (whether they were students or professionals) with the goal of gathering more insights about our sample, as described in the next paragraph.



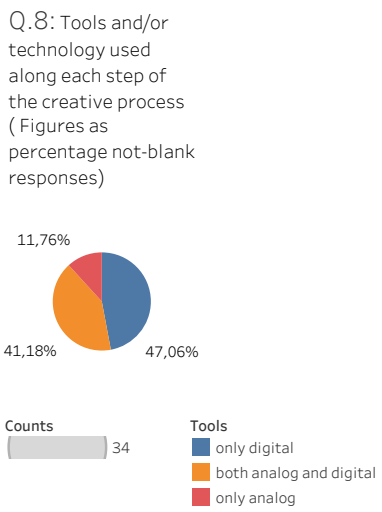


Figure 6b: Tools used (Analog vs Digital)

Figure 5a: Media to inform creative process

5.1.2 Background & Realms chosen for the categorization of Information

Despite of the fact that, "Background" can assume several meanings depending on the context, in informal language it can be associated to *"*the type of *experience,* training, *education,* etc. that a person has*"* (Dictionary C., 2018). In our questionnaire, we asked the respondents about their background in order to know more about them, as described in the methodology (Section 4), but also in order to eventually gather some insights that might reveal itself as useful later on. Eventually, this was the case, given the unavoidable connection between background and knowledge. It is common understanding, in fact, that "knowledge is acquired through *experience* or *education* by perceiving, discovering, or learning" (Dictionary O., 2018). Not to mention that, Zhang et al. (2015) stated that in the idea generation phase, the initial ideas generated derive from the explicit and tacit knowledge accumulated by each individual and that the more knowledge stock relevant to the creative task is available, the greater number of initial ideas can be generated.

Hence, we verified the respondents' areas of education and/or work experience, assuming that, depending on it, the respondents might dispose not only of different levels but also of different types of knowledge stocks which might influence the idea generation process. As already expressed, the majority of the respondents had a background in architecture (Figure 7a, 7b, 7c).

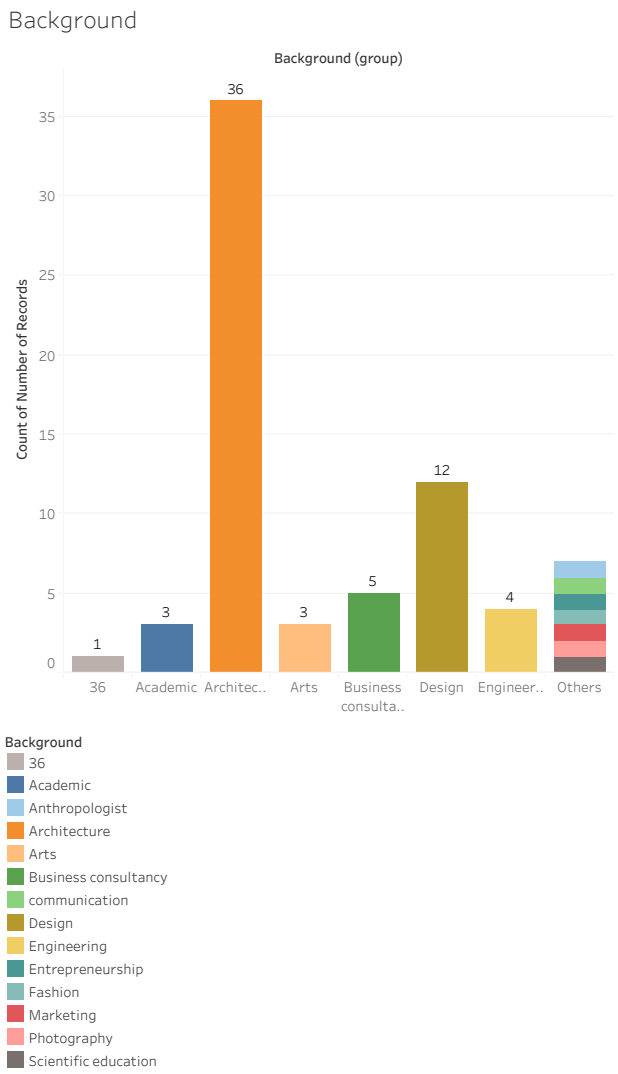


Figure 7a: Background composition

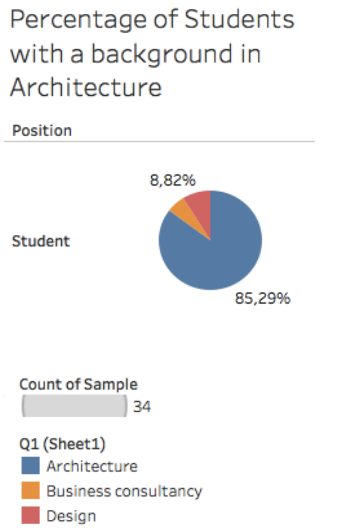


Figure 7b: Background for students

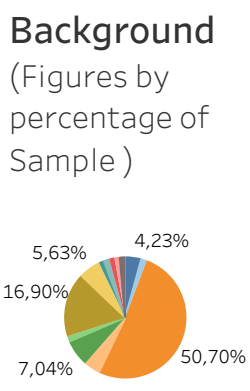


Figure 7c: Background by percentages

Historically, philosophers have speculated a lot about how knowledge is derived from experience. From Greeks to the most western contemporary philosophers and cognitive scientists have agreed that experiencing the world come instant by instant through people's senses and that what they actually learn from is a strongly subjective matter, which is often linked to personal interpretation. This is why, only "stable, abstract, logical and universal

categories can function as object of knowledge" (Rosch, 1999). Arguably then, a system of categorization is necessary for any human being to produce reliable knowledge necessary to form their thoughts, conjectures, concepts in general and ultimately, following Zhang et al. (2015) studies, also to generate ideas. In the effort of creating a suggestion of categories that might be valuable for creative talents, we asked the respondents to indicate which, among some realms we proposed, they would consider as necessary to take inspiration for generating new ideas. As we can notice by the charts, "Arts" is the most chosen realm in this respect (see Figure 8a). Considering the fact that more than 51% of our sample had a background in architecture (see Figure 7c), however, we decided to observe how the results would change by excluding both students and professionals in such a field, hence focusing on a sub-group of 40 respondents that we called Z (see Figure 8b).

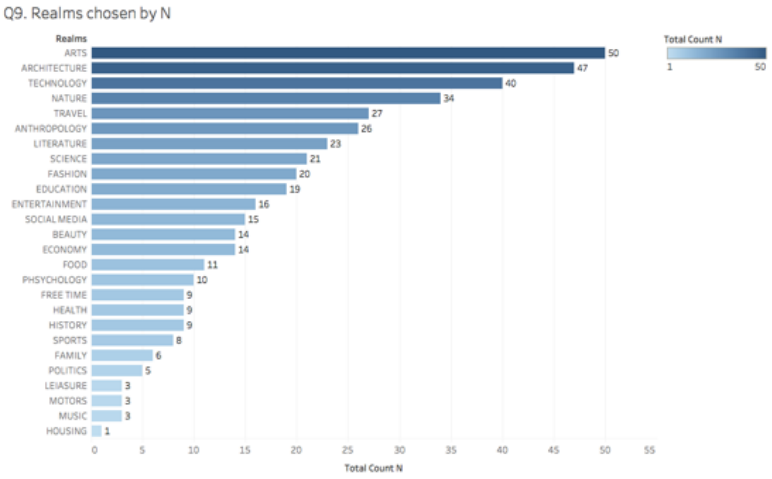


Figure 8a: Realms chosen by N

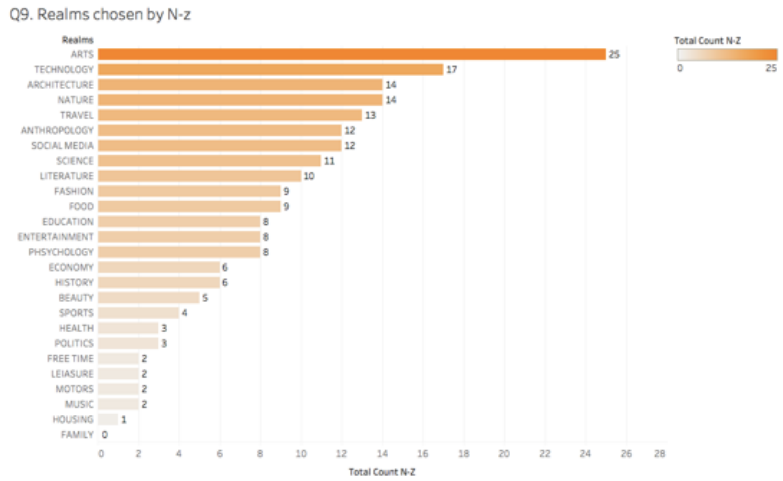


Figure 8b: Realms chosen by N-z

Moreover, we tried to see how much things would differ for students (x) with respect to professionals (y), too.

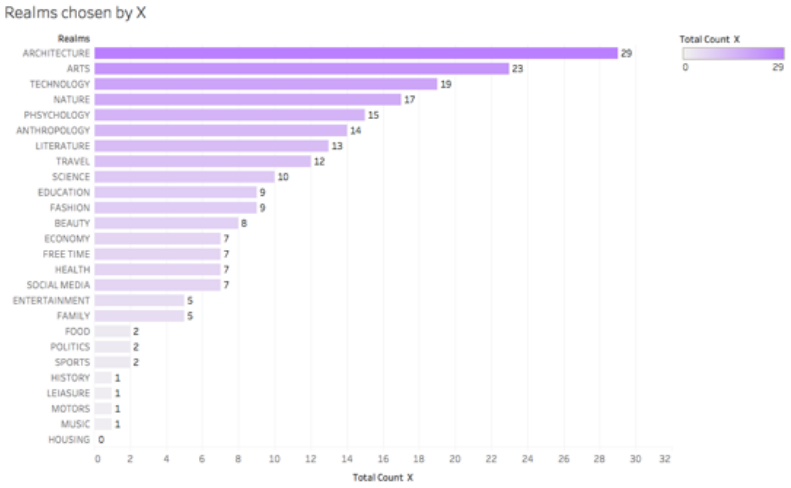


Figure 8c: Realms chosen by X

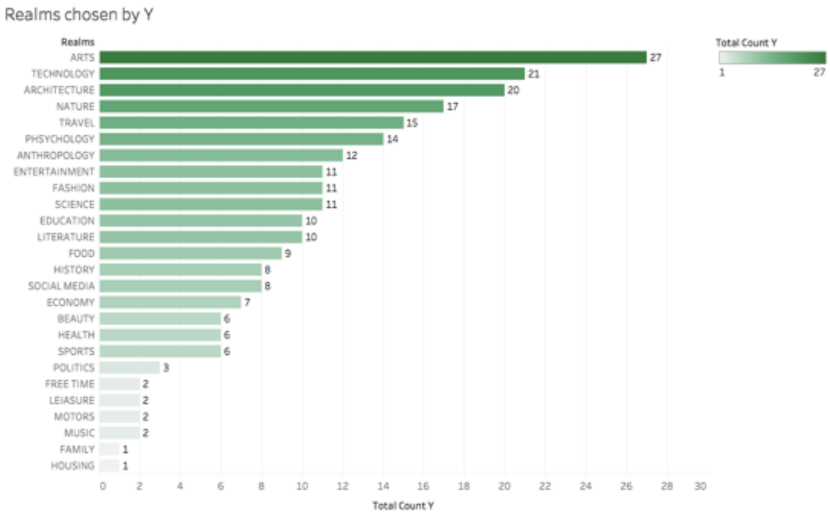


Figure 8d: Realms chosen by Y

Interestingly, the three most voted realms regardless of any manipulation that we performed on the sample, were always “Arts”, “Architecture”, and “Technology” for all the 4 groups just mentioned, even if in different percentages. We can see also in the next Table that in all the different cases the most voted realm is “Arts”, with the exception of the analysis concerning only the students, for which the most voted is “Architecture” (see Figure 8c). However, we should take into account the fact that the students in the sample have mostly stated to have a background in Architecture (see Figure 7b). It can be argued then, that the overall result for the sample was strongly determined by the students’ education field on one hand and by the professionals’ overall preference on the other.

Most voted Realms	N=70	N-z=34	X=34	Y=35
Architecture	67%	41%	85%	57%
Arts	71%	74%	58%	77%
Technology	57%	50%	48%	60%

N= whole sample
N-z= sample- respondents with background in architecture
X= students
Y= professionals

5.1.3 The initial step in the creative process

According to Oldham & De Silva (2015), the innovation process is generally divided in two stages: generation of ideas, and implementation of ideas. Previously, Gurteen (1998) defined the same process as the implementation of those ideas generated during the creative process. Even though Oldham & De Silva did not explicitly use the term "process of creativity", what can be noticed by these two lines of thoughts is that in both cases the generation of ideas is at the forefront of the development of innovative and creative solutions. On this basis, collecting information about how creative talents start their creative process would have been of fundamental importance to check the potential contribution of Moleskine Virtual Cognitive Lab in the initial phase of this process.

