

Creativity for All

Microsoft Italia Business Case

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Acknowledgments

To my Family: my mother, Nuccia, my father, Mimmo, and my brother Federico. They were, and will always be, my motivation to go on improving myself.

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To all the persons I have met on this beautiful path and have become an indelible part of myself.

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Title meaning

I decided to use “Creativity for All” as a title of my Master Thesis because I can see a direct link between my Italian cultural background and the title itself. I am going to explain this link mentioned before in the following rows.

In Milan, a world centre of design, during my bachelor, I attended one seminar in the Business School of “Politecnico di Milano 1863” about the importance of design, and for the first time, I have heard the expression of “Design for All” (DfA)¹. I got interested in the meaning of that expression, and I went deeper into the study of it.

There are problems where it is almost impossible to find the cause. There are problems where there is an infinitive quantity of reasons, and we cannot remove all of them. There are problems where we know the cause, but we cannot solve it. Such problems cannot be solved by analysis. There is a need to “design a way forward” (De Bono, 1992).

DfA is a social approach that declares the human right of inclusion and the projectable approach to it. Designing for all means having the ability to project different structures, products, and services usable by anyone, does not matter the size, or possible diversity. Even more, the diversity is an intrinsic part of the process. Who builds up new things following this DfA criterion strive for reducing barriers in any way.

Creativity for All is a way of sharing knowledge of creativity management and innovation taking great care about boundaries and diversity. The aim of DfA is to allow free information access to any individual. The aim of Creativity for All, from my view, is to enable people to see and design new ways of thinking through tools and useful techniques discussed in this Master Thesis.

¹ Polidesign, accessed November 1, 2016, <http://www.polidesign.net/it/designforall>.

Abstract

The society where we live in is portrayed by creativity², a concept that became useful in a wide range of fields: economy, art, science, medicine, and so on. We came back to understand that the capacity of being creative is the essence of business, and moreover, represents the competitive advantage³ we need to survive in the market. All the transformation we see in our socioeconomic environment are directly linked with this human being nature: creativity.

It is truly hard to specifically define the borders of creativity since we talk about it in sculpture, music, painting, literature, design, fashion, medicine, science, and art in general. We have names that are related to creativity: Leonardo, Michelangelo, Mozart, Pirandello, Beethoven, Newton, Galileo, and I can go on for an entire paper. What it is as important as the vast appeal of those names above, is the fact that normal people in a daily life, thanks to their jobs and activities, elaborate and develop creative mindset making our life easier to live.

Since ever we talk about this topic within different shadows, for example in ancient times creativity was viewed as a divine attribute. The Sumerians believed that most of the things we still credited to their work, were gifts from the gods. The Babylonians and Assyrians had special guardian angels useful to guide them in discoveries and other studies.

“He (Marduk) sent a tutelary deity (cherub) of grace to go at my side; in everything that I did, he made my work to succeed.” Nabopolassar, King of Babylonian Empire⁴

In Judeo-Christian tradition, all the creative things were created by God in the first place; even new inventions were a grace and power of God. The ancient Greeks got the fire from Prometheus the Titan that stole it from heaven and gave it to them and received back an eternal punishment from Zeus. Even Daedalus that means “clever worker”, was an inventor of things given from gods, for example, the magical wings he created to flee from the prison. In general, for Greeks, creativity was an external power or gift that was imparted to people by divine spirits (Gibson R., 2015).

² **Creativity:** a process of developing and expressing novel ideas that are likely to be useful.

³ **Competitive advantage:** a condition or circumstance that puts a company in a favourable or superior business position.

⁴ “Guardian Angel” World Heritage Encyclopedia, accessed October 15, 2016, http://www.worldheritage.org/articles/Guardian_Angel.

This joint sense of Greeks was shared from Romans too. They used to call “genius” (Gibson R., 2015) the kind of guardian spirit that guides human creativity. In another word, if Elon Musk, Tesla Inventor had been in the Roman Empire, no one would have called him a genius. However, everything started to have a different shadow in the European Renaissance between the fourteenth to the seventeenth centuries, particularly in the period of humanism. We all should be thankful for these periods of time, where essentially was introduced a new way of looking at the world. Humans became the centre of the universe, and that meant trying, daily, to understand our world, making it easier and working to make this world a better place in the future.

Wind of resistance was made by middle age period where Latin noun “creatio” (“creation”) and the verb “creare” (“to create”) were exclusively used for God’s original act of creation. The Renaissance mind was free to discover the beauty of every single phenomenon all around. Maybe this liberation from all the boundaries that at that time, and still today, the society was giving, helped us to introduce fresh perspectives, becoming the fuel for creativity and innovation from that time to today in every field and topic as will be showed in this Master Thesis.

Using the knowledge of innovation management and creative tools described in the first part of the thesis, will be possible to collect, analyse and understand the best solutions for real life business problems. Specifically, in this work will be showed how Microsoft Italia, after a long evaluation of new people management solutions, decided to invest, supported by creative experts, in infrastructure and buildings to share off the new corporate vision: open innovation through digital transformation. Microsoft managers were involved in the process of data collection and a creative session between Microsoft colleagues were used to study the new perspectives of the work environment.

“All our knowledge has its origin in our perception.” Leonardo da Vinci⁵

Keywords: Creativity; Creative Tools; Corporate Culture; Mindset.

JEL: F36 – Economic Development

JEL: M10 – Business Administration

⁵ Gibson, R. (2015). The 4 Lenses of Innovation (First edit, Vol. 1), Hoboken: John Wiley & Sons, Inc., pp. 2-15

Resumo

A sociedade em que vivemos é retratada pela criatividade⁶, um conceito que se tornou útil em diversos campos: economia, arte, ciência, medicina, entre outras. Constatámos que a capacidade de ser criativo é a essência do negócio e, além disso, representa a vantagem competitiva⁷ que necessitamos para sobreviver no mercado. Todas as transformações que vemos no nosso ambiente socioeconómico está diretamente relacionado com esta natureza humana: a criatividade.

É verdadeiramente difícil definir especificamente as fronteiras da criatividade uma vez que falamos sobre ela em escultura, música, pintura, literatura, design, moda, medicina, ciência e a arte no geral. Existem nomes que estão relacionados com a criatividade como: Leonardo, Michelangelo, Mozart, Pirandello, Beethoven, Newton, Galileo, entre outros que poderia enumerar. O que é tão importante como o recurso aos nomes acima mencionados é o facto de que pessoas normais no seu dia a dia, devido aos seus trabalhos e atividades, elaboram e desenvolvem mentalidades criativas que tornam a nossa vida mais fácil de viver.

Desde sempre que falamos sobre este tema em diferentes visões, como por exemplo nos tempos antigos a criatividade era vista como um atributo divino. Os sumérios acreditavam que a maioria das crenças nos seus trabalhos eram os presentes dos deuses. Os babilónios e assírios tinham anjos guardiões especiais úteis para guiá-los em descobertas e outros estudos.

“Ele (Marduk) enviou uma divindade tutelar (Cherub) de graça para ir ao meu lado; em tudo o que fiz, ele fez com que o meu trabalho tivesse sucesso” Nabopolassar, King of Babylonian Empire⁸

Na tradição judaico-cristã, todas as coisas criativas foram criadas por Deus em primeiro lugar; mesmo as novas invenções eram graça e poder de Deus. Os gregos antigos receberam o fogo de Prometeu que, por sua vez, o roubou do céu, e por isso recebeu um castigo eterno de Zeus. Mesmo Dédalo, que significa “trabalhados inteligente”, era um inventor de coisas dadas por deuses, como por exemplo as asas mágicas que ele criou para fugir da prisão. No geral, para

⁶ **Criatividade:** processo de desenvolvimento e expressão de ideias inovadoras com potencialidade de serem úteis.

⁷ **Vantagem competitiva:** uma condição ou circunstância que coloca uma empresa numa posição comercial favorável ou superior.

⁸ “Guardian Angel” World Heritage Encyclopedia, accessed October 15, 2016, http://www.worldheritage.org/articles/Guardian_Angel.

os gregos, a criatividade era um poder ou presente externo que foi transmitido às pessoas por espíritos divinos (Gibson R., 2015).

Este sentido comum dos gregos também foi partilhado pelos romanos. Os romanos costumavam chamar “génio” (Gibson R., 2015) ao tipo de espírito guardião que guia a criatividade humana. Por outras palavras, se Elon Musk, inventor da Tesla, estivesse no Império Romano, ninguém o teria chamado de génio. Contudo, começou-se a ter uma visão diferente no renascimento europeu entre os séculos XIV e XVII, particularmente no período do humanismo. Todos nós devemos agradecer por esses períodos de tempo, onde essencialmente foi introduzida uma nova maneira de olhar para o mundo. Os seres humanos tornaram-se o centro do universo e isso significava tentar, diariamente, perceber o nosso mundo, tornando-o mais fácil e trabalhando para torna-lo num lugar melhor para o futuro.

O vento da resistência foi criado na idade média onde o nome Latim “creatio” (“criação”) e o verbo “creare” (“criar”) era exclusivamente usado para o ato original de criação de Deus. A mente renascentista era livre para descobrir a beleza de cada fenómeno único. Talvez esta libertação de todos os limites que, naquela época e ainda hoje, a sociedade nos tem dado, ajudou a introduzir novas perspetivas, tornando-se o combustível para a criatividade e inovação, como será possível verificar nesta Tese de Mestrado.

Usando o conhecimento de gestão de inovação e ferramentas de criatividade descritas na primeira parte da tese, será possível recolher, analisar e perceber as melhores soluções para a realidade dos problemas de negócios. Especificamente, neste trabalho será demonstrado como a Microsoft Itália, depois de uma longa avaliação de soluções de gestão de pessoas, decidiu investir, suportada por especialistas criativos, em infraestruturas e edifícios de forma a demonstrar a nova visão empresarial: inovação através da transformação digital. Gestores da Microsoft estiveram envolvidos no processo de recolha de dados e foi realizada uma sessão criativa entre colegas da Microsoft para estudar as novas perspetivas do ambiente de trabalho.

“O nosso conhecimento tem origem na nossa percepção” Leonardo da Vinci⁹

Palavras-Chave: Criatividade; Ferramentas de Criatividade; Cultura Empresarial; Mentalidade

JEL: F36 – Desenvolvimento Económico

JEL: M10 – Administração de Empresas

⁹ Gibson, R. (2015). The 4 Lenses of Innovation (First edit, Vol. 1), Hoboken: John Wiley & Sons, Inc., pp. 2-15

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1. Technology Design

This chapter will discuss the organisational solutions that lead to strategic business choices. Particular attention will be paid to how to design and develop the technological skills by illustrating the mix from the primary organisational variables. It will be highlighted how and why it is necessary to focus on the problem of corporate inertia, giving emphasis to ambidextrous organisations, open innovation and dynamic skills.

1.1 The organisational variables as a basis for technological competencies

The technical expertise of a company is based on four dimensions (Leonard-Barton 1992):

1. Individual abilities (People - P);
2. Technical systems (Operational Systems - OSy);
3. Values and standards (Culture - C);
4. Management systems (Organizational Structure - OSt).

Figure 1 exhibits the four dimensions mentioned right above. The distinctive competencies are deposited in people and corporate culture (cognitive dimension of skills) and are driven by the structure and operating systems (physical dimension of competences). The skills are the basic units that underlie the individuals; the organisational structure is what divides work tasks among people; norms and values held people together in the corporate plan, and finally, the operational mechanisms allow operation at the management level. Each competency, then, is the result of the specific composition of the four aforementioned organisational variables. Obviously, companies are based on different skills and necessarily must submit multiple compositions.

Figure n.1: Firm Competences¹⁰

The mix of all the different dimensions will lead, in various ways, to the company competencies, reaching a unique competitive advantage (Grando, Verona, Vicari 2006).

1.2 From inertia to change

Due to organisational inertia, sometimes companies are not able to innovate with continuity, i.e., the skills models with the passing of time become distinctive stiffness, limiting growth paths. For example, the leader has a very rigid mindset and therefore does not innovate, it is inert. When that happens, it proceeds to integrate the innovations by underestimating the cost and the limited impact of process change rather than radical innovation. In this sense, there is no substantial innovation, but marginally or incremental. Inertia can be linked to company's technical expertise inability and the ability to manage innovation: they are addressed to the past and not necessarily bind with the future. Moreover, the inertia can manifest cognitive form with the "Not-Invented-Here" syndrome, which involves the reject of more creative solutions because they were not invented thanks to internal expertise (Tripas, Gavetti 2000).

The solution to the problem lies in looking at those businesses that have a highly dynamic behaviour in dynamic environments thanks to their ability to adapt. It is not enough to introduce continuity innovation in products and processes. Teece, Pisano and Shuen (1997) show that to generate value, skills that are among firm competencies must also be able to exercise three fundamental processes:

¹⁰ Adapted from Grando, A., Verona, G., & Vicari, S. (2006). *Tecnologia, Innovazione e Operations* (Second Edi). Milano: Egea. p. 65

1. **Integration:** competences should have the ability to integrate all the internal company resources with the aim of creating the competitive advantage mentioned above;
2. **Learning:** learning the inside and outside environment must be the prerogative of the productive powers because the evolution of markets involves a continuous change in the use of technology and an evolution compared to them. Please note that learning is often exercised in a straight line (short for step) which can often limit the growth path of the company itself and should, therefore, go beyond the constraints imposed by the trajectory to generate effective skills. Learning means to produce value through problem-solving processes and mistakes (Cyert, March 1963);
3. **Reconfiguration:** it deals with changing the business logic to complete development; in essence, whether the environment changes the resources have to be able to adapt and reconfigure themselves.

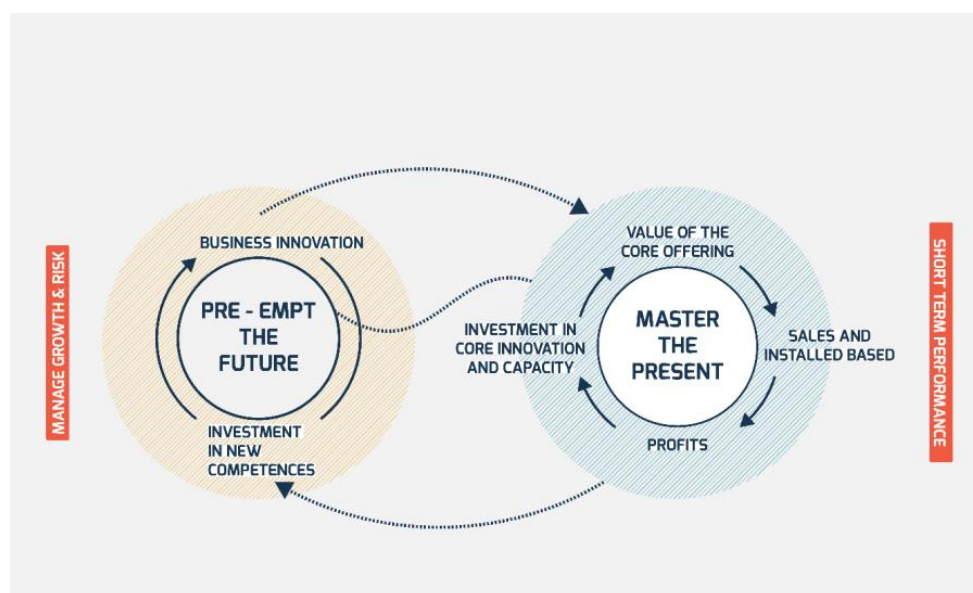
1.3 The ambidextrous organisation

The company thinks at the same time on the present, focusing on its existing competences and its products to optimise efficiency, and to the future, to develop skills. Figure 2 represents a pragmatic framework of the ambidextrous organisation as detailed by Grando, A., Verona, G., & Vicari, S. (2006) in “Tecnologia, Innovazione e Operations.”

There are different levels of ambidexterity as explained in the following points:

- **Corporate level:** the company continues to be run by existing skills (exploitation) and at the same time acquires the most innovative companies (exploration). Corporate level is well represented by the corporate venture capital¹¹ function (Clark 2012);
- **Structural level:** companies share the work in organisational and managerial level with the idea of creating divisions aimed at cultural innovation;
- **Cultural** (Birkinshaw, Gibson 2004): it is the most complex one, and it requires individual to manifest an ambidextrous mindset, which leads them both to satisfy demands of exploitation, exploration as necessary (difficult to implement in large environments).

¹¹ **Corporate Venture Capital:** is the investment division of corporate funds directly engaged in external start-up companies.

Figure n.2: The Ambidextrous Organisation¹²

1.4 Open Innovation

Recent years have seen the spreading of the idea that technology and innovation are to be acquired outside the organisation, through forms of collaborations called "collaborative innovation" (Prandelli, Sawhney, Verona 2008), and that the company should invest directly in the next dominant technology without reference to logical outsourcing.

Chandler (1990) argues that an increase in the size of the business has led to increases in economies of scale and in range of the same companies as it was necessary (as a result of the size increases) to internalize both the upstream activities as the further down the chain of value to protect the huge investments in machinery and equipment. Companies in this way have started the production of raw materials and intermediate inputs and have also engaged in marketing activities in an effort to achieve high rates of utilization of output capacity in their central areas intensive capital.

Williamson (1985), however, emphasises the fact that the concept of specificity of resources is closely linked to that of opportunism: a participant in a transaction could be opportunistic with the production of low-quality goods, supplying products in late, or not following the contract provisions. This discussion leads to an understanding that the attempts of behaving opportunistically, providers weaken the efficiency of the markets and push the transaction

¹² Adapted from Grando, A., Verona, G., & Vicari, S. (2006). *Tecnologia, Innovazione e Operations* (Second Edi). Milano: Egea, p. 72

costs to the point where it is cheaper for a company to undertake many activities internally, which otherwise could have been purchased through the markets¹³.

Nelson and Winter (1982), believe that companies are subject to learning both by individual actors, both collectively within the business routine. Just the Joint Learning¹⁴ allows to internalise with development, and such knowledge leads to create growth paths based on what was learned in the past. Recent explanations, however, refer to the modularity construct, companies build through the apprehension of new technologies, standardised interfaces allowing each operator to innovate while maintaining its compatibility¹⁵.

The importance of technological networks and a technical knowledge of the external market is also outlined in the case of Markets for Technology (MT) which are markets where companies exchange technology (Arora, Fosfuri, Gambardella 2001); while they were previously only horizontal, technology was exchanged between competitors businesses, they are now also vertical, so there are specialized technology vendors that offer it in downstream to firms that deal with marketing¹⁶.

The existence of MT is justified by the fact that large enterprises produce excess innovations compared to their commercial use for which incentives derive from the diffusion of patents that do not directly employ. Also, small businesses may not have the sales force to spread the technologies in the market where they prefer to sell them and earn a profit. It is important to understand that although there is an ever-growing production of knowledge and a substantial outsourcing of Research & Development (R&D) function, this does not imply a disinvestment in the role itself.

The creation of a market for MT creates an environment where there are multiple channels for deals. To understand the distinctive elements that have these specific intermediaries there is a focus on the Technology Broker (Hargadon, Sutton 1997) model. Their birth can be traced back to the presence of structural holes in the context of real markets, or frequently between two actors, there are, in the network of possible connections of structural holes that do not allow the proper flow of information. These are holes that allow third parties to act as intermediaries. When these brokers do not permit the passage of simple information, but of

¹³ "A transaction occurs when a good or service is transferred from one part of a technologically separable interface. One of a work stage ends and another stage begins." Williamson, 1985: 1

¹⁴ **Joint Learning**: is a situation in which two or more people learn or attempt to learn something together.

¹⁵ The right example in this case might be the USB device.