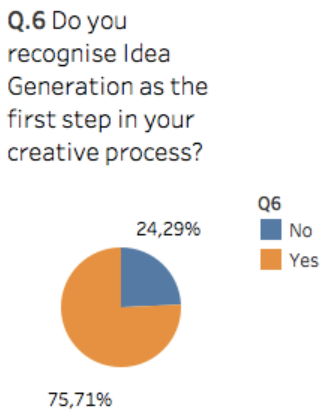


Figure 9: Ideas Generation Phase

As Figure 9 shows, more than the majority of the respondents identified the generation of ideas as the first step to take, giving support to the statements by Oldham & De Silva (2015)

and Gurteen (1998). Furthermore, it is possible to collect the motivations expressed by those who did not consider it as a first step in three main groups.

The first is grounded on the fact that before starting the development of an idea, it is important to understand the problem or unmet customer needs that should be addressed; while the second group considers the collection of information as a necessary antecedent to the phase of ideas generation. Lastly, the third group of answers mentioned inspiration as the fundamental catalyzer for idea generation. For this reason, identifying good ideas from other projects or from other people is considered the very first step in the process of developing creative outcomes by some respondents.

Despite their negative nature in relation to the question asked, these responses can be considered as very useful insights. Indeed, firstly they anticipated a topic that would have been touched upon later on (i.e. Question 7 about the collection of information, and Question 10 about the value of non-marketed ideas respectively, see Appendix Q.7 and Q.8) by further supporting the argumentation of our questionnaire and therefore of the analysis. Secondly, they give evidence to Medaille (2010) and Mumford et al. (2006) theories. As a matter of fact, according to Medaille's study (2010), artists seek information continuously along the creative process, while Mumford et al. (2006) stated that the collection of information is a "critical core process" for the creative thinking. With this regard, it is difficult to identify the collection of information as a specific step to undertake before, during or after the idea generation, hence it is understandable why some respondents suggested it as the initial step.

Moreover, for what concerns the identification of the problem as initial step, expressed mainly by the first group, it could be possible to state that any idea generation embeds the identification of a known or unknown problem to become valuable and marketable. Indeed, literature about innovation (e.g. Schilling, 2017 and Franke, von Hippel, & Schreier, 2006) and entrepreneurship, highlights the importance for ideas to have a problem-solving nature to be economically valuable. For instance, according to Shane & Venkataraman (2000) the discovery of opportunities meant as issues to be solved, namely the recognition that "a set of resources is not put to its "best use"", is part of the generation of entrepreneurial ideas. Additionally, authors such as Brown, (2008), Dew, Read, Sarasvathy, & Wiltbank, (2009) and Shah & Tripsas (2007) focused their articles in describing different approaches to better identify problems or needs.

5.1.4 Collection of information vs development of ideas

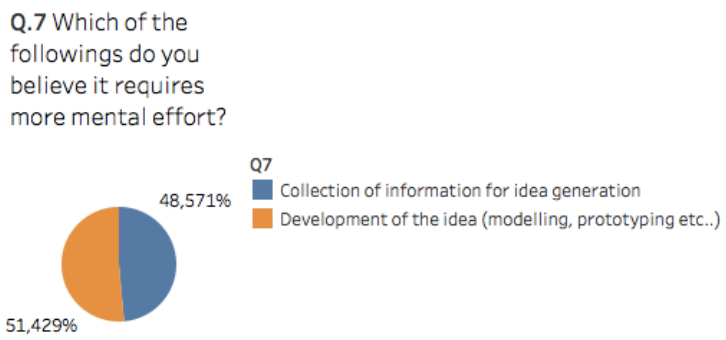


Figure 10: Collection of Information VS Development of ideas

Relying on Zhang et al. (2015) studies highlighting the distinction between ideas generation and ideas implementation, we decided to verify the attitude and the approach of our respondents towards the former. In the innovation management literature, the earliest stage of the development of any new product is defined as a "fuzzy front-end moment", and according to Reid & de Brentani (2004), it corresponds to the moment when all the time and activities are dedicated on an idea and this occurs before the first official meeting where the solution will be eventually discussed. Specifically, among the late fuzzy front-end activities the authors identified the "Generation of the idea" and the continuous "collection of information". Keeping this in mind, we asked what between the collection of information and the development of an idea, namely the modelling, prototyping etc, was considered to require more effort according to respondents. Our assumption in this respect was that the collection of information might result to be more mentally demanding, given that people need to span among an overwhelming amount of information and knowledge. However, as shown in Figure 10, we noticed that both steps are considered to be more or less equally demanding. This result is relevant for our analysis since it witnesses the fact that the collection of information might represent a struggling activity for the 49% of the respondents.

5.1.5 Existing ideas as a source of inspiration

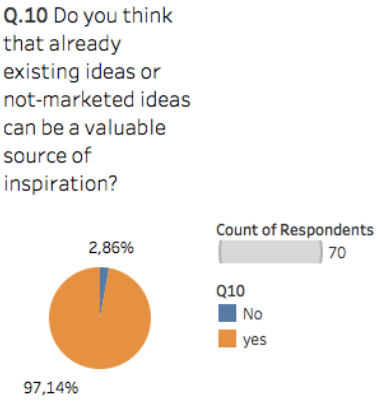


Figure 11a: Non-marketed ideas

Generally, there is the common belief that ideas that are "old" are not valuable anymore and thus they cannot be considered as a reliable source of inspiration. However, according to Hargadon & Sutton (2000) best innovations are not necessarily those that introduce something out of the blue, but instead are those grounded on existing "old" ideas and eventually modified, transformed, combined or adapt to new ecosystem or circumstances. Following this argument, ideas can never get "old" and hence "capturing good ideas, keeping ideas alive, imagining new uses for old ideas, and putting promising concept to the test" (Hargadon & Sutton, 2000) turn to be one of the fundamental practices to ignite creativity and develop innovation.

Considering this topic to be of relevant importance for our research, we collected creative talents' opinions concerning this perspective, and as Figure 11a shows, the 97% of respondents gave support to it. However, in order to understand the reasons that drove respondents to positively answer to this question, we asked them to justify their thoughts. Unfortunately, we got only 40 out of 70 responses, but among those who answered we found very valid argumentations. We identified overall six lines of reasoning classified in the following macro-groups displayed in Figure 11b: existing Ideas as a "stimulus" and as a "source of inspiration"; "requalification" of existing ideas; "problem solving"; "ideas as matrices of thoughts"; "mismatch between ideas and market"; "transformation" of existing ideas.

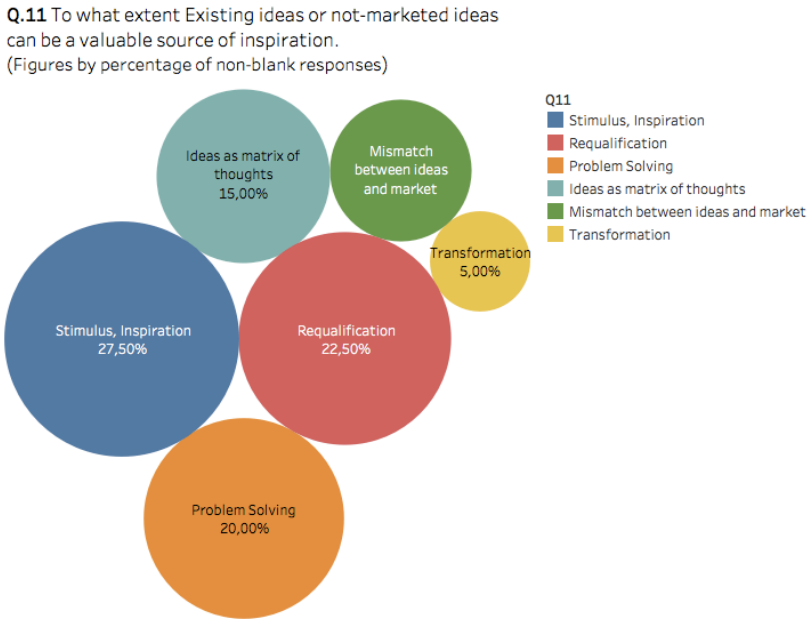


Figure11b: Existing ideas as a source of inspiration. Why?

Existing Ideas as a stimulus and as a source of inspiration.

The majority of respondents, the 26% (11 out of 30, see Figure 11b), considered "old" or not marketed ideas as a good source of inspiration, namely as stated by Hargadon & Sutton (2000) they see in other ideas the starting point from where to develop their own new ideas and thus as a stimulus for they own creativity. Specifically, the authors identify the imagination of "new uses for old ideas" as the third step in the so called "knowledge-Brokering Cycle"[7].

Requalification of existing ideas.

The second more diffuse thought, supported by the 23% of the respondents (see Figure 11b), was that old ideas can be requalified. Precisely, due to the time or the changes in the environment they might lose their perceived value and thus might not be considered to be creative or innovative anymore. However, if they are applied to different context or the meaning is re-interpreted, they can gain new value.

Christiansen et al. (2010) better explained this concept in their paper "Living Twice: How a Product Goes through Multiple Life Cycles", where they analyzed the

[7] The term that Hargadon & Sutton (2000) use to indicate the practice to use old ideas as raw material for new ones.

famous chair, "The Egg", life cycle. Indeed, they noticed that when the life cycle of this product seemed to be over, the reinterpretation of its meaning and the re-construction of its value, through the identification of new qualities, boosted its sales again, giving a new life to the chair. Hence, quoting one of the respondent's answer "You can give new meanings" to old ideas.

Problem solving.

The 20% of our sample (see Figure 11b) identified the reutilization of ideas as an effective tool to learn from previous ideas. As a matter of fact, as also stated in some of the answers, it is very difficult for an idea to be completely new, but there is, instead, a high likelihood that someone already faced a similar situation and thus came out with an analogous idea.

On this perspective, for some of the respondents, this aspect could be very relevant since those ideas would allow to gain knowledge about how and whether potential new solutions could work and be successful. For this reason, we categorized this line of thought as "Problem solving" since people can learn and apply what others did before them, as also stated by Hargadon & Sutton (2000).

Ideas as matrices of thoughts.

As already mentioned, no idea is usually born from zero. It is, instead, the result of the ri-elaboration and combination of previous and different thoughts. For this reason, we labelled respondents' answers supporting this perspective as "Ideas as matrices of thoughts", on the basis of Koestler's theory (1964), as anticipated in the theoretical framework. Precisely, the 15% of respondents seemed to share the same thought (see Figure 11b), and one of them clearly expressed that "Creativity is often just a twist on existing ideas"

Mismatch between ideas and market.

A fifth argument, supported by the 10% of our respondents (see Figure 11b), concern the fact that already existing but not yet marketed ideas can be valuable today even if by the time they had been generated they were not. In fact, ideas can be rejected or considered as not profitable investments for implementation because of a bad timing with respect to the degree of maturity of the market, which might prevent them to be suitable for a not-yet ready or a not-anymore-adapted ecosystem. For instance, in his article "Match Your Innovation Strategy to Your Innovation Ecosystem", Adner (2006) arose the issue that very often some ideas (intended as artifacts) might be too innovative to find a proper application due to an undeveloped ecosystem and hence, they result to be unsuccessful. However, if an

ecosystem might not be ready, it can develop with time, allowing the idea to be then eventually successfully adoptable. On this basis, we labelled all the answers that shared the same thought as "Mismatch between ideas and market".

Transformation of existing ideas.

The 5% of the respondents' answers belong to the category "Transformation" (see Figure 11b), the category that recognize the need for old and non-marketed ideas to be improved, recombined and adapted in order to give innovative results. According to Akrich et al., (2002) ideas, or more specifically products and services, are not always adopted in the way they have been initially conceived. Indeed, if an ecosystem is not favorable for their implementation, ideas might need to be "transformed" to better fit with the need of a specific context: "Failure, like success, rests on the mutual adaptation of a well-defined product and a clearly identified public" (Akrich et al., 2002). Following the sample answers, it seems quite clear that the respondents' justifications concerning the value for non-marketed ideas support the same perspective and hence, ideas can become successful when properly manipulated even though they were not earlier.

5.1.6 Reutilization of existing Ideas

In their studies Kim et al., (2009) arose the issue that nowadays the product life cycle is getting shorter due the fact that customers increasingly expect to have the possibility to choose among a vast variety of new products released in a short time span. This concern has a strong implication on the time available for designers, for instance, to think and eventually develop new solutions. On this basis we thought to ask to our sample whether they thought that having access to existing ideas would have indeed speeded up their creative process.