¹⁶ While the strategic logic underlying the "horizontal" markets can be traced back to the competition, those concerning the "vertical" markets tend to be logically collaborative.

technology, they become technological brokers and deeply affect the process of innovation of the company.

Hargadon and Sutton have proposed a technology brokering model based on two phases, and it comes from a leading company in the design consultancy industry, IDEO:

- **Access:** ability to occupy a structural hole in a network between two actors disconnected from each other to allow therefore the passage of information;
- **Process knowledge exchange:** involves the acquisition of knowledge about a specific technology; storing, that is, the ability to integrate the solution in people and concepts to be able to remember; the relative implementation applying old solutions stored to create new ones.

Summarily, it is possible to interpret a technology broker as an operator that combines four core competencies:

1. **Positioning:** allows the broker to access a technology market by leveraging information asymmetries between supply and demand absorbency;
2. **Identification:** the broker owns its technological knowledge that links one of the two poles;
3. **Transformation:** the intermediary's ability to turn knowledge for commercial purposes;
4. **Transfer:** the broker must worry about the transmission of awareness towards the second activated pole; the pole, therefore, requires knowledge of the technology in question.

In each step, the broker provides answers to the technological problems of specific companies.

2. Innovation Sources

This chapter will cover the various sources from which the company initiates the innovative process. Will be first introduced the concept of creativity, which can be decoded depending on whether specific creative individuals or the whole organisation. Finally, the technology partners will be treated, that is, that significant part of the collaboration that leads to innovation.

2.1 List of creativity's myths

Here a list of myths about creativity that are common to be found (Harvard Business Essentials, 2003):

- **The smarter you are, the more creative you are.** The reality is quite different from that statement. There is according to science a defined profile of a creative person. Having a high IQ is not directly related to the creative skills.
- **The younger are more creative than, the older.** The reality tells us that there is a correlation between creativity and age of an individual. It takes about seven years to be considered experts in a given field, including creativity. What negatively impacts the world is the fact that the business knowledge can inhibit the ability to think outside the box.
- **Creativity is reserved for the few - the flamboyant risk takers.** The reality is that the capacity to take risks is part of the creative process. The above comments do not mean that being a bungee jumper means to be creative.
- **Creativity is a solitary act.** The reality shows that the majority of the most important inventions were the result of a group effort. Having said that, a smart manager will always seek complementary skills to join its team to create the right environment for creativity.
- **You cannot manage creativity.** The reality says that it is not possible to predict who will be involved at the moment creatively. This does not mean that management does not have the ability to articulate and improve the surrounding environment. Process and people management can make a difference in the management of creativity.

2.2 The individual and organisation creativity

Creativity means the “attitude of a system to evolve” (Binning 1991). “Attitude” because it is a skill that produces something, leading to innovation and, a “system” because clearly creativity is not just for individuals, that is not merely a cognitive ability, but also affects organisations; finally, because change is necessary, but not sufficient. There is a need for willingness to change that is not defined by a straight line. As for individuals, some creative people are comfortable in their complexity and unstable situations: where other people experience discomfort for the situation of lack of clarity or difficulty, creative individuals show their skills.

2.2.1 Theories on individual creativity

Many theories try to explain the reasons and the individual creativity processes. Freud proposes the theory that creative people produce new starting from their instincts in a way that is socially acceptable (Vicari 1998).

A different theory is the behaviourist, such as Pavlov, who has formulated a model of conditioning (Vicari 1998). The behaviourist psychology explains the creative process as a set of associations between stimuli, reinforcements and answers that make these automatic.

According to the preparatory schools, however, creative thinking is based on trial and error processes (Grando, Verona, Vicari 2006). The activity in laboratories of universities and companies is based primarily on an experimentalist approach.

Cognitive psychology has shifted the focus on the processes that take place within an individual. Creative activity is, therefore, a task of problem-solving, constituted by the set of processes that allow an individual to address a problem (Simon 1976). It can be seen as a result of cognitive skills, such as the ability to identify problems (problem finding), generating solutions and implement them.

According to Csikszentmihalyi (1990) there are no rational components in the creative ability of an individual, and to this end has determined the characteristic of total immersion in the activity through:

- The individual interest of a person on a specific topic;
- The individual motivation needed to solve the problem;

- The bad feeling about the situation and the need of changing it;
- A positive environment can award the creative effort.

According to other authors who follow the line of thought that creativity can be seen as the result of individuals' characteristics (Barron & Harrington 1981), the basis of creativity are the characters of energy, autonomy, insight, breadth of interest, curiosity.

Another way to explain the creativity of the individual is to refer to the relationship between knowledge and creativity, according to which the technical, managerial expertise, market together with skills related to the personality, play a major role in the creative process (Grando, Verona, Vicari 2006).

2.2.2 Three more components of individual creativity

Creativity is a process of developing and expressing novel idea for solving problems or satisfying needs. Thus, creativity is not so much a talent as it is a goal-oriented process for producing innovations.

A manager can influence the three components of creativity just described through workplace practices and conditions. Here are the ones that appear to matter most by Harvard Business Review (2003):

- **Getting the right match:** the perfect match is given by knowing how to put together the right people with the right tasks. A job that requires skills owned by the chosen person;
- **Giving freedom:** Teresa Amabile (1998), just for this point, suggests to managers to spread freedom to employees, giving them only the deadline;
- **Providing sufficient time and resources:** assigning a not affordable deadline, or not delivering the right tools to employees will ensure that a severe lack of creativity.

In the following figure n.3 it is possible to match the three components under the name of expertise, creative-thinking skills and motivation. The three components can be influenced by managers, for better or for worse, through workplace practices and conditions.

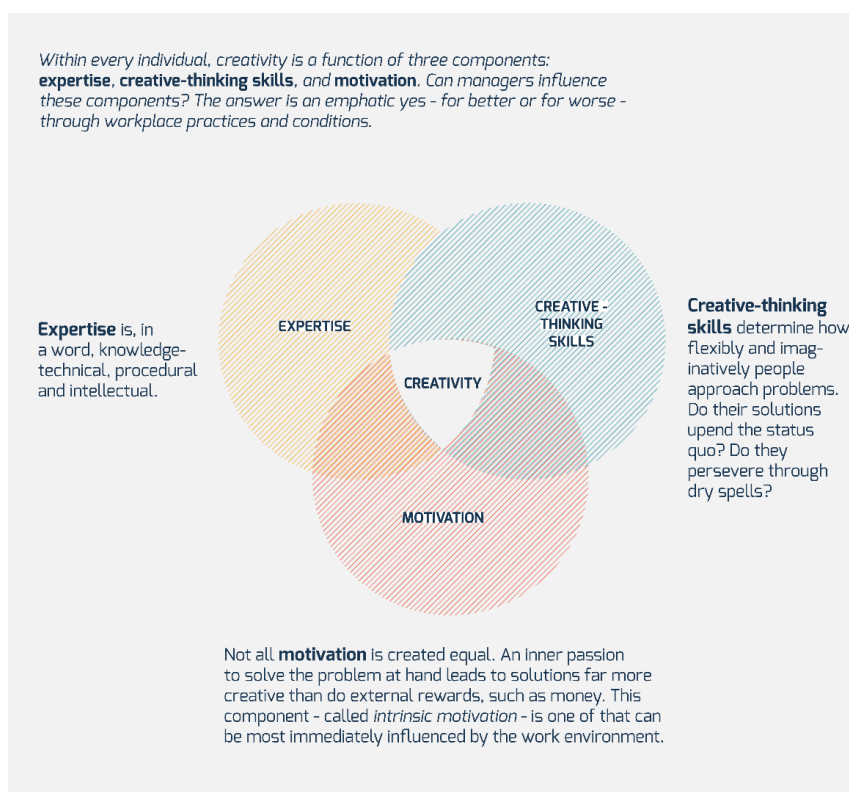


Figure n.3: The Three Components of Creativity¹⁷

2.2.3 Theories on organisation creativity

The creativity of an organisation is not the sum of individual creativity. In essence, the significance of this is that the ideas are relevant because of their placement within an organisation that makes creativity no longer an individual fact, but a fact that has then collective relevance to the social context. Companies can be described as matching individual creativity and organisational creativity (Grando, Verona, Vicari 2006).

In the following table n.1, in the first quadrant in the lower left, there are the firms with low intensity of personal and organisational creativity: these are companies that are not able to produce a high rate of innovation, but they are only able to carry out imitations of existing products. In the quadrant at the bottom right there are the companies with the highest individual creativity rate but low organisational creativity. Innovations are the result of the individual entrepreneur skills. This scenario is very present in small and medium-sized businesses where the contractor's original quality can give life to radical innovations. In the upper left quadrant, there are companies with significant organisational creativity, while not having private highly creative individuals. The change, in this case, is given by a continuous

¹⁷ Adapted from Harvard Business School Press. (2003). *Managing Creativity and Innovation*, Boston, Massachusetts, p. 83

series of small changes. Last but not least, in the upper right quadrant, the innovation growth mind-set companies, those enterprises that are able to leverage both individual and organisational creativity to reach and pursue a competitive advantage.