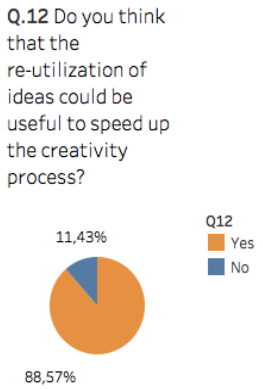


Figure 12a: Re-utilization of existing ideas

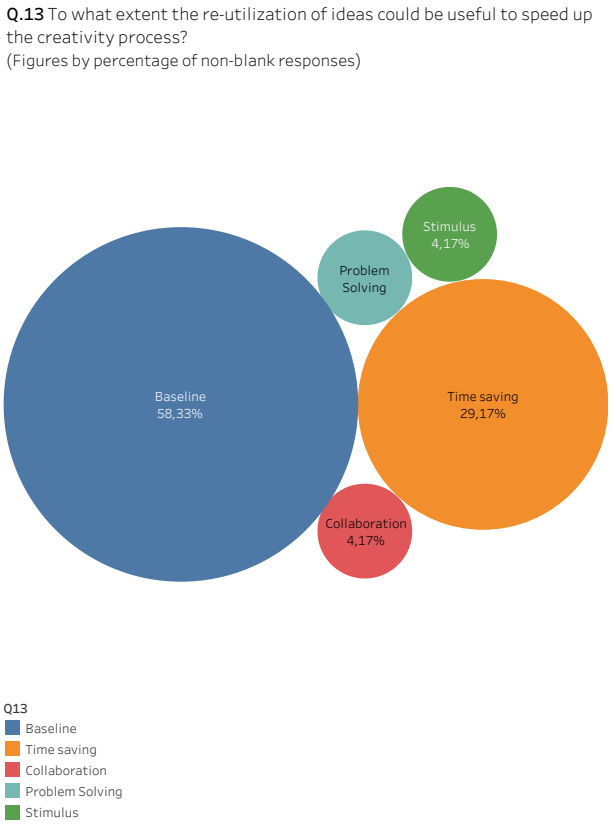


Figure 12b: Re-utilization of existing ideas. Why?

Among our respondents, as indicated in Figure 12a almost the 89% agreed on our assumption. However only 24 out of 70 provided an explanation for their positive answer and justified them by giving five main reasons, which we present here in three macro-groups:

Existing ideas as baseline.

In a sample of 24 respondents, the majority of them, namely the 58% who corresponds to 14 people (see Figure 12b), stated that existing ideas can be a good starting point for generation of new ones, hence the time that is usually dedicated to developing ideas from scratch, can be now reduced. This thought finds one more time correspondence with Hargadon & Sutton's theory (2000) since it supports the concept that existing ideas can be raw materials to build newer one.

Reutilization of existing ideas to save time.

The second largest line of thought (i.e. 29% of respondents) highlighted the fact that the re-utilization of existing ideas would be effective to reduce the time needed to carry out preliminary research (see Figure 12b). Indeed, since research on similar topics might have

been already done to develop ideas that eventually didn't find and application, people could leverage on already existing source of information and knowledge to reduce the searching time required. In their book, Tom and David Kelly (2013), explained that during brainstorming for the development of new products, teams' members came out with a very vast number of ideas that even though, of course, they can't be all implemented, they are still useful. For this reason, post-its where ideas are written down are usually stored allowing to be quicker in the generation of ideas process. Since during this phase information are collected to give support to potential solutions, it can be concluded that indeed existing ideas might represent a pool of already developed knowledge, as claimed also by Hargadon and Sutton (2000).

Reutilization of existing ideas as a form of stimulus, collaboration, and problem solving. The last three reasons behind the speeding up nature of the re-utilization of existing ideas have been given by the same percentage of respondents in our sample, namely slightly more than the 4% (see Figure 12b). Indeed, according to one respondent, using someone else's ideas corresponds to engaging in a sort of collaboration. As literatures highlights (e.g. Edmondson et al., 2009), collaboration facilitates the sharing of expertise and knowledge, hence it reduces wasting time and yields better outcomes. For instance, in New Product Development (NPD) process, the adoption of teams to foster collaboration among individuals lead to important organizational success. According to Edmondson et al. (2009) it allows to accelerate product development cycle and increase the quality of new products, mainly thanks to the fact that teams are cross-functional and thus any individual can contribute with his/her different expertise. Seeing the re-utilization of existing ideas as a collaborative form might probably require a more relaxed interpretation of the team working definition, but reasonably it can be stated that the respondents in question considered it as a way to indirectly gain hints from someone who has deeper knowledge about a specific topic.

One respondent stated that existing ideas might be useful to find solutions, therefore they act as "problem solvers". Following Franke et al. (2014) study results about application of ideas in analogous markets, the degree of novelty of an idea is related to the distance of the market in where it finds application. Namely, the more different the market is from the one that has been initially thought, the more original the idea results to be. On this basis, even though ideas are not new, they might still be innovative and play the problem solver role in fields that are very distant from their original one, reducing once again the time required for ideas generation.

Lastly, one respondent considered existing ideas as trigger for creativity, namely what we defined a “stimulus” and thus as a good tool to spark creative solution decreasing the time that alternatively would have been used to look for inspiration.

5.1.7 Summing up

To sum up, thanks to some of the questions that we addressed to our respondents concerning the thematic areas “Ideas Generation” and “Re-utilization of existing ideas”, we have been able to dig a bit deeper into the creative process and to understand how this important process for the development of innovative solutions actually occurs in creative people’s mind. Specifically, we found out that articles on magazines, website or blogs are the main media used by respondents to find inspiration, and that during this process digital technologies either are the main tools adopted or act as strong support for traditional ones. On this basis, it is possible to state that digital technologies have already acquired a fundamental role in creativity talents’ works (Finding 1).

For what concerns the activity of “browsing” from one subject to another as fundamental to inform the creative process, in particular three main realms have been identified as strongly contributing to spark creativity for our sample. These are “Arts”, “Architecture”, and “Technology”, followed by “Nature” and “Psychology”. However, as we take in consideration the respondents’ different backgrounds, the order of the most chosen categories changes. Nonetheless, in any case, “Arts" appears to be the most influencing realm for what concerns inspiration, which is reasonable if we think of Arts as the most broader instance of creative output. On this basis, it is possible to argue that creative talents need to “browse” from one subject to the other in order to gather inspiration (Finding 2).

The majority of the respondents in our sample identified the idea generation phase as the first step of their creativity process, and even though the collection of information did not result to be the most demanding activity compared to the development of ideas, it still represents a struggle for the 48% of the sample. Additionally, the respondents confirmed that by accessing existing ideas they can speed up the creative process since a lot of preliminary research can be skipped. With this regard the results indicate that, the collection of information could be easier yielding big time savings for people in the creative field. Moreover, seeing existing ideas as raw material for developing new ideas contributes to support the argument that time can be further reduced in the generation phase.

Lastly, we have discovered that even though ideas might be defined as “old” just merely for their position in the life cycle, our respondents consider them to be still a valuable source of inspiration, good problem-solving tool and ready to acquire new meanings and new value. Instead thanks to the development of a previous underdeveloped ecosystem, non-marketed ideas can result to be more successful than before. Overall then, it can be stated that existing but not yet-marketed ideas can facilitate the creative process (Finding 3)

5.2 Moleskine's community

Specifically addressing the thematic areas "Sharing of ideas as part of a community" and "The Value of a virtual cognitive laboratory" of the questionnaire, the second section of the analysis has two main goals: to highlight the positive aspects that a virtual cognitive laboratory might have for the users, and to present some data showing whether or not there are signals that such a system might be a new opportunity for Moleskine. Overall, then, this section has the primary objective to present the analysis of data that allowed us to formulate the Findings number 4,5,6,7:

Finding 4: Creative talents are prone to participate into a community and share ideas within it

Finding 5: Creative talents are willing to learn from each other

Finding 6: Moleskine Cognitive Lab, thanks to its functionalities, can facilitate the idea generation phase.

Finding 7: Through the adoption of Moleskine Cognitive Lab, users can identify new trends in the market.

Starting from the theories relevant for Communities of creative talents mainly by Dessart et al. (2015) and Wenger (1998), we then present the data showing which attitude the respondents would have towards sharing ideas and content within an online community.

Moreover, thanks to the research by Oldham and De silva (2015) and Verganti (2003; 2008) we show the respondents' expectations towards a Virtual Cognitive Laboratory in terms of its role in the ideas generation process. Lastly, we also analyze the data concerning the respondents' potential willingness to pay for a service such as the one proposed.

5.2.1 Access and share of ideas within a community

In the solution that we propose, the Virtual Cognitive Laboratory would be the media, ideally developed and promoted by Moleskine, through which a community of creative talents interact. A group of creative talents can be considered ideally as a group of people not only having common interests and (some of them) occupation, but also sharing a "repertoire", namely "the collection of resources that is required by and created by a common practice" (Wenger, 1998).

As already expressed, our aim was not only to discover insights about creative talents in the phase of ideas generation at an individual level but investigating also their aggregated needs at a community level. Hence, we needed firstly to verify our respondents' need to be in contact with one another sharing ideas and content as part of a community, regardless of whether or not the brand "Moleskine" was involved. All of this corresponds to our way to focus especially on what Dessart et al. (2015) called "Behavioral Engagement", a set of actions undertaken by online community members that can be distinguished in "sharing", "learning" and "endorsing".

Therefore, in the effort of verifying the existence of a ground from which to foster Behavioral Engagement, we addressed two sides of the same thematic area "Sharing of ideas as part of a community", namely, accessing other ideas on one hand and making ideas available to the community on the other. Arguably, behavioral engagement is particularly strong among what Wenger (1998) described as the "Community of Practice", namely, not only a group of people with a common occupation but "an entire environment characterized by mutual engagement, joint enterprise and shared repertoire" (Wenger, 1998).

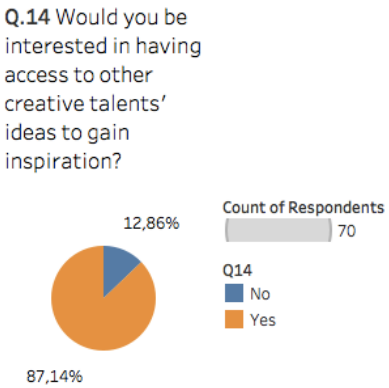


Figure 13a: Access to others' idea

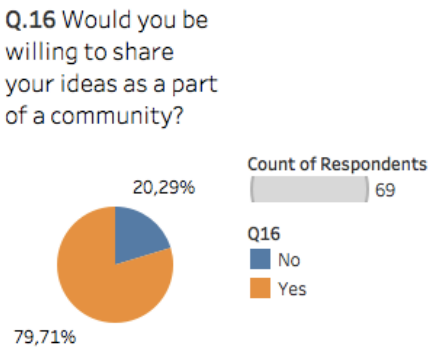


Figure 14a: Willingness to share own ideas

As we can see in Figure 13a, more than the 87% of the respondents were interested in having access to other creative talents' ideas, while almost the 80% were willing to make their ideas available to others (Figure 14a). However, we got only 29 out of 70 responses explaining the reasons behind the willingness to access others' ideas and only 25 out of 70 responses explaining why they would like to share their own ideas with the community. Nevertheless, among those who answered we found very valid argumentations, which we have grouped in several dimensions: "Perspective", "Collaboration", "Curiosity", "Baseline" and "Learning" (for what concerns "Access to others' ideas) and "Team-work", "Self-reward", "Feedback" and "Exchange of Opinions" (for what concerns "making your ideas available to the community"), as shown in Figures 13b & 14 b.

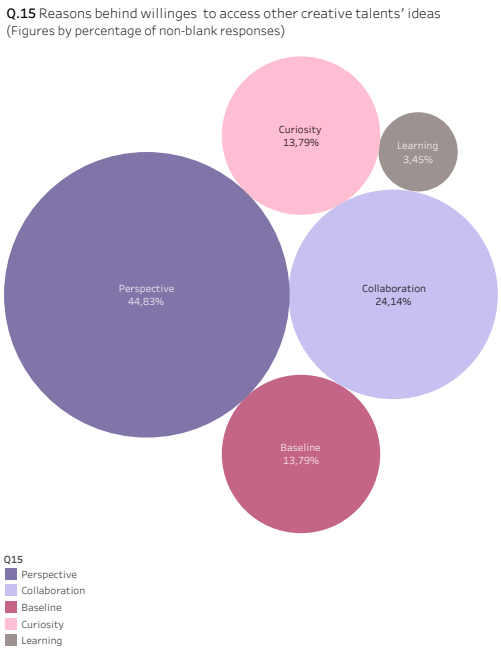


Figure 13b: Access to others' ideas, why?

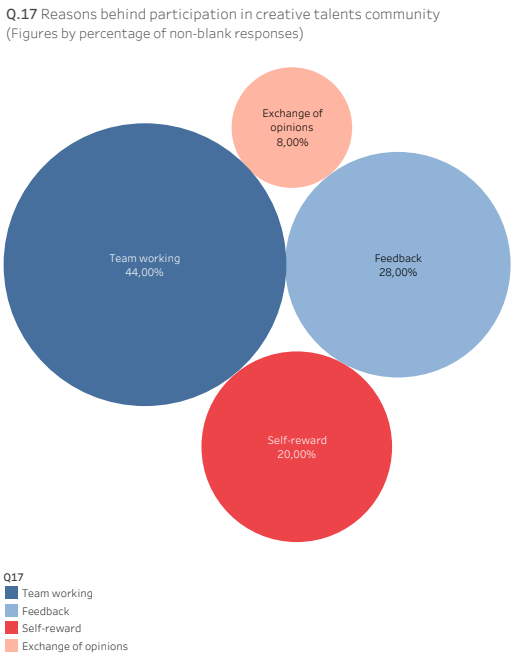


Figure 14b: Willingness to share own ideas, why?

Sharing ideas as a way to exchange resources.

By looking at the Figures 13b and 14b, it is possible to notice that the main reason behind the willingness to share ideas with others is the possibility to *gain different perspectives*, to *collaborate* with other creative talents (especially for what concerns having access to others' ideas, see Figure 13b), to resemble *teamwork* and to have *feedback* (especially for what concerns, making ideas available to others) for same or analogous issues. Moreover,

some respondents distinguished between having a "feedback", intended as the unilateral expression of an opinion about someone's own ideas, and the "*exchange of opinions*", intended as a bilateral relation which arguably is at the core of "sharing" in its broadest sense. Moreover, a factor that had been already identified as important concerning the "Ideas Generation" thematic area appeared to be determinant even for the willingness to access others' ideas. Namely, the fact that others' ideas can be considered as a *Baseline*, a point from which to start when the creative talent has issues or is stuck in the effort of generating ideas to tackle a specific issue. These responses confirm the statement by Dessart et al. (2015) that "Sharing is a way for online brand community members to exchange experience, ideas or just interesting content (…) driven by the motivation to provide resources".

Sharing as a way of learning.

For a minority of our respondents, moreover, having access to others' ideas can be also a matter of *Curiosity, Learning and Self-reward.* In the case of having access to others' ideas, in fact, curiosity might represent the formalization of an instinct for which creative talents are led towards the observations of things that have been created by others in order to be aware of the trends that concerns their field of interest (Dessart et al. 2015). In this sense, it might represent the main thrust behind the information-seeking behavior studied by Hemming (2008) and the need to browse from one subject to the other (Bates, 2007). Such an instinct, might be also what leads to a contamination of styles and techniques among creative artists as expressed by Wenger (1998), who in his research about the already mentioned Community of Practice stated that "Even our most private thoughts make use of concepts, images and perspectives that we understand through our participation in social communities". Moreover, he addressed the collection of resources that is required by and created by the practice as a "shared repertoire", almost as if there were the essential need of sub-collection of ideas that belong to everyone within the community and of which each artist needs to have acknowledgement. In this perspective, then, curiosity seems a fundamental requirement.

Learning, instead, is one among the three aspects of Behavioral Commitment as expressed by Dessart et al. (2015). By receiving feedback from knowledgeable members (or the brand itself) the members of the online community have the chance to acquire and modify their knowledge. "By searching to improve their experience, learn ore or fix issues, users show engagement which contrasts with passivity and avoidance of information typical of disengaged consumers" (Dessart et al., 2015). The author claimed also that individual work can be seen as individual response to the shared repertoire given that

“building an identity consists of negotiating the meanings of our experience of membership in social communities”, which in turn, he believed it was a strong implication that there is shared learning among artists.

Lastly, some respondents argued that overall the experience of sharing ideas within a community would be highly rewarding, in non-pecuniary terms, of course, but in a perspective of self-improvement and credibility acquired within the community. Notably, making own ideas available to others exposes the creative talent to criticism which require a good level of confidence about the idea, which in turn is reasonably higher, the higher is the quality of the idea itself. Overall, then, sharing ideas can corresponds to a declaration of confidence about the value of your own work and as the same time, the higher number of people willing to have access to your ideas, the more confident you are that the community gives you credits for you work. Overall then, this represents a virtuous rewarding cycle. In several cognitive studies, all of this has proven to be true for the disclosing of any kind of information about the self (Tamir & Mitchell, 2012) and has a lot to do even with the third type of Behavioural commitment stimulating engagement as expressed by Dessart et al. (2015): Endorsing, namely, “the proactive attitude of respondents who recommend specific topic, or object of knowledge in general to other community members”. In fact, by endorsing someone else’s ideas, arguably, each community members’ confidence is fostered even further.

5.2.2 MVCL as facilitator for idea generation

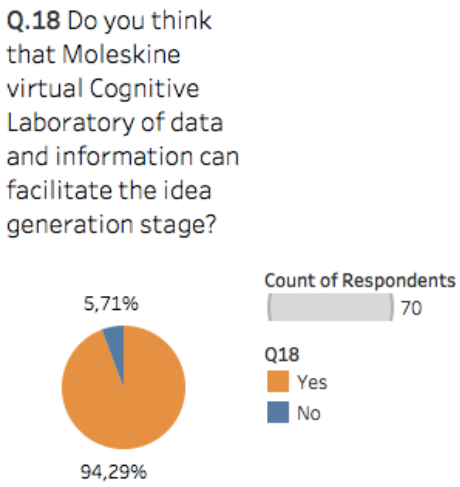


Figure 15a: MVCL as facilitator in ideas generation

After gaining information concerning the process that lead people to come out with creative solution, we decided to investigate about the potential impact that MVCL could have on the idea generation phase and thus whether it could be valuable for Moleskine's users.

For this reason, we interrogate our respondents about whether they perceived this system to be of aid during the idea development stage, or not. As can be noticed from the Figure 15a, the 94,29% of them had a positive opinion about it, namely they considered MVCL to be able to facilitate the process. Only the 6% of people answered negatively, and they justified their answer saying that they didn't have enough information to ground their answers, and thus not that they didn't consider it as useful at all.

In order to know more about why the system could have facilitated that, and why it could have been valuable for users, we analyzed respondents' open answers, that unfortunately have been given only by 19 respondents, and we identified six main motivations: stimulus, time saving, enrichment, self-reward, extended vision of the world, added value.

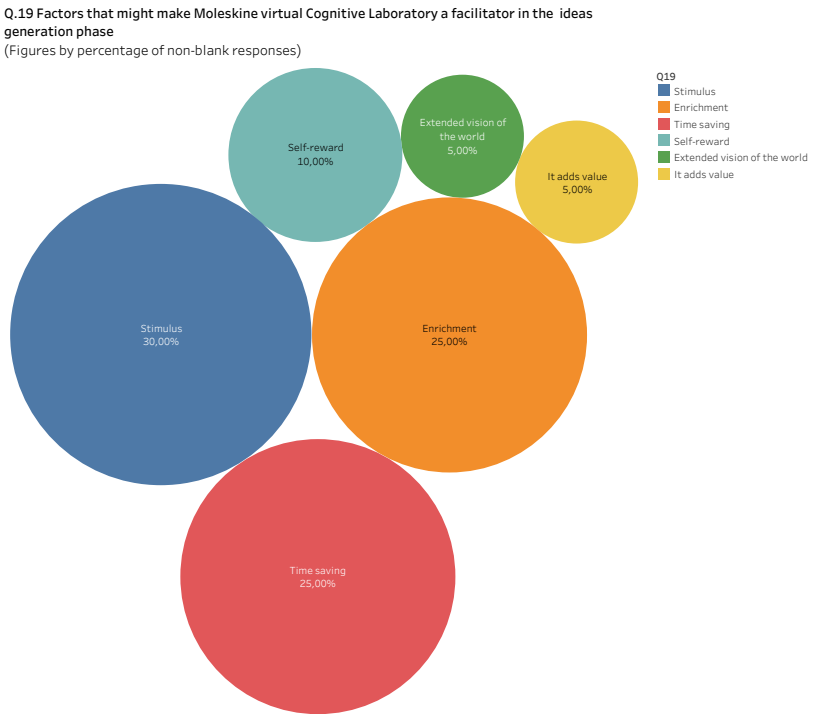


Figure 15b: MVCL as facilitator in ideas generation phase. why?

Stimulus.

The majority of the respondents, the 30% (see Figure 15b), stated that thanks to the possibility to share own ideas, have access to others', and have a vast source of information and knowledge available about a large number of topics, they can easily find what they need to nourish their creativity and to give support to it. In their article, Oldham and De silva (2015) stated that information has to be unique and diverse in order to act as stimulus for creativity. Specifically, they motivated their assumption claiming that if information is of this nature, it will possible for people to come out with larger creative combinations that will eventually emerge in more creative ideas. In this sense, referring to Brinck's theory (1997) about the temporary re-categorisation as source of creativity, the more vary information are, the more comparisons among different knowledge domains would be possible and thus, it will be more likely for people to find alternative, creative, solutions.

Time Saving.

For the 25% of people who decided to answer to the question (see Figure 15b), the MVCL resulted to be a good solution to reduce time needed in collecting information and finding inspiration. As a matter of fact, users won't need to conduct time-consuming activities

before the actual generation of ideas because they will find in the system the majority of information and knowledge that they might require for projects.

Additionally, one respondent claimed that thanks to this system it would be easier to gather valuable information because they will be reliable and well organized in just one site and thus, there won't be the uncertainty about where to find them among the overwhelming sources that are now available with new technologies.

It is possible to state that this motivation find also foundation in Heintz's thought (2008) about the fact that one of the most current issue is "making sure that the most available sources of information are actually the most worthwhile". In this sense, due to the facility with what people can now produce and distribute information, it has become a relevant concern being sure that information that have been used are valuable and that they are not too much widely distributed which would otherwise involve time to retrieve them and to assess their validity.

Enrichment.

Among the 25% of the respondents the possibility to share ideas (see Figure 15b), insight and knowledge represents a relevant functionality of the system to increase personal knowledge. As a matter of fact, MVCL won't be just a device to stay updated with current topic-related articles, but it would also allow people to gain knowledge in alternative ways such as other members' experience. In this way, according to respondents, from the direct or indirect communication with other talents the idea generation would find an additional support.

Self-reward.

For a smaller portion of respondents, the 10% (see Figure 15b), the system would be an effective way to motivate the user to constantly create something new since the pressure perceived from other peers, in this case other users, might leads creative talents to feel more incentivize to generate innovative solutions.

Furthermore, the appreciation or non-appreciation expressed upon users' creation would stimulate continuous improvement. As a matter of fact, receiving socioemotional support from co-workers, supervisors, family, clients, friends etc. can strongly influence the persistence in the development and refinement of truly new ideas (Oldham and De silva, 2015).

This aspect can be identified also in Sorauren's paper (2000) about non-monetary incentives within an organization. Even if we are not talking about an organization, however, the effects that the sharing of ideas and opinions as part of a community can

involve, might show similar behavioural patterns as what usually occurs in organizations. Indeed, *intrinsic* and *trascendental motives* that according to the author stimulate employees to work more efficiently and effectively within a company, can also determine the community users' propensity to create more and better. Namely, the former recognizes personal motivations (i.e. interest in the topic) as main drivers for the individual action, while according to the latter, the action is carried out taking in consideration the consequences of that action on other people (Sorauren, 2000). Specifically, if people perceived that their action would have positive consequences on others, they would be motivated to carry it out, and to do it in the best possible way.

On this basis, talking about users in the Moleskine community, some of the respondents claimed that the idea that other people could enjoy and find useful and helpful what has been shared by them would strongly motivate them to create and share more.

Extended vision of the world.

According to the 5% of respondents (see figure 15b), the adoption of this system would allow to gain different perspectives and thus open the mind of the users and change their way of seeing problem or other issues.

In relation to this, Oldham and De silva (2015) stated that the access and exposure to diverse ideas and perspectives can positively contribute to creativity since it would "energize" the production process of ideas giving support to users' answers.

Added value.

Finally, the 5% of the respondents (see Figure 15b) stated that this new potential Moleskine's system would present functionalities that can be found just in separate "ideas management software services". For this reason, it would represent something innovative and very convenient for the user since it would avoid the need for subscriptions to several independent services in order to enjoy what Moleskine would offer.

5.2.3 The identification of trends

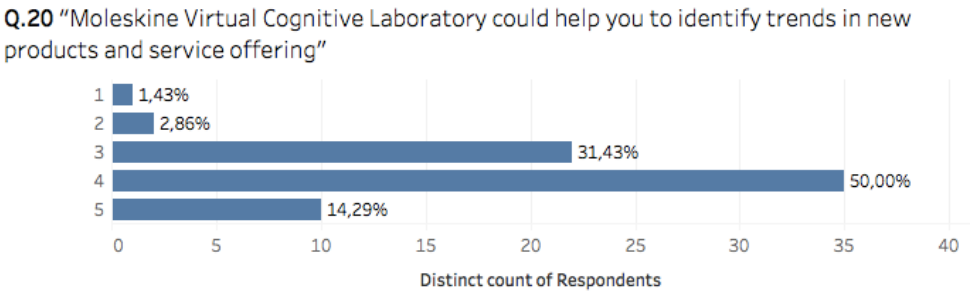


Figure 16: MVCL facilitating the identification of trends

Having a solid background has been identified by Brinck (1997) and Zhang (2015) to be a key element in the development of creative and efficient solutions. Indeed, according to them, accumulating broad experience and deep knowledge allow to generate a greater number of initial ideas.