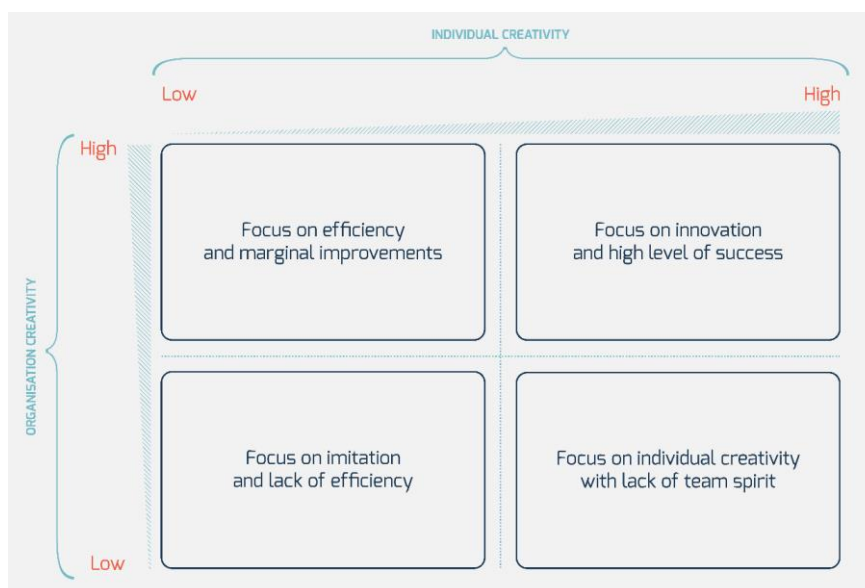


Table n.1: Individual and Organisational Creativity¹⁸

2.3 The blocks to creativity and innovation

At the organisational level, when there is a deep knowledge of specific topics, it is easier to learn something more, rather than when there is no knowledge on the field. Perceiving small changes or differences that occur is the proof of this statement. Incremental innovation takes place when there is an established knowledge. At the same time, for radical innovation, a solid knowledge can be an obstacle unless there is a strong ability of learning. What is written right before explains why most disruptive innovative effects and radical innovations are rarely produced by existing firms or incumbent¹⁹, and instead are often the result of new entrants into the market, or a newcomer²⁰ (Grando, Verona, Vicari 2006).

When there is a need of changing, the enterprises must remove three types of blocks:

- **Successes that come from the past:** success is a potent inhibitor of change because it is very hard to change a strategy that has worked for a long time, or to change an organisational structure that is effective, rather

¹⁸ Adapted from Grando, A., Verona, G., & Vicari, S. (2006). *Tecnologia, Innovazione e Operations* (Second Edi). Milano: Egea, p. 126

¹⁹ **Incumbent:** an incumbent in business most commonly refers to a leader in the industry being discussed. The company may possess the largest market share or may have additional sway within the industry.

²⁰ **Newcomer:** someone who has recently become involved in an activity.

than ineffective processes. In these specific cases, crisis has a positive impact on creativity;

- **Stiffness structure:** there is no general rule about it, but it still possible to say that communication facilities, where are allowed, make a greater integration between people, allowing creativity and productivity. This leads to a higher level innovation. Another important characteristic is the Line Management²¹: where it is established the exclusive function of the existing hierarchy, the level of creativity is usually low, rather than having a structure where each person has its relation to the target task, enhancing the level of creativity;
- **The dominant culture:** culture is a mindset project. Anyone can participate in the dominant culture. The problem is that when appears too rigid, there is a significant obstacle to change. Written rules are better than culture in this situation.

Many enterprises even do not recognise they are creating mental blocks to creativity. Following in table n.2 few examples as described by the Harvard Business Review (2003):

Stumbling Blocks to Creativity	Building Blocks to Creativity
Resource myopia (nearsightedness)	Resourcefulness
Following the rules...too closely, too often	Ability to think outside the rules
Seeing play as only frivolous	Playfulness
Focusing on just the right answer	Focusing on exploring possibilities
Being judgmental, critical	Being accepting
Fear of failure	Ability to accept failure and learn from it
Discomfort with taking risks	Intelligent risk taking
Difficulty hearing another perspective or opinion	Active listening, acceptance of differences
Lack of openness to ideas	Receptivity ideas
Political problems and turf battles	Collaboration, focus on mutual gain
Avoiding ambiguity	Tolerance for ambiguity
Intolerance	Tolerance
Lack of flexibility	Flexibility
Giving up too soon	Persistence
Worrying too much about what people will think	Having an inner focus
Thinking you're not creative	Recognizing creative potential in self

Table n.2: Creativity's Mental Blocks and resolutions²²

²¹ **Line Management:** a manager who heads a revenue-generating department and is responsible for achieving an organisation's main objectives by executing functions such as policy making, target setting decision making.

²² Adapted from Harvard Business School Press. (2003). *Managing Creativity and Innovation*, Boston, Massachusetts, p. 44

2.4 Target Market's facilitators

One of the most important sources of innovation is certainly constituted by the customer and, in any case, the market is a fundamental element in the innovation activities. The relationship with customers is paramount from the earliest stages of the enterprise. The client's involvement in the initial stages of the process, in fact, increases the chances of success of the new product (Castaldo 1998).

According to a consolidated approach, the Manufacturer Active Paradigm (Von Hippel 1978), the company defines the characteristics of innovation through analysis and interpretation of customer needs. A different approach, called Active Customer Paradigm necessitates waxes and own forms of collaboration between businesses and clients aimed at developing new products (Baglieri, Prandelli 2001). One of the goals is to identify, select and then finally motivate available and collaborative customers in the new products development process. In this respect, clients can be classified about the ability to play a significant role in the innovation process.

2.4.1 Lead user

In the market for industrial goods, some clients who, for the special position occupied, can be representative of future needs in a certain market, the so-called lead users. Lead users can guide the development of innovative technological solutions. In some cases, those customers who can anticipate a lot of those needs which then will also spread to less sophisticated or less interested customers, in the specific product. In the following figure n. 4 an example on how 3M divisions used to glean innovative ideas coming from Lead Users.

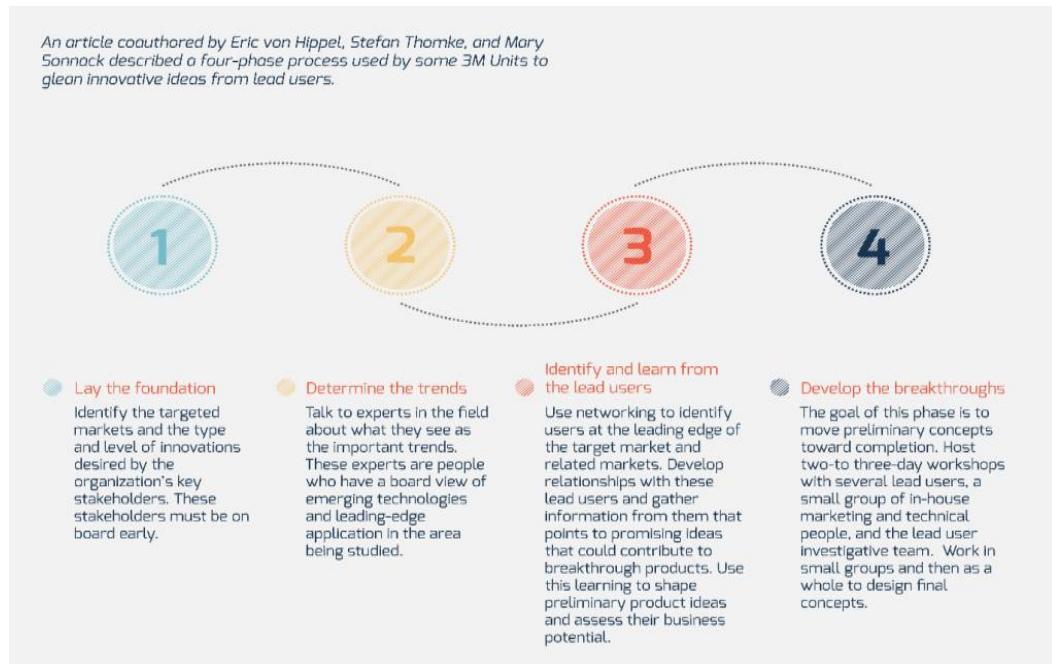


Figure n.4: Lead User example – 3M²³

2.4.2 Trendsetter

The trendsetter customers are those who anticipate the requirements that will be developed within a given market, the consumption one, and in some way involved in the formation of these needs, indicating a certain mode of use of the product to the rest of consumers. In some theories, they are described as pioneers²⁴.

In some cases the pioneer customers, having built up significant expertise and experience in the use of the product, are also able to play the role of opinion leaders. In this case, they can significantly influence the choices of the early majority, which will arrive only later to adopt the new product and which will constitute the significant part of the so-called "belly" of the market.

²³ Adapted from Harvard Business School Press. (2003). *Managing Creativity and Innovation*, Boston, Massachusetts, p. 32

²⁴ **Pioneer**: a person who is among the first to research and develop a new area of knowledge or activity.

3. The innovative process: managerial and organisational elements

This chapter will address the theme of the operating modes through which innovation is introduced, starting from the operation of developing the new product, from the initial idea to the translation into a project up to launch into the market. In this chapter, it will be discussed another critical element, the organisational structure that can be adopted for the development of new products, which requires close coordination between different business functions.

3.1 The sequential and parallel process

The sequential process was mostly taken during the period of mass production: it was able to ensure high conversion potential activity, consistent with the typical needs of the productive activity of the period. Each phase is clearly separable from the other, and the sequential logic is found when a phase is over, and the next one begins.

Steps of the sequential process as described by Grando, Verona and Vicari (2006):

1. **Concept generation:** creativity in this phase is the most important thing because it ensures the production of a vast number of designs, likely to result in innovative processes. The winning ideas are those that meet certain criteria. A first criterion to identify the possibilities for a new product is to assess the potential market size, especially in relation to the demand; a second test is to consider the competition that could potentially be generated once launched the product; a third element of the idea is to consider investment and the cost to develop and produce the product in relation to the possible revenues. The output of this phase is called product concept;
2. **Research and Development (R&D):** only the firm's technical and scientific skills are fundamental;
3. **Prototyping:** the realisation of preliminary versions of the product. It tries to satisfy the technical characteristics of the project developed previously, and secondly the difficulties of construction and then the series production of the finished product. Following these assessments, the decision is made that very often is final, about the possibility of continuing or not in product development;
4. **Industrialisation:** in this phase, companies design the features of the necessary production system to the realisation of the product;

5. **Market test:** after the first set of production, sometimes called pre-series, it usually goes to the market test. Through this, it can be highlighted the critical elements about how to buy or use the product, why the product is tested by the user, any changes developed in the supply system before proceeding to launch on a large scale. This test primarily avoids substantial investments to start the product, which then is not depreciated;
6. **Launch:** the required skills are no longer technological and productive, but marketing ones. This stage is the moment of truth when it can be seen the results of the efforts of all previous phases and in which will be discovered if the potential of the new product market was correctly assumed.