Although Verganti (2003) focused more on the field of Design, he gave a similar perspective. He claimed that in order to make a difference, designers should undertake the role of proposers, namely instead of providing consumers with something that is in line with what they might want, designers should dare to proposed something that they don't expect at all, and thus propose new meaning. Kano defined those kind of needs as "excitement needs" and he qualified them as needs that people don't know to have and as being able to reward a superior return if satisfied (Kano et al., 1984). Nonetheless, given the unknown nature of such needs, designers should have a strong knowledge about socio-cultural model in the industry setting that will allow them to predict potential future new trends (Verganti, 2003). For this reason, as Brinck (1997) and Zhang (2015) assumed, even though they didn't specifically refer to social trends and needs, narrow knowledge would limit the quality, quantity and novelty of ideas generated.

Based on this perspective, we asked to our sample whether they thought that through the adoption of MVCL it would have been possible to acquire enough insights and knowledge to foreseen new potential trends. Our hypothesis has been based on the fact that as Verganti suggested, the sharing of different opinion and perspective (Verganti, 2008), together with the access of a broad number of relevant articles, would have allowed users to easily identify some common path that would eventually aid the development of unexpected solutions.

In order to investigate to what extent respondents thought that such a system would have provided them with this possibility, we designed our question using a linear scale going from 1 to 5 and asking to the sample how much they agreed with our assumption: 1 totally disagree, 2 disagree, 3 agree but have some concern, 4 agree, 5 totally agree.

Analyzing the result, we observed that 35 out of 70 respondents (50%, see Figure 16) agree with our statement and 10, 15%, totally agreed. 22 people, namely the 31%, agree but with some concerns, and just 3, the 4%, disagree or totally disagree. Hence, grouping the results, the 65% of the sample considered MVCL as an effective tool to foresee potential new trend that would allow to deliver unexpected offering, and 31% identified in that just as a support to the process. Lastly, just few people didn't believe that it could be of any help.

5.2.4 Potential Users' willingness to pay

Having collected positive feedback from the majority of the respondents concerning the implementation of a system of categorization of information and of sharing of ideas to the benefit of knowledge acquisition and transformation, we also asked the respondents whether or not they would pay for using a virtual cognitive laboratory.

Figure 17a: Willingness to pay

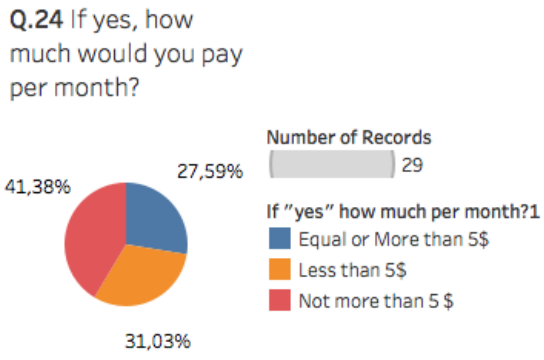


Figure 17b: Willingness to pay, how much?

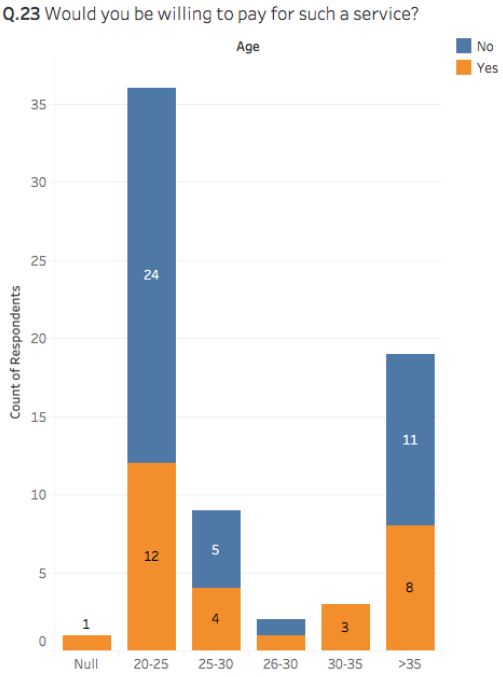


Figure 17c: Willingness to pay according to age

As Figure 17a shows, although not being the majority, more than 41% of respondents stated that would pay for such a service. Moreover, it should be considered that, being the sample not homogeneous for what concerns age, we found that the majority of the respondents belongs to the range of age that goes from 20 to 25 years old included, followed by respondents who are over 35 (see Figure 17c). This means that on the overall count of people who would like to pay it is these two categories of respondents who mostly affected the result (Figure 17c). Among those who would like to pay, however, the data shows that the majority of the respondents would not be willing to spend more than 5$ per month.

5.2.5 Summing Up

To sum up, concerning the thematic areas "Sharing of ideas as part of a community", "The value of a virtual cognitive laboratory" we have discovered that the majority of our respondents would be willing to both have access to other creative talents' ideas and to make their ideas available to others (Finding 4). Moreover, we discovered that among the reasons behind such a positive approach towards sharing there is the need to share resources in order to gain different perspectives and the belief that collaborating as a team can lead to better creative outcomes. Besides of that, the insights the data analysis returned show that sharing is considered as a way of learning and that in this respect the bilateral exchange of information is fundamental in the production, acquisition and transformation of knowledge in the form of a "shared repertoire" (Wenger, 1998) (Finding 5).

We were able also to collect feedbacks about whether and why the Moleskine Virtual Cognitive Lab could be valuable for users and the 94% of the respondents claimed to be on favor of its adoption (Finding 6). We collected very different motivations about why our solution could be useful, such as "it is a tool to stimulate and ground creative ideas", or "it could be a way to incentivize the creation of new solutions and be helpful to other people" or again, "it can reduce the time usually needed to look among difference sources of information. Additionally, many considered it to be an interesting tool to gain new experience and knowledge besides the more traditional way since it would allow to connect with other expert from other fields. Finally, a smaller percentage of people responded that MVCL could give the possibility to have access to other perspectives and ideas which, according to them, would positively influence their creative process outcome, and that the system represents something new and convenient giving its functionalities.

Additionally, we observed that the exposure to such a large amount of knowledge and information has been considered by the majority of the respondents, 65%, to have a positive influence in the identification of new market trends (Finding 7).

Lastly, we realized that a positive attitude towards sharing and positive expectation towards the usage of a virtual cognitive laboratory does not necessarily translates into willingness to pay for all the respondents.

5.3 Factors influencing MVCL adoption

The last section of the analysis continues the presentation of the insights collected from the thematic areas "Sharing of ideas as part of a community" and "The Value of a virtual cognitive laboratory" of the questionnaire. It specifically addresses the potential trust issue that could arise from the sharing of information among members as part of the Moleskine community. This section is of relevant importance to understand which could be the potential factors that could hinder the adoption of MVCL (Moleskine Virtual Cognitive Laboratory) and hence reduce the overall value of our solution. Specifically, this third section of the analysis has the final objective to present the analysis of data that allowed us to formulate the Findings number 8: "The sharing of ideas doesn't represent a reason of concern among potential users".

Therefore, hereby we analyze the responses by our respondents about what might prevent them to use a virtual cognitive laboratory comfortably, in the eventuality that Moleskine decided to develop one. Starting from the theories Dwyer et al. (2007) we introduce the topic of trust among users online and then continue by presenting the main concerns for the respondents.

5.3.1 The fear of sharing

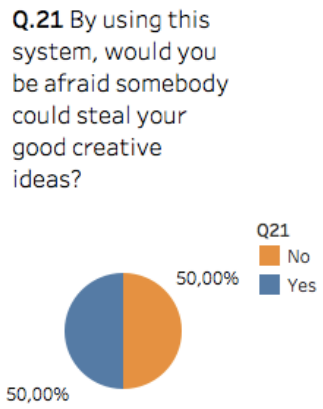


Figure 18a: Afraid of sharing

According to Dwyer et al. (2007) trust is the main factor regulating online digital interactions and more in particular, it is the factor that determines people's willingness to share information and engage into relationship; it is defined as "the willingness of a party

to be vulnerable to the actions of another party [...]" (Mayer, Davis, and Schoorman (1995) in Dwyer et al., 2007).

With this regard, in order to assess to what extent a potential user would trust other users and thus would actively participate in the potential new Cognitive Lab community, we decided to investigate whether using such a system he or she would be afraid to see his/her own ideas stolen, and if yes, what were the reasons. From the results, we found out that 50% of our sample agreed on the fact that it could be a risky consequence indeed, while the other 50% claimed that they didn't considered it such a relevant issue (Figure 18a).

5.3.2 Reasons of potential resistance

Thanks to the responses, it has been possible to identify three main reasons that could potentially determine a reluctant attitude among users in adopting the MVCL.

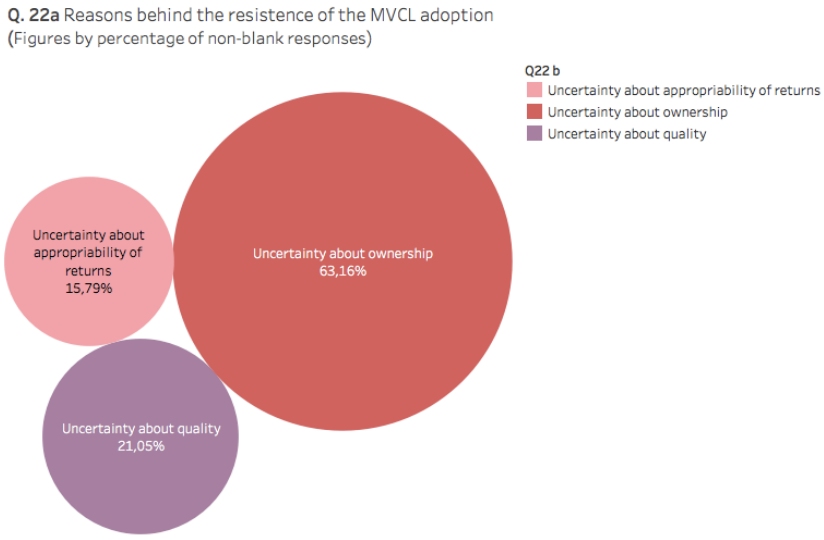


Figure 18b: Afraid of sharing, why yes?

Uncertainty about ownership.

The most supported one, specifically from the 63% of the respondents that correspond to 12 people out of 19 (see Figure 18b), concerns the uncertainty about ownership that could result from the sharing of ideas. As a matter of fact, for many respondents there is a high likelihood that other users could access to the community merely to copy other ideas instead of contributing to share opinion, perspectives and own ideas.

Uncertainty about quality.

The 21% instead arose the issue of the uncertainty about quality (see Figure 18b), which could be also identified as a consequence of the previous motivation. Namely, if users are afraid that their ideas could be stolen, they would be more prone to share just those that they don't consider to be very valuable, inducing others to do the same and hence, decreasing the overall quality of the community system. As a matter of fact, according to Lin et al. (2009), trust is the determinant for the quality of the content shared, hence, low trust will negatively influence the quality of the information and knowledge shared.

Uncertainty about the appropriability of return.

The last reason is about the uncertainty about the appropriability of return. Indeed, the 16% of the respondents (see Figure 18b) stated that sharing their ideas with someone else, who potentially could have more resources to better implement them, could lead to de-motivate people to "spend time generating ideas for a project" if they "would not get compensation for that", as one of the respondents expressed.

This perspective find support also in innovation management literatures, specifically, in their article "The benefits and costs of strong patent protection: a contribution to the current debate", Mazzoleni & Nelson (1998), stated that patents are strong motivators to "useful invention" and that when individuals or companies own a patent, they are more motivated to commit resources for the development of an invention. Indeed, if inventors have enough ability to capture profit from their innovation (also defined by Teece as appropriability, 1987) they will be more motivated to invest effort in developing something new.

5.3.3 Favorable reasons for MVCL adoption

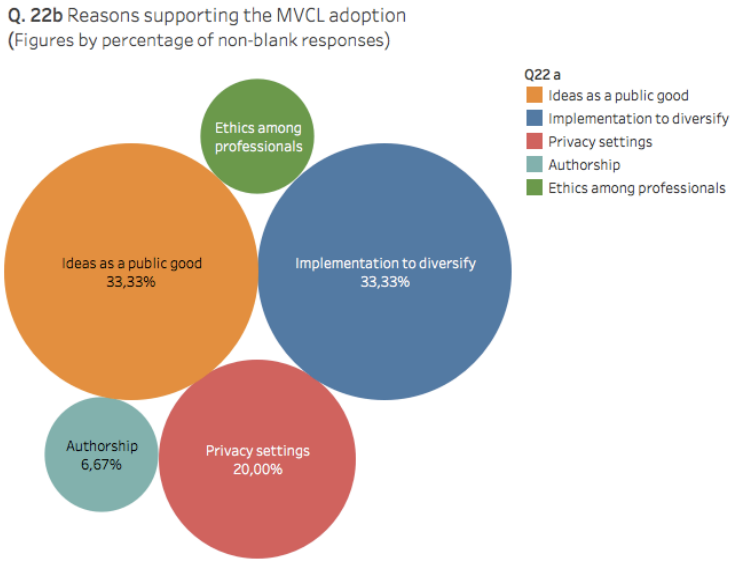


Figure 13c: Afraid of sharing, why not?