3.1.1 The parallel process

The parallel process model does not lend itself to the changes that a chaotic environment requires, each revision implies that the innovation process is interrupted and proceed backwards from the point where the change is to be introduced, with a strong elongation of time and cost. A newly implemented logic is called Concurrent Engineering²⁵ represented in the following figure:

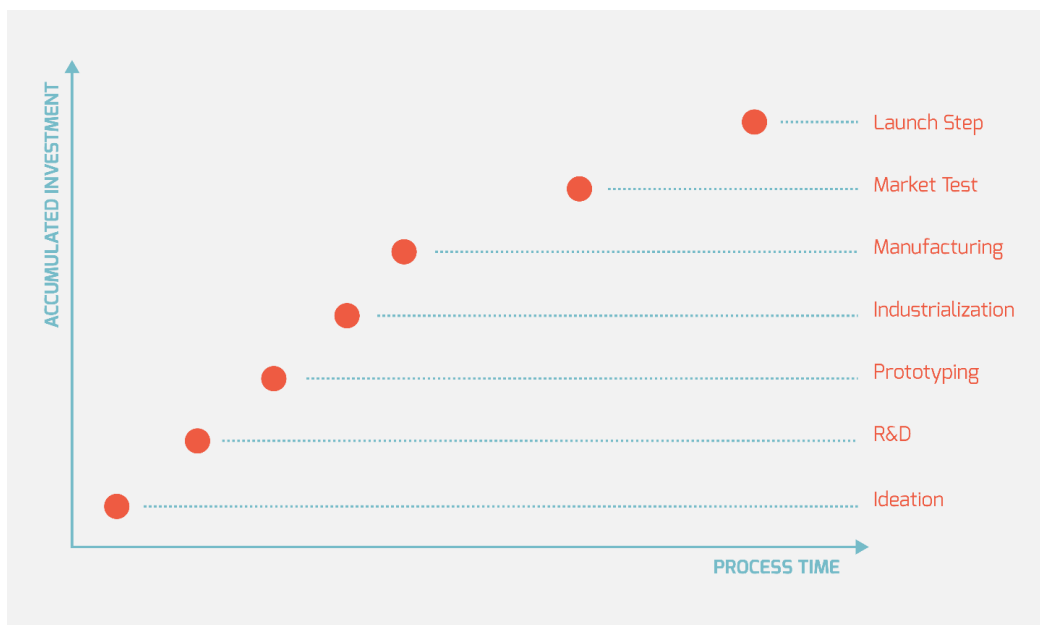


Figure n.5: The Parallel Process in New Product Development²⁶

²⁵ **Concurrent Engineering:** is a comprehensive set of methodologies, techniques and tools that allows an approach to integrated design of a product and its production process.

²⁶ Adapted from Grando, A., Verona, G., & Vicari, S. (2006). *Tecnologia, Innovazione e Operations* (Second Edi). Milano: Egea, p. 160

Clearly, for this kind of logic, there must be a great environment where the communication inside the team is as good as possible. Even the skills have to be congruent to achieve the same goal.

3.2 Innovative Project Management

The launch of a new product, together with its stages, is a dangerous business. To explain these risks there are several causes: in the first place the technology is subject to changes during the development process of a new product and then may be no longer adequate to the time of launching; the needs of the application can mutate and be no longer consistent with the product offered; during the product development process can emerge technical problems, more than expected; some organization functional areas may not be up to the task, and so build a constraint to the success of the new initiative.

To reduce the linked costs to development and launch, and maximise the chances of success, are provided at the end of each stage, the “state gate” verification moments, when the decision is made to proceed (go) or not (kill) with the product development. The decision to terminate an innovative project is very often the lack of coherence with the resources, especially technological and market, in the company. Additional evaluation criteria are familiar (proximity of the new products to old) and consistency (adequacy of resources in an organisation). Familiarity and coherence mainly concern the areas of technology and marketing. The practice leads us to understand that companies are reluctant to continue projects where marketing and technical skills are low (low consistency), but not necessarily give up projects involving new technologies and unknown markets: what matters is not the novelty of a product or a market in itself, but that the company has sufficient capacity to acquire technical and marketing skills needed to successfully launch the new product.

3.3 Innovation management structure and its tension

Some of the biggest problems related to the development activity of a new product are to coordinate the various functions, to be able to communicate and interact effectively across various skills. This coordination can take three forms as described by Grando, Verona and Vicari (2006):

- **Functional:** each business function has the task of developing the part of the project that belongs to her, but this model is not applicable to complex projects because functions do not integrate their languages, skills and different objectives. This model

can be applied in small companies where the control function is exercised from the top or in the technology driven business where technological expertise still drives the coordination of the various activities. Very often there is a coordination committee involved in those responsible for all functions;

- **Project Management:** the advantages of this approach are found in the formalisation of the existence of a project, with the time and resources allocated. The Product Manager²⁷ (PM) is responsible for coordinating the resources that every business function provides for the conduct of the new product development process.

There are two versions of this type of coordination: lightweight PM and heavyweight PM. In the first one, the PM has no direct hierarchical power over the resources allocated to the project, he has a coordination and liaison role, while the work of the people is determined and evaluated by the respective business functions. The main limitation of this method is precisely the lack of power PM; he can only influence the process by providing information, illustrating problems, helping when conflicts arise (again meet the heads of department). On the second PM model, when proceeding to the implementation of highly complex projects, it comes to heavyweight PM who has a stronger power on the modalities of the project usually is a senior management position with some experience. To that person is assigned the responsibility on the project, even the possibility to define the working methods of the participants, to fix the time within which the activities of each one must be carried out and to evaluate the technical and professional contribution of the people involved;

- **Self-Team:** task forces are independent organisational units that perform activities independently from the rest of the organisation. Participants are assigned to the project full-time. The team works with its organisational rules, functional to the achievement of project objectives, different than the company's mode of operation. The team is assigned a responsibility on the success of the project, and all members are aware that their evaluation will be based on the results. Obviously, the use of a dedicated task force involves a significant cost to the organisation, and it made sense only in the case of very complex projects and considered to be of strategic importance to the enterprise.

²⁷ **Product Manager:** the Product Manager (or PM) is responsible for the strategy, roadmap, and feature definition of a product or product line.

3.3.1 The tension between creativity and efficiency

The organisation should effectively pursue such activities characterised by high levels of efficiency and at the same time, the activities characterised by elevated levels of creativity and change. The best way to deal with this problem is to make the company ambidextrous, oriented to the continuous reduction of costs, and other organisational structures based on the search for maximum creativity and innovation possible.

Different alternatives to this business unit are external to the company, in this way are separated clearly the part of the organisation oriented towards efficiency and this time the development of new products. Still, it could be entrusted to a third party the task of working on research and development, leaving the organisation on charge for pursuing the maximum efficiency in operations. Lastly, it would be to foster the spin-off researchers to leave the possibility of working with different mechanisms than innovation. The choice of the most suitable mode depends on the operating leverage of the one part, and by another strategic importance of the innovative activity control.

4. Tools for Creativity

The following list of instruments has been chosen to enhance creativity. As a matter of original principles, I opted to put the Divergent and Convergent Thinking principle as the first one. This one is immediately followed by the main four divergent thinking principles.

4.1 Divergent and Convergent Thinking

Organisations and creative groups are improved when both modes of thought are applied: divergent and convergent, as described by Puccio, Mance and Switalsky (2012).

The creative process begins with divergent thinking, a way of thinking out of the comfort zone with a broad vision and limitless. This concept seems very simple to apply, but on the contrary, requires a specific effort. Once analysed the problem/thoughts from another angle, is the case of "turn on" convergent mode. This mode helps to answer the question: Are these new exploitable ideas? The part of convergent thinking is very useful when it is carried out in the group because it speeds the selection process and links between different ideas of divergent thinking mode. From one step to another, should be stopped emphasising what is new and creative, going to emphasise what is useful like the representation of the following figure n.6:

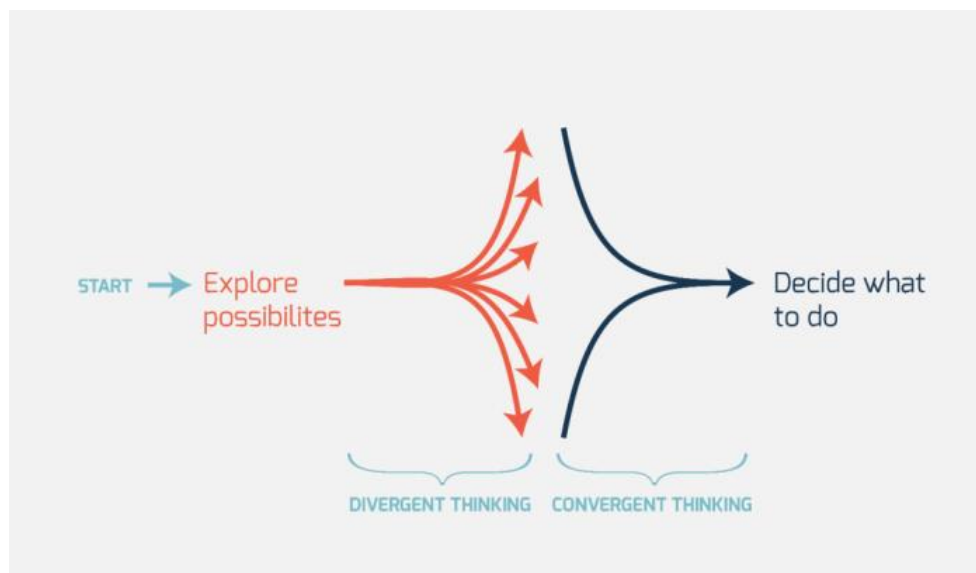


Figure n.6: Representation of Divergent and Convergent Thinking²⁸

²⁸ Adapted from J. Puccio, G., Mance Marie, M. S., Switalsky, L. B., & D. Reali, P. (2012). *Creativity Rising*. Buffalo, NY. Position 995, out of 3073, of the eBook.