Among those that claimed to be not particularly concerned about the possibility to have their ideas stolen and that also answered to our open question, namely 15 people, we identified five line of thoughts that we classified as: implementation to diversify; ideas as a public good; privacy settings; authorship and ethics among professionals.

Implementation to diversify.

As it has been already mentioned previously, Gurteen (1998) and Oldham & De Silva (2015) identified the innovation process as divided into two steps: idea generation and ideas implementation. Additionally, in his article "Creativity is Not Enough", Levitt (2002) criticize the fact that for people the distinctions between ideation and innovation is generally blurred, namely they tend to identify them as synonymous while there is a strong border line between the two. Indeed, while the former is about the generation of ideas, the latter, is one more time about implementation.

These assumptions find a strong support among the 33% of respondents who claimed not to be afraid of ideas stealing because what it really matters is how ideas are implemented (see Figure 18c). Specifically, according to one of the respondents, given the different personalities and hence the possible different interpretations, individuals would very hardly implement the same idea in the same specific way. Just like ideas assume different values according to the different individual's emotional, physical, intellectual and

spiritual reaction (Pine & Gilmore, 1998), analogously ideas are with high likelihood interpreted and thus implemented differently.

Furthermore, according to Baer (2012), ideas implementation depends on different factors and one of those is the personal motivation. In the article "Putting Creativity to Work: The Implementation of Creative Ideas in Organizations", the author highlighted this fact stating that "the link between creativity cannot be properly understood without considering the simultaneous influence of both personal and relational contingencies" (Baer, 2012). In this sense, even though ideas are produced this doesn't mean that they will be implemented and if they will, the implementation is not necessary successful.

Ideas as a public good.

As shown by the (see Figure 18c), another 33% of the respondents in our sample claimed that as ideas belong to everyone, it is not possible to be afraid that someone could "steal" them. As a matter of fact, ideas are produced by humans and hence they can be defined as "goods", but as Sorauren (2000) supported, they don't belong to the material world and thus they are not "material good". Furthermore, quoting St. Thomas Aquinas and J.S. Mill, Sorauren (2000) claimed that differently from material goods, ideas can't be owned by people; they are not like material assets that are inherited by a single person, but since they are not subjected to consumption limits and hence they aren't scarce in nature, they are available to everybody: "A good is "public" if providing the good to anyone makes it possible, without additional cost, to provide it to everyone" (Sorauren, 2000).

Additionally, the most diffuse thought concerns the fact that according to them, ideas are the outcome of the interrelationship among social, material and intellectual dimensions and for this reason, it is not possible for an individual to claim to be the one and only responsible for the generation of an idea. Recalling Rosch's theory about categorization (1999), the individual's ability to think derives from the process of categorization of anything, from objects seen to events attended or conversation sustained with family, friends or acquaintances. With this regard, if it wasn't for the relation with other people or the environment, individuals wouldn't be able to generate thoughts and thus ideas.

Privacy settings.

A third group, the 20% (see Figure 18c), assumed that as social media and other online community solutions give the possibility to customize the privacy settings, the same thing would be possible with the Cognitive Lab community. For this reason, they believed that

there is no reason to be worried about potential theft, because each person would be able to decide what, when and how share their personal thoughts.

This motivation is in line with the study about "Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace" carried out by Dwyer et al. (2007). Indeed, according to them, a more strictly privacy setting might contribute to decrease the concern about the possible consequences of revealing personal information, because users would perceive lower risk of "privacy vulnerability".

In regard of Dwyer et al. theory (2007) and the respondents' assumption, the presence of restrictive default privacy setting would relief potential users from the fear that someone could appropriate their ideas, and it would instead motivate them to disclose more depth and reliable information (Dwyer et al., 2007).

Authorship.

The 7 % of the sample (see Figure 18c), namely one out 33 respondents, motivated the absence of concern about the topic, assuming that any information and idea that will be disclosed would probably state the personal references of who developed it.

Ethics among professionals.

The very last motivation given by one of the respondent (see Figure 18c) is grounded on the belief that those who would make use of the community and thus would have access to the information and other users' ideas would be mainly professionals. For this reason, according to him, they won't be interested in stealing but just in sharing feedbacks, thoughts and their own ideas, and in case they would use ideas generated by someone else, they would do that with the mere intention to modify and adapt them to his or her way of thinking.

5.3.4 Summing up

To conclude, with our investigations we found out that for what concern trust among community users, our sample' opinion is balanced: 50% would be afraid to share ideas and thoughts with others, while the other 50% doesn't consider it as an issue to be worried about (Finding 8). Motivations supporting both answers have been very interesting to analyzed since gave two different perspectives.

On one hand, those that positively answered to our question, and thus claimed to be concerned about possible misbehaviors of other potential members of the community, grounded their concern on the fact that it will be uncertain the identity of who developed the ideas, the quality of the ideas that would be shared and the owner of the right to receive eventual compensations as a result of an economic success.

On the other hand, instead, the motivations of those who negatively answer to the question let us understand that privacy settings, authorship, and ethics among professionals would act as barriers to potential unfair attitudes of other members. Furthermore, the distinction between implementation and generation of ideas would hinder the copying activity. Indeed, different motivations and interpretations of already developed ideas would influence the way they will be implemented and eventually their success. Lastly, given the fact that according to some respondents' ideas are not material, hence they can't be owned by a single individual, and that they represent the outcome of the interaction with other entities, it would be unreasonable to be afraid that someone could steal them.

6 Discussion & Conclusion

6.1 General Observations

As the reader might have noticed, the analysis was designed in order to address each part of the research question. Hereby this section, we interpret the results stemming from the data analysis.

In a nutshell, we can recap our findings in 8 main points:

Finding 1: Digital technologies are acquiring a fundamental role in creative talents' work.
Finding 2: Creative talents' interests are not to be confined necessarily within the realm of arts.
Finding 3: Already existing but not marketed ideas can facilitate the creative process.
Finding 4: Creative talents are prone to participate into a community and share ideas within it.
Finding 5: Creative talents are willing to learn from each other.
Finding 6: Moleskine Cognitive Lab (MVCL), thanks to its functionalities, can facilitate the idea generation phase.
Finding 7: Through the adoption of Moleskine Cognitive Lab (MVCL), users can identify new trends in the market.
Finding 8: Intellectual Property rights represent a reason of concern among potential users of MVCL.

The overall discussion pivots around two main aspects of the investigation. On one hand, the benefits that a Virtual Cognitive Laboratory implemented by Moleskine can provide to both a community of creative talents and the company itself; on the other hand, the benefits that the basic functionalities of such a system might provide to the individual user, who we assume to be a creative talent. However, it should be taken into account that any statement made on the basis of our findings should not to be inferred to a whole population of creative talents but rather considered as a collection of insights on which to build a research in future, as it is expressed more clearly in Section 7, "Limitations, further research and implications for practice".

6.1.1 MVCL to inform the ideas generation phase

Specifically concerning the first part of the analysis, by addressing the thematic areas "Ideas Generation" and "Re-utilization of existing ideas", we discovered that digital technologies are acquiring a fundamental role in the creative talents' work belonging to our sample (Finding 1), whose interests are not to be confined necessarily within the realm of arts (Finding 2) and who also evaluate the use of existing but not-yet-marketed ideas as a way to facilitate their creative process (Finding 3). Overall, these findings allowed us to answer the first sub-question concerning, *how creative talents inform their creative process and nourish their inspiration to generate new ideas.*

In fact, we realized that the majority of the respondents in our sample used articles on magazines, website or blogs as the main media to find inspiration, and that during this process digital technologies either are the main tools adopted or act as strong support for traditional ones. Moreover, we identified "Arts" as the most influencing realm for inspiration in our sample, which is reasonable if we think of Arts as the most broader instance of creative output. However, also "Architecture", and "Technology" seemed extremely relevant. In line with the theories by Hemming (2008) and Bates (2007), arguably then, it can be stated that curiosity would push the respondents of our sample, regardless of their position (either student or professional), to browse mainly across articles, ideas and online content in general, about these three realms. In the effort of implementing a Virtual Cognitive Laboratory where creative talents decide their own system of categorization of content, it might be a reasonable choice for Moleskine to propose "Arts", "Architecture" and "Technology" by default. This also considering the fact that, according to our results, even though the collection of information did not result to be the most demanding activity compared to the development of ideas, it still represents a struggle for 48% of the sample.

Hence, Moleskine could support the information-seeking behavior of creative talents (Hemming, 2008) by proposing some categories from which to build up a personal categorization system. Not to mention that, the majority of our respondents agreed on the fact that the possibility to access existing ideas can speed up the phase of preliminary research and the creative process overall. Therefore, by providing an online platform on which creative talents can not only store and categorize content but also share their own ideas (for instance, in the form of preliminary studies, not completed-projects, etc...) Moleskine could ease the effort of collecting information and building the knowledge necessary to generate new ideas. In fact, always according to our result, already existing but not yet-marketed ideas can be seen as the raw material for developing new ideas

(Oldham & De Silva, 2015; Hargadon & Sutton, 2000), being still a valuable source of inspiration, a good problem-solving tool and ready to acquire new meanings and new value.

6.1.2 The individual user's and the community's perspectives

The second and third section of the analysis addressed the thematic areas "Sharing of ideas as part of a community" and "The value of a virtual cognitive laboratory".
The second section, specifically, led us to the conclusion that creative talents in our sample were prone to participate in a community, share ideas within it (Finding 4) and learn from each other (Finding 5). Overall, this allowed us to answer the second sub-question concerning *the potential value that a virtual cognitive laboratory would have for creative talents*. As a matter of fact, we discovered that the majority of our respondents would be willing to both have access to other creative talents' ideas and to make their ideas available to others, which we identified as two fundamental aspects of the "Behavioral Engagement" in online communities, as described by Dessart et al. (2015). Moreover, we realized that among the reasons behind such a positive reaction towards sharing, there is the need to exchange resources in order to gain different perspectives and the belief that collaborating as a team can lead to better creative outcomes. Nevertheless, the most important finding in this respect is that "sharing" is considered as a way of learning and that the bilateral exchange of information is fundamental in the production, acquisition, transformation and transfer of knowledge. In this sense, in fact, Knowledge becomes almost as a public good within the community, or a "shared repertoire" (Wenger, 1998).

The topic of "community" is particularly interesting in the context of creativity because the level of cohesion among creative talents is strongly dependent on the commonalities among members not only in terms of interests but also in terms of techniques, tools, and experiences concerning a specific practice (Wenger, 1998). Companies who manage to become an essential intermediary in these kinds of networks, can exploit such level of cohesion in order to build their brand community. In fact, as stated by Dessart et al. (2008), participants in brand communities advocate that the platform they use to connect have a strong informational value for them.

We therefore should distinguish between "Community" intended as a widely acknowledged social construct corresponding to "shared identity", and "Brand Community", namely "specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand" (Muniz, 2001). In fact, we talk about Moleskine's community in terms of users who are also fanatics of Moleskine's products and like to participate by sharing content online on one side, and

about “Creative talents” as a “Community of practice” (Wenger, 1998) whose practice of making creative outputs generates a shared identity, on the other side. Our primary concern in this respect is how to make the two collide, namely, how ideally the worldwide-spread community of creative talents could become also the Moleskine’s Brand Community. In fact, online brand communities are very important for companies in order to shorten the distance between them and their users through a constant engagement.

The main reason for users to engage in online interactions promoted by a specific company, are the networking opportunities that the online platform provides, but also the ability to interact with the brand of interest (Dessart et al., 2015). Ideally then, in order to foster Consumer Engagement, described as a psychological state that occurs through “interactive, co-creative consumer experience with a focal agent/object” (Brodie et al, 2011), a company should act by strengthening the relationship among community members and the relationship that the community members have with the Brand. Moreover, given the entanglement between the two types of engagement, respectively with the brand and with the community, strengthening one would have positive externality even on the other. In fact, the engagement with the community and the engagement with the brand can be seen as intertwined and mutually supporting each other (Dessart et al. 2015). Making the community of creative talents worldwide become Moleskine’s brand community, then, means leveraging the need of networking among creative talents by gathering them around a tool created by Moleskine.

By developing Moleskine Virtual Cognitive Laboratory, arguably, the company would satisfy some of creative talents’ needs both at an individual level and at a community level involved along the phase of ideas generation, which in turn arguably is a stage of the creative process for which stationery manufacturers have not provided tangible solutions yet. This, however, provided that the system proposed added value to the product offering built on the analog-to-digital continuum principle already in place by satisfying new needs at an individual level.