Four fundamental principles have been proven to be effective at enhancing convergent and divergent thinking:

- Defer Judgement;
- Go for Quantity;
- Make Connections;
- Seek Novelty.

These principles are strictly interrelated.

Defer Judgment: it requires the ability to suspend the scepticism to assess any possible new idea. This step is much harder than it sounds, particularly in a western culture where quick decisions are required. What is written above does not mean that the judgment is something negative, rather, it is essential but at the right moments. Avoid judgments in the initial stage of the creative process has two meanings: one internal and one external. Internal because it also refers to the possibility of not judge our ideas. Outside because it concerns the thoughts of others. Avoid a primordial judgment is the basis of the following three points;

Go for Quantity: more generated alternatives, more analysable solutions. The concept of quantity can be thought in two ways: in a particular way and in a general way. In that particular because following the principle of divergent thinking it helps to choose from multiple solutions. In the general one, because of the habit of divergent thinking in real life where people use to try and look for the higher number of existence possibilities. Aim for a larger amount is a concept symbol of intentional creativity. More ideas mean to require a special effort in their thinking, to go beyond their knowledge. More ideas are created, the more chances you have to create connections;

Make Connections: create connections between disjointed ideas is a fundamental part of the creative process. A cardinal principle of connections you can do is to go beyond the barriers of a simple scope. Go beyond a simple scope allows it to be original and creative. Create connections remains the best way to increase its mental flexibility and the ability to generate new ideas in familiar contexts;

Seek Novelty: there is no creativity without originality. This point is both a reminder and encouragement to the generation of new and unusual options. Creativity does not mean just to be original; means also to be useful, measurable and appropriate. This point is closely related

to the previous one. Create connections between different perspectives is the easiest way to try the novelty.

4.2 The Six Thinking Hats – Lateral Thinking

The six hats method turns out to be one of the most straightforward and effective ways in the field of creativity. A suitable instrument is in working groups or individually. The six hats represent six different types of application thought, each one with a different colour as explained by De Bono (1992) and listed below:

White Hat: the colour refers to a neutral environment, traced with the need for filling, in this case of information. Not surprisingly, the goal of this cap is to focus on the required information for the discussion of the problem. All information already available, and that to be obtained.

Red Hat: the colour, in this case, refers to fire and heat. Red Hat refers to all those who are the feelings about the discussion in place. The basis of these impressions can be the result of years of experience, or simply the ignorance of the data. It should be clear to everyone that with this hat it is possible to make mistakes or fail to forecast the result, but does not matter. It does matter to express the own feelings.

Black Hat: Black is the perfect colour to bring up the "heaviness" of a comment or critical judgment. This hat is essential to avoid mistakes during the evaluation of new ideas or solutions. A mistake can be devastating, and more than that, nobody wants to deal with it. It is the most used hat during meetings, and possibly the most useful hat. There is the need to make a note with this colour: it is very easy to wear the black hat. Creativity can be killed very quickly and directly. The hat is precious, but the overuse of it can be a problem.

Yellow Hat: the colour refers to the sunlight. The yellow hat is the hat of optimism and positive comments. Among the positive feedback, you may include the evaluation of the benefits and the consequences thereof. In many cases, the yellow hat requires a deliberate effort, as opposed to the black one which is more natural.

Green Hat: the colour of nature. The colour green recalls creativity. New ideas or additional alternatives are welcome with this hat since it calls for creativity.

Blue Hat: blue as the colour of the sky and the view from above. This hat is for process-control. To use this helmet is usually the chairman or the organiser of the meeting. The blue hat is for thinking about thinking.

In Western culture, the criticism is the basis of discussions. This major review has several implications. Very often the protagonists of an argument are more interested in the same victory rather than the thorough understanding of the subject. One of the objectives of the use of the hats is to avoid adversarial thinking and to support the exploration cooperative. The six hats tool is also useful in case of conflict between ego and performance. Using the different hats, will be possible to eliminate this problem because there is an extrinsic commitment to go beyond own thoughts. The same thing happens in the possibility to counter the usually negative people. Highlighting the continuous and repeated use of a type of hat, in place of another, it is a very useful tool to also avoid the categorization of people.

“It is only too easy to see the hats as categories. They are categories of thinking behaviour, but not of people. Just as every golfer needs to attempt to use all the clubs, I know every thinker must attempt to use all six hats.” Edward De Bono, Serious Creativity (1992)

4.3 The Creative Problem Solving (CPS) Method: The Thinking Skills Model

The first version of the CPS method was developed by Gerard Puccio, Marie Mance, and Mary Murdock (2012) and was formally called CPS: the Thinking Skills Model. As showed in the following figure n.7, the template includes three main conceptual structures, divided into six different steps of thought, centred on an operational step. The three most important conceptual areas reflect the natural creative process faced by each one of us in any challenge or opportunity.

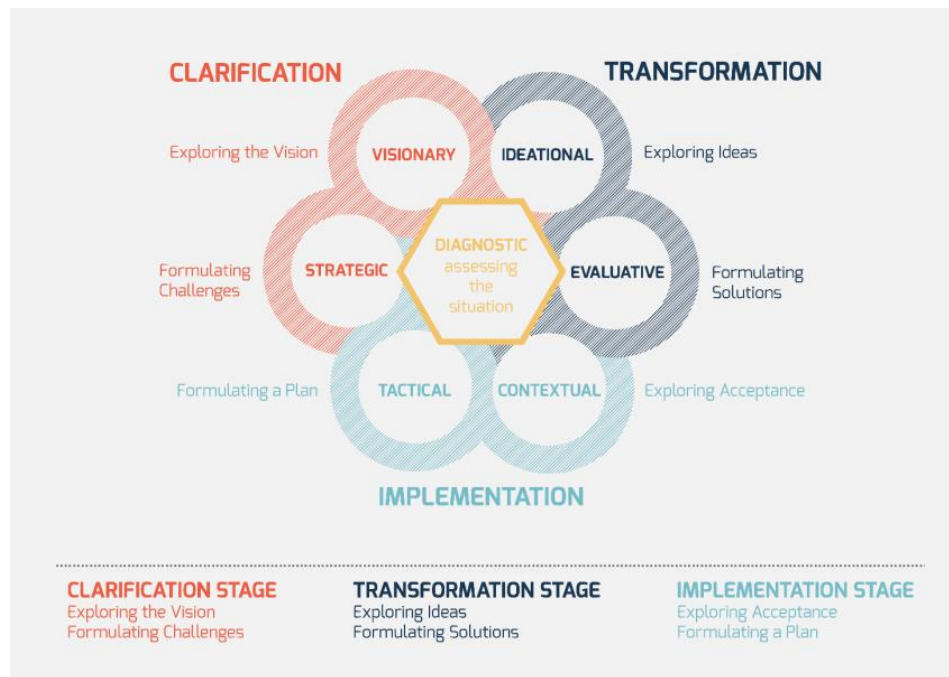


Figure n.7: Creative Problem Solving Model²⁹

- By “creative” it is meant the production of ideas or options that are both new and useful. They contain elements of novelty, uniqueness, originality, and they have value, are relevant, serve a purpose.
- By “problem” it is meant a situation that exists when there is a gap between what you have and what you want. The novel, ill-defined and complex problems are the kinds of problems that CPS is designed to address.
- By “solving” it is meant taking action in some way. The implementation stage of the CPS process includes refining solutions and making them work in the environment and context in which they will be introduced.
- By “process” it is meant a particular method of doing something, generally involving some steps or operations (Puccio, Mance, Switalsky 2012).

What makes the process described above so effective is the use of divergent and convergent thinking at every step. This method can be utilized individually or in groups, as well as at the organisational level, improving creative thinking deliberately.

The first of the three concepts is clarification. The second is the transformation of the faced reality. The third, and last one is the implementation of the chosen solution through a plan. Each of these three macro areas includes two formal internal steps, as described in the figure

²⁹ Adapted from J. Puccio, G., Mance Marie, M. S., Switalsky, L. B., & D. Reali, P. (2012). *Creativity Rising*. Buffalo, NY. Position 1808, out of 3073, of the eBook.

n.7 above. The first phase in each zone includes the exploration phase, not mentioned in the figure, followed by the formulation: from broad concepts to more concrete outcomes.

At the heart of the model, there is the control function or diagnostic one. There is another important point of this process: the provided steps are integrated and independent at the same time. The model is flexible. It is through the use of it that it is possible to acquire the mastery of the model. Each macro area, less than the diagnostic one, has an essential Thinking Skill required, an Affective Skill and a Thinking Tool³⁰. The following part goes deeper in the stages.

To start, the first need is to identify the problem. Once identified it could start with the data collection phase. Only beginning to accumulate data it is possible to become aware of the situation. This data collection phase is a large stage, identifiable with the divergent thinking phase, soon followed by the convergent one: data analysis and selection of the main ones. The first stage ends with a "return" to the heart of the model, choosing the operational decision of the next step to follow.

4.3.1 Clarification stage

Once identified the problem during the exploration phase, this phase has to deal with the visions exploration, to determine the desired outcomes. Only by formulating future challenges it will be possible to identify obstacles that will necessarily overcome. The phase of divergent thinking is given by the generation of different views on outcomes; a key point will be again going for quantity, so following the four described guidelines above. The convergent next step is the selection phase of the visions.

Exploring the Vision

Thinking Skill required: *Visionary Thinking*, that means articulating a vivid image of what is desired to be created (Puccio, Mance, Switolsky 2012).

Affective Skill: *Dreaming*, that means the ability to imagine as wishes and hopes (Puccio, Mance, Switolsky 2012).

Thinking Tool: *Imaginary Journalism*, that helps to stretch the vision in the desired future, as if it has already happened (Puccio, Mance, Switolsky 2012).