Therefore, we verified also whether or not the basic functions of the Virtual Cognitive Laboratory (see Section 3.2) would be considered valuable for potential users such as the creative talents in our sample at an individual level. For instance, we collected very different motivations about why our solution could be useful, such as “*it is a tool to stimulate and ground creative ideas*”, or “*it could be a way to incentivize the creation of new solutions and be helpful to other people*” or again, “*it can reduce the time usually needed to look among difference sources of information*”. Many considered it to be an interesting tool to gain new experience and knowledge besides the more traditional way

since it would allow to connect with other expert from other fields, while a smaller percentage of people responded that MVCL (Moleskine Virtual Cognitive Laboratory) could provide access to different perspectives and ideas which, according to them, would positively influence their creative process outcome, and that the system represents something new and convenient given its functionalities. For many, it was of great interest, instead, the chance to be exposed to a large amount of knowledge and continuously updated information, which for others it might be also very useful for the identification of new market trends (Finding 7). Being the company focused more on producing tools for ideas development rather than ideas generation (see Section 1), offering a service that is perceived as positively affecting the idea generation phase (Finding 6), might correspond to fulfill a customers' need that has not been satisfied yet. Arguably then, this solution might add value to the product offering that Moleskine has already in place.

Thanks to our analysis, therefore, we came to the conclusion that the mise en place of a Virtual Cognitive Laboratory would be beneficial to both sides, Moleskine and creative users. For the former, because it has been proven by Dessart et al. (2008) that, throughout their interactions in an environment created by the brand itself, community members might even show stronger loyalty towards it. Notably, it can be stated that loyalty to the Brand is activated through the interactions with the brand on one hand, and with the online community members on the other (Dessart et al. 2008). This means that, by gathering creative talents around a Virtual Cognitive Laboratory developed by the company itself, and by supporting the growth of a real online community, Moleskine would not only acquire new users but also have higher chances to retain them thanks to an increase in loyalty. For the latter, because of the strong networking and informational value attributed to MVCL.

However, although our research confirmed the assumption that MVCL, thanks to its functionalities, can facilitate the idea generation phase and even if the 94% of the respondents claimed to be on favor of its adoption especially thanks to its informational and networking potential value, we also realized that such a positive attitude did not necessarily translate into willingness to pay for all the respondents. In fact, thanks to those who were favorable to pay a monthly fee in order to use MVCL, we discovered that the maximum price per month would be of 5 $ for the respondents of our sample. Nevertheless, this result is a positive sign on which to base further research concerning the potential revenue stream that such a solution could represent for the company. Overall then, for what concerns the sub-question "*Does the Virtual Cognitive Lab represent an opportunity* for Moleskine?", thanks to our study we can confirm that there is positive feedback from a

group of creative talents who could also be potential users but that, however, further research should be undertaken in order to find results that are also statistically significant and that could be inferred to a larger population. Therefore, the final answer to this subsquestion is that there is ground on which to build a larger scale investigation.

6.1.3 Drawbacks of sharing ideas in a community

The last section of the analysis provided insights that concern more the individual. In fact, in order to evaluate the overall value of MVCL perceived by a potential user, and hence assess whether it could be valuable for Moleskine to implement it, we had to tackle the last subquestion about *the factors that could prevent the adoption of such a system.* We found out that sharing ideas represents a reason of major concern among 50% of potential users (Finding 8). Specifically, the respondents that did not consider it as an issue, were tas many as those that instead declared it to be a hot topic for what concerns ownership and economic return. As a matter of fact, among those that claimed to be afraid that their ideas might be stolen, the main motivations concerned the uncertainty about who would be recognized as the creator of such idea and who would have the right to appropriate the return resulting from its implementation.

Grounding our reflection on these answers, we can state that lack of or poor privacy settings would negatively contribute to the willingness of users to share personal creative content. Eventually, this aspect would reduce the overall quality of the service, indeed, the lower is the degree of trust among users, the lower will be the quality of the information shared, and this would turn the system to be not very reliable and hence valuable (Lin et al., 2009). As a matter of fact, low protection would decrease the willingness to share.

However, it should be stated that this issue can be easily overcome through the development of a restrictive default settings that would give the possibility to users to share what and how much they want. According to Dwyer et al. (2007) restrictive privacy settings would ensure high degree of quality and in-depth information disclosure resulting in higher reliability and better reputation for the brand. Additionally, high quality would incentivize always more people to be part of the community and to actively participate in the sharing of information which would be eventually translated in a stronger contribution in the building of a reliable knowledge repository (Zhang & Zhu, 2011, Garud et al., 2009).

Hence, in order to answer to our third sub-question, we can conclude that privacy settings might represent either a hindering factor for the adoption of MVCL solution or a factor influencing the quality of the information and knowledge shared. With this regard, if the system does not guarantee strict setting for the protection of the content, its value

might be compromised for many users, and hence it might be not very valuable for Moleskine since it might influence its reputation. However, when content protection is ensured, the system might result instead very valuable, for all the reasons previously expressed.

6.2 Ideal Solution

This section is dedicated to the analysis of some of the features that already existing solutions (see Section 2.10) provide to their users. Specifically, it will be meant to criticize their drawbacks in order to build on them the solution that, according to us and to the data we collected, could be of best support to MVCL potential users' creativity.

6.2.1 Drawbacks of existing solutions

Dribbble might represent a good solution to share own projects and receive feedbacks that could be of help to the developer to improve his or her work. However, its target is the segment of graphic designers, which means that not all creative talents would be allowed to benefit from the service and hence, it wouldn't be in line with Moleskine's target (Raffaelli et al., 2017). Additionally, a subscription to Dribbble service doesn't include the access to topic related information. Therefore, recalling Hemming (2008) and Medaille (2010) theories it can't be really identified as a creativity facilitator. Indeed, according to the authors and our respondents, artists and creative talents in general are constantly seeking for information across different areas on where to ground their thinking and find inspiration. With this regard, the format that Dribbble offers should be complemented with other functionalities.

As it has been already described, *pocket* represents a tool that allows users to have a broad access to articles either recommended by other users or simply categorized according to different topics. This kind of functionality is actually very valuable for the reason mentioned above. Nonetheless, also in this case, this functionality is not enough to give full support to individuals' idea generation phase. According to Oldham and De Silva (2015), indeed, receiving feedbacks on something that has been produced can further contribute to develop truly innovative ideas and represent an important step of the creative process.

For what concern *Pinterest*, it can be considered as an inspiration tool, but just from a visual point of view. Namely, people who join this kind of social network, can find

practical inspiration for more or less everyday life issues, such as how to furnish a shop, or how to build an original bed. However, if we consider industrial designers or managers as users, such a tool won't give the possibility to ground original inspiration on technical information, specifically it doesn't provide users with knowledge about how and why to build new products or new business model. For this reason, it doesn't seem to fit with our concept of creativity stimulator.

Evernote allows to categorize and share information, and to save those articles that are perceived to be useful and interesting. Specifically, the "business" edition allows to share and organize notes and business material and to give feedbacks to others' work. Hence, in Evernote for business, the system might involve an active participation among users in sharing and modifying contents. However, it is not meant to be a world community which means that not everyone can have access to that if not directly invited. To be precise, Evernote gives the possibility to be part of a community, but merely to receive training about how the service works. This means that it doesn't comply with the definition of "Community of practice" defined by Wenger (1998), namely users can't share thoughts and projects in a broad mutual engagement setting, and therefore Evernote potential contribution to the creative process of users is just limited. As a matter of fact, even though it allows to organize thoughts and collect personal notes, users can't have the possibility to have access to broad different perspectives across different fields and thus, the degree of variety of information is limited to the family, friends or work boundaries. With this regard, based on Oldham and De Silva study (2015), this tool doesn't allow to potentially increase the level of creativity among the users.

Lastly, *Google+* is probably the most similar tool to our solution, indeed as already mentioned, it allows to discuss, share content and read articles about specific topics. However, it has been thought to have a very strong social media orientation and, as it has been criticized by several tech-expert, in developing this service google focused too much on copying social media like Facebook, then in really providing a solution matching those that could have been specific consumers' needs (Denning, 2015). Namely, being too busy to try to compete with Facebook, it overlooked some aspects that with its system could have contributed to generate better and more value (Denning, 2015), and the most relevant one concerns the segment targeted. Since google+ has been meant to be a new social media, its users are basically anyone. However, given its large number of functionalities, not all of them are able to make the most out of it. Additionally, google didn't specifically communicate the value of google+ and thus, this created some confusion among users: they sign up without knowing what to do and how to do it (Efrati, 2012). For this reason, despite

the big potentiality of the system, it doesn't really represent one of the most successful solutions.

6.2.2 The Moleskine Virtual Cognitive Lab

Exploiting some of the strengths and overcoming the drawbacks that these previous solutions present, we aimed to provide MVCL's potential users with a complete solution that would support the initial step of the creativity process, namely the phase of idea generation.

Thanks to MVCL users would be able not only to share their thoughts, ideas (Evernote) and projects with the possibility to receive feedback (Dribbble) as member of a community, but they could also enjoy a vast and rich "library" of articles (Pocket) that would provide them with reliable source of information along the entire process. Specifically, as supported by Rosch (1999) and Brinck (1997), the categorization of knowledge domains strongly facilitates the process of thinking and creation, and for this reason following Sara Little Turnbull's idea, we thought that this solution should encompass a system of categorization were all articles, thoughts, notes and ideas are grouped according to different topics. Moreover, the segment targeted would consist of whoever deals with creativity in her/his daily working life in order to be in line with Moleskine target. However, in order to make sure that all the functionalities of the system would be properly understood and used, Moleskine should provide users with guidelines about the objectives and the functions of the system and avoid making the same mistakes that prevent a large adoption of Google+.

Even though Turnbull strongly criticized the inefficiency of a potential online system as a facilitator of idea generation[8] the possibility to give feedbacks and sharing thoughts and experiences among users through MVCL would still stimulate interdisciplinary communication. Indeed, the community would turn to be among a sort of one big international and inter-background team of experts, satisfying also the conditions needed to stimulate creativity suggested by Oldham & De Silva (2015) (having access to diverse information, being exposed to different perspectives from users within different

[8] According to her, the absence of face-to-face discussions would have indeed reduced the physical interaction among people and thus, the degree of interdisciplinarity and creativity of the solutions thought (Vienne, 2015).

fields, having the possibility to implement or differently implement "old" or not non-market ideas, and finally receiving comments by others about personal projects or ideas).

However, it is important to consider users as people that have all different interests, characteristics and professions. For this reason, in order to make the system more customized to the single user and thus more effective in supporting his or her creative process, as soon as a new user sign up in the system, he or she would need to choose the main areas of interest. Indeed, with the insights that we gained through our analysis, we found out that despite "Art", "Architecture" and "Technology", individuals consider different realms more or less necessary in the process of collecting information for the development of an idea, hence different users would find some areas more useful than others.

Furthermore, since it resulted from the analysis also that some of the respondents were concerned about the potential uncertainty related to the ownership and return of an idea, we thought that it could have been relevant to state that every user would have ideally the possibility to set her or his personal privacy setting.

For what concerns the role of Moleskine in the community, in order to ensure an adequate presence of relevant information, Moleskine should undertake the role of information regulator with the aim to check and provide users with valuable information. In order to do that, and hence to ensure that just members "sharing the same identity" participate in the Moleskine community, the company should reduce its openness and set some filters. As a matter effect, this would limit the presence of people that can create "noise", namely could misbehave or contribute to low quality content (Alstyne et. al., 2016), and it would instead reinforce the belief of one respondents that given the professional nature of the community, the quality content and fair behaviors will be regulated by "ethics".

On the basis of the result of our analysis, the MVCL role as creativity facilitator finds support in both, theories and respondents' answers. As a matter of fact, thanks to our findings, except for the finding 8 about the privacy that it can eventually find a solution with privacy settings, we can conclude that overall, we gained positive feedback concerning the aspects on which we focused.

7 Limitations, further research and implications for practice

In this final section, we speculate about the potential contribution to research concerning the entanglement between knowledge, technology and creativity as expressed in the literature review, as well as shedding light about the limitations of our investigation.

Lastly, we conclude by suggesting some action that could be taken in order to further investigate the issued proposed to both the academia and Moleskine.

7.1 Contribution to research

Performing this investigation enabled us to highlight the relevant connection between creative talents, who are Moleskine's target, and distributed cognitive systems. In fact, it can be stated that by gathering a community of creative talents around a new digital tool such as the Virtual Cognitive Laboratory, Moleskine would be the engine activating a distributed cognitive system (see Section 3.1.4) embedded in a virtual environment created by the company itself and rooted in a community of creative talents. Hence, we can state that this dissertation provides an example for the theories about distributed human cognition by Donald (2006). Moreover, the linkage between distributed cognitive system and the "Community of Practice" as described by Wenger (1998) was established almost naturally, given that at the basis of both the authors' research there is the will of studying how knowledge is developed at both an individual and a collective level. Our contribution in this respect is an extension of Wenger's theories to a more updated context. In fact, rather than on a community of exclusively analog- users with same interests such as artists, our research focused on a community of analog and digital users who are also creative talents and who might present a broader variety of interests.

By pivoting around the topic of how each individual can contribute to the acquisition, modification and transfer of knowledge in an online community and how this knowledge in turn shapes creativity, our research also adds on to the studies by Amabile about the social environment as the fourth factor influencing creativity (see Section 2.3). Not to mention the consistency with the studies by Rosch (1999) and Lakoff (2016). In fact, by investigating in deeper into categorization as a systematic way of thinking, our research confirms the former's literature, whereas, if we think of how the categorization

system at the base of the Virtual Cognitive Laboratory reflects the natural framing process of human brain, it can be stated that it also supports the former's.

Moreover, our findings prove that, in order to generate new ideas, creative thinking can be addressed as both individual and social level, which confirms the theories by Wegerif (2002). As a matter of fact, the Virtual Cognitive Laboratory can be seen as a digital tool enabling to rationalize the internal movement of thoughts (stemming from the individual) and the external movement of thoughts (stemming from the community) simultaneously.

Overall, we can state that throughout our investigation we provided a ground on which to start a discussion about how digital technologies can support *learning* (intended as "the process by which knowledge is increased or modified" (Wegerif, 2002) and *transfer* (intended as "the process of applying knowledge to new situations" (Wegerif, 2002), are fundamental for creative talents in order to generate and develop new ideas. In fact, we shifted the focus about the support of ICT tools to education (Trucano, 2005) to digital tools enabling learning and transfer of knowledge along the creative process. In such a way, we aimed at complementing the literature about creativity, technology and knowledge and how they interrelate by trying to come out with an ideal ICT tool with the specific function of supporting the ideas generation phase.

7.2 Limitation due to the research tool and methods adopted

Since we decided to adopt a self-administered questionnaire survey instead of interviews or focus groups, we could not control when and how respondents filled in the survey, hence we did not have the possibility to check their degree of commitment and/or attention in answering the questions. This represents a relevant limitation for our study since we cannot be totally sure whether the data mirror respondents' thoughts or not. Furthermore, adopting a questionnaire format involves two additional limitations: first, answers are analyzed without the presence of respondents and, thus, it is hard to state that what we understood corresponds exactly to what they thought. Indeed, in many cases we had to interpret what was written given the short and sometimes not very clear answers.

In addition, before our analysis, we had to manipulate the raw data in order to make them more readable and clearer for our research purpose, for example by coding the open-ended questions and grouping them under arbitrarily chosen dimensions. Hence, we cannot exclude that the final data used might present some errors. Second, despite of the large

number of open questions that gave the possibility to respondents to better customize their answers in order to fit with their individual way of thinking, questionnaires do not give room to discussions and thus do not give a complete freedom in expressing personal perspective. On this basis, concerning the closed-ended questions that we proposed, we often provided a list of "items" from which to choose or, as in the case of Q.24 about the willingness to pay, sometimes we provided an arbitrarily chosen threshold from which to base the answer (in the specific case of Q.24 the threshold was 5 dollars).

Therefore, someone could argue that all of this partially influenced the respondents' answers. Specifically, the question about which realms could ground inspiration was presented as a list of pre-selected subjects (see Appendix, Q9). Hence, even if we provided the "other" option, we could have biased the respondents' decision-making process. Moreover, concerning the third section of the analysis, it should be noticed that we did not dig in deep in the factors that might prevent the adoption of the tool, but rather we relied on the assumption that the most influencing factor was the potential breach of intellectual property rights and questioned only about it specifically.

Lastly, the solution "Moleskine Virtual Cognitive Lab" that we are proposing, could be considered as relative new overall and this might have resulted to be an obstacle when asking to assess its potential value. Indeed, despite the interest that this system arose among the majority of the respondents, some of them were not totally sure about how it would work and thus they were uncertain about its value.

7.3 Limitation due to the selected sample

The selected sample includes creative talents, who are not necessarily Moleskine' users. It might be argued that asking the same questions to a sample of Moleskine's users might provide different results. For instance, Moleskine users might find a virtual cognitive laboratory as not appropriate for a company belonging to the stationery industry and, therefore, they might be skeptical about the introduction of such a tool and be less prone to provide positive feedback. However, as already stated, we have chosen such a sample on purpose, committed to investigate creative talents' potential unfulfilled needs.

Moreover, considering that the sample is composed by 35 professionals and 34 students and that only one respondent did not state whether she/he is a student or a professional, we managed to get a quite well-balanced sample for what concerns the dimension "position" (either student or professional). However, if related to the level of expertise in systematic creative processes, this might also mean that our data involve, for

nearly 50% of the cases, insights from respondents that do not have so much direct expertise in the topic and thus, they might have answered driven by the knowledge acquired throughout their studies instead of being driven by an actual expertise about their creative process. Moreover, it should be taken into account the fact that, whereas balanced for what concerns position, our sample might be quite skewed with respect to the dimension "background" and age. In fact, the majority of the respondents were between the 20 and 25 years of age with a background in Architecture, followed by respondents over 35 years of age with the same background. This also is likely to have strongly influenced the overall count of votes for the questions concerning the Realms of interest (see Appendix, Q9; Section 5.1).

7.4 Further Research

The limitations that we previously discussed indicate that our investigation can be considered as a preliminary study from which to start exploring other several aspects concerning virtual cognitive laboratories. In fact, in order to have more practical and accurate information about whether and how a Virtual Cognitive Lab could be actually implemented, further research is needed. Notably, we mainly focused on understanding how the creative process occurs in creative talents' mind, and whether a Virtual Cognitive Lab would potentially satisfy the need of a digital support to aid the process. However, for the purpose of our research, we didn't adopt a quantitative study, which means that no statistical data among a large-scale sample have been collected and analyzed, and thus we haven't been able to identify possible inference. For this reason, a quantitative approach could be carried out in order to gain more in-depth insights.

Moreover, deep market research concerning the existence of a potential market for Moleskine Virtual Cognitive Laboratory and how Moleskine's current users would respond to its introduction might be relevant to understand whether the product could actually fit with the Moleskine products offering, what could be additional factors of resistance, whether it would be economically feasible and whether the solution would be successful once implemented.

Lastly, since we are talking about a solution that involves specific technical functionalities, further research should also aim at identifying and setting technical requirements that would be needed by the company to develop the Virtual Cognitive Lab, followed by the development of a prototype that will allow to test and eventually improve

the system. In this sense, also a collaboration with the company in order to gather a perspective from inside the company could be suggested.

7.5 Implication for practice

As above mentioned, with our research we identified in a Virtual Cognitive Lab the possibility to satisfy some among creative talents' needs. For this reason, this investigation provides Moleskine with a new way through which the company would reduce the distance with its customers. Specifically, Moleskine would be able to offer a tool that will speed up the creative process and stimulate networking within a community. Arguably this service could be interesting for both existing users and potential new ones, such as creative talents. Even though, as already stated, market research is needed in this respect.

Moreover, in order for Moleskine to successfully deliver such a tool, it should undertake the further investigations that we suggested in section 7.4. More in particular, the company might decide to collaborate also with the academia to gather better insights about whether and how a digital technology could influence individual's creativity, and hence to understand whether, through the solution proposed, Moleskine can benefit from that.

Additionally, given the large investment that the development of such a system might involve, the Company should consider the possibility to partner with other companies (both vertically and horizontally positioned along the value-chain) who could provide a support in the process. Considering the large number of partnerships that Moleskine has been developing along the years, arguably this should not represent a struggle for the company.

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9 Appendix

Digital tools for creative minds

The following survey has the objective to gain insights and opinions from creative talents about their creative process and about a new digital solution for the company named " Moleskine ".

NOTE to the respondent:

By answering the following questions you will help us collect opinions about whether or not digital technology in the phase of idea generation might be of aid. You will find that some questions are quite open but please note that this is meant in order to let you talk freely about your work almost as much as you were being interviewed.

*Required

Background

When choosing "other", please specify what exactly

1. **Which type of Background do you have?** *
   Please choose the option that identifies you the best,
   Tick all that apply.
   - ☐ Architecture
   - ☐ Industrial Design
   - ☐ Graphic Design
   - ☐ UX/UI Design
   - ☐ Engineering
   - ☐ Business consultant
   - ☐ Other: _____

2. **Please choose the option that identifies you the best:**
   Tick all that apply.
   - ☐ Professional
   - ☐ Student

3. **How many years of experience do you have in your field? (Please state in integer numbers)** *
   _____

4. **If your are a professional, which type of professional are you?**
   Tick all that apply.
   - ☐ Freelancer
   - ☐ Employee
   - ☐ Leader
   - ☐ Other: _____

5. **If you are a professional, how much does your role weight in the idea generation phase?**
Mark only one oval.

	1	2	3	4	5	
Not at all	◯	◯	◯	◯	◯	Very determinant

Ideas generation

When choosing "other", please specify what exactly

6. **How do you inform your creative process?** *
Tick all that apply.

- [ ] Articles on magazines, websites, Blogs etc.
- [ ] Congress and events
- [ ] Documentaries and other TV programs
- [ ] Experience
- [ ] Other: _____

7. **Do you recognise Idea Generation as the first step in your creative process?** *
Tick all that apply.

- [ ] Yes
- [ ] No

8. **If you chose "no", which actions would you say your creative process starts with?**

_____

_____

_____

_____

_____

9. **Which of the followings do you believe it requires more mental effort?** *
Tick all that apply.

- [ ] Collection of information for idea generation
- [ ] Development of the idea (modelling, prototyping etc..)

10. **Which among the following do you consider as the necessary realms from which to take inspiration ? (choose maximum 10)** *

Example: new fashion trends can determine color design choices; new health concern (e.g. the way you should sit for your back) might determine the most adapt design for a chair, sofa etc...

Tick all that apply.

- [ ] Politics
- [ ] Economy
- [ ] Education
- [ ] Architecture
- [ ] Visual Arts
- [ ] Health
- [ ] Fashion
- [ ] Technology
- [ ] Travel
- [ ] Psychology
- [ ] Food
- [ ] Housing
- [ ] Social Media
- [ ] Science
- [ ] Nature
- [ ] Sports
- [ ] Leisure
- [ ] Motors
- [ ] Beauty
- [ ] Entertainment
- [ ] Anthropology
- [ ] History
- [ ] Literature
- [ ] Music
- [ ] Other: _____

Storage of Ideas

Please answer the following question within maximum 2 sentences

11. **Do you think that already existing ideas or not-marketed ideas can be a valuable source of inspiration?** *

Tick all that apply.

- [ ] yes
- [ ] No

12. **Why?**

13. **Do you think that the re-utilization of ideas could be useful to speed up the creativity process?** *
Tick all that apply.

- [ ] Yes
- [ ] No

14. **Why?**

15. **Would you be interested in having access to other creative talents' ideas to gain inspiration?** *
Tick all that apply.

- [ ] Yes
- [ ] No

16. **Why?**

17. **Would you be willing to share your ideas as a part of a community?** *
Tick all that apply.

- [ ] Yes
- [ ] No

18. **Why?**

MOLESKINE Virtual Cognitive Lab

The concept is to enable a community of creative talents to connect and share thoughts and notes through an online platform. Moreover, one benefit will be to gain a broad access to new topic-related publications, which could be stored and organized through a system of categorization (To provide you with a similar existing solution, visit Google Plus platform)

In specific, a combination of several functionalities would be provided:

- sharing of personal written thoughts/notes;
- saving articles and informative material found over the internet
- access to categories of articles saved by others;
- possibility to post projects and share them with others
- taking inspiration from the community shared material

Your opinion about the idea

Please cross the option that you consider valid and answer the following question:

19. **Do you think that Moleskine virtual Cognitive Laboratory of data and information can facilitate the idea generation stage?** *
Tick all that apply.

- [ ] Yes
- [ ] No

20. **Why?**

Creative talents are supposed to provide new functional and aesthetically valuable products/services to users. Please, state how much you agree with the following sentence:

21. **"Moleskine Virtual Cognitive Laboratory could help you to identify trends in new products and service offering"** *
Mark only one oval.

	1	2	3	4	5	
Totally Disagree	◯	◯	◯	◯	◯	Totally Agree

22. **By using this system, would you be afraid somebody could steal your good creative ideas?** *

Tick all that apply.

- [ ] Yes
- [ ] No

23. **Why?** *

_____

_____

_____

_____

_____

24. **Would you be willing to pay a fee to have access to such a platform?** *

Please cross the option that you consider the best
Tick all that apply.

- [ ] Yes
- [ ] No

25. **If "yes" how much per month?**

Tick all that apply.

- [ ] Less than 5$
- [ ] Not more than 5 $
- [ ] Not more than 10 $
- [ ] More than 10 $

Information about the respondent

Please answer the following generic questions to help us understand more about you.

26. **Gender**

Tick all that apply.

- [ ] Male
- [ ] Female

27. **Age**

Tick all that apply.

- [ ] 20-25
- [ ] 26-30
- [ ] 31-35
- [ ] >35

Thank you for your time!