³⁰ **Thinking Tool:** a structured strategy that focuses, organises and guides an individual or group's thinking.

Formulating Challenges

Thinking Skill required: *Strategic Thinking*, that means identifying the critical issues that must be addressed and pathways that are needed to move toward the desired future (Puccio, Mance, Switolsky 2012).

Affective Skill: *Sensing Gaps*, that means becoming consciously aware of discrepancies between what currently exists and what is desired or required (Puccio, Mance, Switolsky 2012).

Thinking Tool: *Webbing*, that helps to map the problem space at the appropriate level of abstraction (Puccio, Mance, Switolsky 2012).

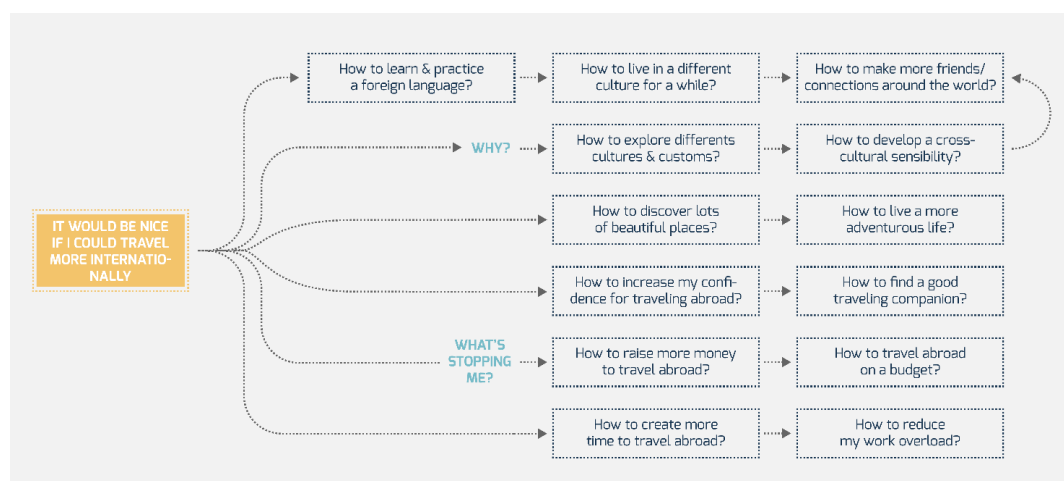


Figure n.8: Webbing Tool³¹

4.3.2 Transformation stage

Once selected the outcomes vision, the time has come to formulate ideas and solutions. In the generation phase, the divergent thinking calls for criteria and ideas. It is essential to follow the four basic principles described at the beginning of the chapter. In the convergent phase, it is important to select the most concrete ideas and put them at the centre of the model to implement them in the next stage.

Exploring Ideas

Thinking Skill required: *Ideational Thinking*, which is the ability to produce original mental images or thoughts that respond to critical challenges (Puccio, Mance, Switolsky 2012).

³¹ Adapted from J. Puccio, G., Mance Marie, M. S., Switolsky, L. B., & D. Reali, P. (2012). *Creativity Rising*. Buffalo, NY. Position 2253, out of 3073, of the eBook.

Affective Skill: *Playfulness*, that means freely toying with ideas (Puccio, Mance, Switolsky 2012).

Thinking Tool: *Forced Connections*, that encourages approaching challenges with an attitude of playfulness, humour and fun, generating flexibility and production of original ideas (Puccio, Mance, Switolsky 2012).

Formulating Solutions

Thinking Skill required: *Evaluate Thinking*, which is assessing the reasonableness and qualities of ideas to develop workable solutions (Puccio, Mance, Switolsky 2012).

Affective Skill: *Avoiding Premature Closure*, which is resisting the urge to push a decision (Puccio, Mance, Switolsky 2012).

Thinking Tool: *Pluses, Potentials, Concerns and overcoming concerns (PPCo)*, which is a bridge to implementation.

Keep in mind: it is almost a truism that in any idea generating session there will be someone who is assessing all of the ideas before they are fully formed. Ideas do not need to be practical while they are being developed. In fact, a superb method of generating ideas is to find ideas which are not practical and to remove the obstacles to their practicality. The fact that something is not or was not practical does not mean that it could not be made to come in handy with a little work (Clegg, Birch 2000).

The diagram illustrates the PPCo Tool, a structured method for evaluating ideas. It consists of four main columns, each with a title and a list of prompts or questions to guide the user's thinking. A circular icon at the top left indicates the tool is used to 'EVALUATE' an idea.

HOW TO EVALUATE YOUR IDEA	Enroll in graduate school through a distance Master's degree program that will give me the opportunity to deepen my studies and continue to work full-time.
Pluses (list what is good, positive about the idea) Allows me to financially support my studies (by continuing to work) Keeps continuity with my current way of working and living (I do not have to move to another city) It is an affordable way to pursue graduate school Gives me the opportunity to study in depth what I have passion for Helps me develop digital technology skills (working at a distance, using internet and other online tools) Etc.	Potentials (list what this idea might lead to, what are the future possibilities) It might advance my career by leading to a promotion It might lead to establishing a network with colleagues around the world It might help me find a more exciting job opportunity Etc.
Concerns (list the shortcomings, limitations or weaknesses of the idea) How to balance the time and energy I devote to my work with the demands of graduate school? How to juggle work, study and personal life? How to bring a more human touch to courses learned at a distance? How to get full access to all resources I need from a distance (e.g. books, journals, instructor time)? Etc.	Overcome Concerns (generate ideas to overcome the concerns, starting with the most important): How to balance the time and energy I devote to my work with the demands of graduate school? Pursue more flexible hours at work Get more help with my family chores Reorganize my weekend time to be more productive with my studies Cut back in commuting time and work one day a week from home Use teamwork to delegate more Etc.

Figure n.9: Pluses, Potentials, Concerns and overcoming concerns (PPCo) Tool³²

³² Adapted from J. Puccio, G., Mance Marie, M. S., Switalsky, L. B., & D. Reali, P. (2012). *Creativity Rising*. Buffalo, NY. Position 2420, out of 3073, of the eBook.

4.3.3 Implementation stage

At this step, there will be a chosen and filtered solution by the previous steps. What will be important in this step is the maximisation of the idea regarding concreteness. The creation of a plan and the development of the same.

Exploring Acceptance

Thinking Skill required: *Contextual Thinking*, which is an understanding of the interrelated conditions and circumstances that will support or hinder success (Puccio, Mance, Switolsky 2012).

Affective Skill: *Sensitivity to One's environment*, which is the degree to which people are aware of their physical and psychological surroundings (Puccio, Mance, Switolsky 2012).

Thinking Tool: *Other People's View (OPV)* that direct the attention to the other individuals involved in a situation and to look from another perspective (Puccio, Mance, Switolsky 2012).

Formulating Plan

Thinking Skill required: *Tactical Thinking*, which is devising a plan that includes specific and measurable steps for attaining the desired end and methods for monitoring its effectiveness (Puccio, Mance, Switolsky 2012).

Affective Skill: *Tolerance for Risks*, which means accepting and being able to function with the possibility of failure or setbacks (Puccio, Mance, Switolsky 2012).

Thinking Tool: *How-How Diagram*, that helps to identify specific and detailed action steps being focused in the process of implementation.

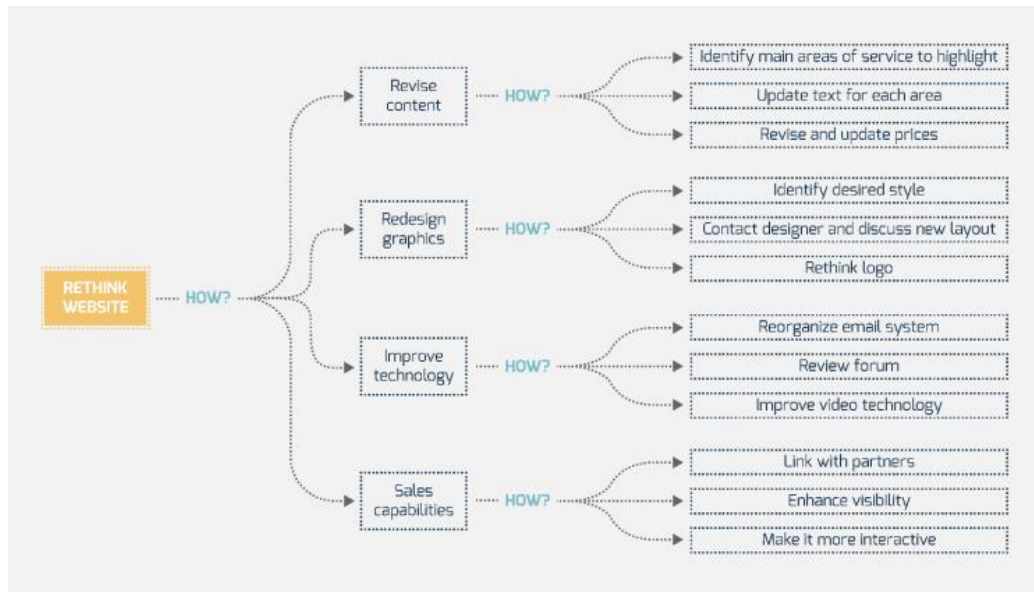


Figure n.10: How-How Diagram Tool³³

Three more affective skills described by Puccio, Mance and Switalsky (2012) in their work are:

- **Openness to Novelty**, which means being able to entertain ideas that at first seem outlandish and risky;
- **Tolerance for Ambiguity**, which means being able to deal with uncertainty and to avoid leaping to conclusions;
- **Tolerance for Complexity**, which means being able to stay open and persevere without being overwhelmed by large amounts of information, interrelated and complex issues, and competing perspectives.

4.4 Deliberately Brainstorming

What nowadays is called "Brainstorm", it means a creative mental effort, concentration, with the aim of solving or developing, new concepts. Might be a product for the design market, a service for Public Institution, a better definition of a problem, does not matter, what make

³³ Adapted from J. Puccio, G., Mance Marie, M. S., Switalsky, L. B., & D. Reali, P. (2012). *Creativity Rising*. Buffalo, NY. Position 2557, out of 3073, of the eBook.

sense here is the fact that this operation, that was born in 1938, thanks to Alex Faickney Osborn³⁴, helped us to come out with "new" and better ideas.

In the 60' the brainstorming method became well known and mostly used and at the same evolved into different meanings, sometimes as "universal" way of fixing problems. There is nothing more wrong than this ultimate sense. Brainstorming it is just part of the creative process, an essential element that must be accomplished carefully. Here there will be a clarification on which players and preliminary procedures are needed to access a brainstorming session.

4.4.1 Brainstorming observations

A better understanding of this tool led us to accept and include the following observations:

- Imagination can be more productive if judgment is excluded. The education and experiences that our society did lead all of us are about to think in a more rational and judicious way. The result is that the society is almost stopped from creating new ideas. Suggestion: postpone the judgment in a specific session of Brainstorming.
- More ideas are true, better it is. It is proved that the last 50 thoughts of an ordinary sitting of brainstorming are more relevant than the first 50 (Osborn 1948).

What has to be achieved through this process is what is called “synergistic action” translated in the following equation: $2+2=5$.

4.4.2 The committee

There are different opinions on how many persons should be considered to perform the right session, but when there is no training before, the good average, according to with the Professor Robert T. Bales of Harvard (Vicari 1998) is around a dozen, preferably odd. Inside these twelve persons should be present a Director, a Vice-Director, five central “players”, and other five guests. The job of the primary ones is to conduct the sitting in the right way because they demonstrated on other occasions the ability to boost easier the meeting. The guests should change every two sections to avoid private parties, synonymous of wasting time

³⁴ Historical Note: Alex F. Osborn knew that he was not the first one that introduced this concept; researchers discovered that similar procedures were used in India 400 years ago by the Indian monks to perform religious groups. The Indian method name was Prai-Barshana: Prai means "take out of yourself" and Barshana means "problem."

inside brainstorm operations. It is always necessary to mention that inside the group must be present at least one woman while should be more than half of the group composed of girls whereas there is a developing of feminine problems, (Osborn 1948). Ideally, the perfect meeting lasts for no more than 30 minutes (Osborn 1948).

4.4.3 Leading the session and preliminary procedures

The Brainstorm Director, or facilitator (Isaken 1998), must be trained before starting the lead of the first meeting. The first Director's task is to prepare the problem, a clear and not generic/umbrella one. A list of suggestions can be used in case the meeting in going down regarding ideas, and it is strongly suggested. Preparing the materials, it is crucial to perform a right and concrete session as well as having a good Vice-Director that has the function of a office assistant. Might be useful to have more than one vice-director to face faster meetings.

At the beginning of the session, the Director should reintroduce the problem and have a brief to prepare the group and create the environment. After that, he encourages "linked" ideas, where "linked" means strictly correlated. During the meeting, the participants can ask the attention of the Director raising their hands or in another method previously decided. Having the facilitator does not mean that he/she is going to lead the entire process alone. Neither for Osborn, in his review about this Creative Thinking Tool (Osborn 1948), there is a rule of using the facilitator as the only one that can lead and manage the Brainstorming process. His/her role is to support a broad range of useful techniques during the session.

5. Digital Transformation Era

Once discussed and explored the section before, that had the aim of providing the right literature reviews to Professors, Students and Passionates, to have a broad understanding of what we need to perform a creative session in business problems, it is possible to switch to the following sections of this Master Thesis.

This part of the thesis focuses on the opportunity spot identified in the Microsoft Italia investments on the Microsoft House. The starting point has a historical introduction to the digital transformation, and how these types of investments affect the current businesses in the world.

Data gathering about Digital Transformation, Microsoft Inc. and Microsoft House have been provided, as well as creativity management viewpoints.

5.1 Historical introduction

As human individuals, we are fortunate to live in the digital change, a change that is often stated as the fourth industrial revolution. What most impacts our generations have the advancement of technology in the health sector, education, communication and productivity. Every single marginal improvement in one of these areas corresponds to an increase of our life expectations.

As an example, we can take the next figure n.11 representing New York, which is the intersection of Broadway on Fifth Avenue and 23rd Street. The structures of the buildings are similar to what, the only thing turns out to be different is the technology found in the picture. The first image taken in 1905 presents a prominent presence of horses and people, while the second, taken about twenty years later, not even depicts a horse, but a series of aligned cars.



Figure n.11: New York City's streets

What happened in between was a profound transformation process.

In 1905 served more than 100,000 horses to transport goods and people within the city of New York, and thus, tens of thousands of people were employed in one of the horse's Management companies (Tarr, Joel A. 2001). Nationally, a quarter of the population was employed in agriculture to feed the horse market (Gordon 2016). Two decades after something has changed. A new form of horsepower dominated. New types of jobs have been created and a whole generation grew up in support of agriculture has disappeared from the labour market. A company that has stopped to concentrate on feeding the horses needed new laws, new infrastructure, new social norms that allowed the development of all.

These two pictures above are a great reason to stop for a second and think seriously about the implications of a digital transformation like today. Today we are sitting metaphorically on the verge of the old era, ready to jump into the new one. The benefits described by the big companies seem very broad, and no longer seems impossible to think of a future where poverty will be eliminated, the climate change tackled more effectively, and new forms of collaboration and communication will be used to bring creativity and innovation to 'height of their importance.

In the same way, we look at this revolution with enthusiasm; we can imagine a bleak future, uncertain and full replacement of man by the presence of robots. Clearly, it is not easy and instantaneous to find an answer to the question of how to go our future, but stop and think about what the consequence is that a more valuable time. Humanity has already survived three industrial revolutions, and it is worth believing even survive the next.

The first Industrial Revolution took place between 1700 and 1800, with the creation of the steam engine, creating a strong manufacturing growth for over 60 years. The second industrial revolution is identified with the creation of the first power stations, the combustion engine and the horse phone invention between 1800 and 1900. It is the same revolution that for the photos at the beginning of New York page. The third industrial revolution lies in transforming the way we communicate, and we process the information, and this happened in the second half of the twentieth century.

At the heart of the fourth industrial revolution instead, there is the power of cloud computing. Now we can collect, analyse and process an amount of data has never been used before, at a higher speed, finding connections that until recently, were imperceptible. With cloud

computing³⁵ and advanced analytical capabilities of artificial intelligence, we can see the large innovative increment in robotics, materials science, 3D printers and more.

If we combine the power of cloud computing, the uniqueness of our mobile device, we get a new view of how the market may develop, and basically, there are no limits to imagination. We can think of examples like Uber, the largest taxi company in the world, who does not own any vehicle. Airbnb, the biggest catering companies in the world, who does not own or operate any hotel. What is the difference between this and previous industrial revolution? The speed with which it is happening.

Nevertheless, there are still many places on our planet where it is not yet possible to speak of true industrial revolutions. One example is Nigeria, the fifth largest reality of the world's oil exports. This nation does not have the adequate energy infrastructure that allows the population to live in acceptable conditions, and yet, in Lagos State, there is a school that uses solar panels to high-tech power batteries and provide enough energy for students to use artificial intelligence necessary for studies. The same energy produced by the panels and not used during the day, energy is stored in cells capable of releasing energy during the night, to allow students to continue their studies in the evening.

Another example of this industrial revolution happens in the United States of America. Two scientists at Microsoft, graduates at Columbia University, published a study of which can be diagnosed with pancreatic cancer in a patient, starting from research that leads on search engines such as Bing. In the latter instance, there is a serious problem of private data management, but at the same time shows how it is possible to prevent a disease that has only a 3% chance of survival, by doubling the odds if diagnosed more quickly. This example provides a little vision of how powerful the functionality of cloud computing and big data management are.

The same positive example can be advanced on the access to credit financial system. Between 2011 and 2014, more than 700 million people had access, for the first time, to a bank account, and is quite convincing that very soon everyone on the planet will have a bank account.

³⁵ **Cloud computing:** is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Working in a technology company, makes easy to look at all these changes as a benefit and to progress, but do not all share the same vision. The truth is that most likely many people will lose their jobs in the coming years due to the advent of robots and automation company. However, now that the digital transformation seems inevitable, the goal that as a manager must ask ourselves is to make people aware of the change that will take place and the opportunities it is producing. We have to make every effort that all individuals, even those who have not had the good fortune to live again the first and second industrial revolution, the opportunity to live the fourth.

The best way to build trust is through frameworks that ensure data security and the critical importance of protecting privacy. This issue is something that embraces the law and calls for their continued contribution. What we also know, it is that the power of the cloud and the digital transformation are put at risk when a State decides to make use of personal data for the security of the country, or when a private company uses personal data for commercial purposes. It is true, however, while the responsibility for the safety of the data also falls on technology companies, those investing in the data center and have an obligation to protect the infrastructure, regardless of the laws.

All government and private ecosystem must invest in the right balance between the security of the data and the country and the freedom of expression. Inclusiveness also stems from this free speech. Inclusiveness in the digital transformation, made possible through investment and focus on the opportunities that it generates.

If taken the pictures of New York at the beginning of this section, will be possible to notice that the Flatiron Building in the centre of the photo, is still there, unchanged between 1905 and 1925. Change the age, and the presence of machines, fewer horses and trees, but the palace is still there. What's hard is to say what will be in the same picture in twenty years. Most likely the only thing that will be the same will be the Flatiron Building, with fewer drivers of cars around, and certainly fewer accidents on the streets and cleaner air.

All those people in the figure n.11 appear to work, most likely will no longer have the same job, but that does not mean that no new ones will be new, in fact, it ways to stop again and reflect on how the importance of creativity will impact today more than ever, on the decisions were taken. The same decisions that will give answers to the coming generations.

5.2 Microsoft Inc.

Microsoft has been chosen because of its current position in the Information Technology and Innovation market. After years of leading the world, it is facing a stronger competition against players like Google, Apple, Amazon, IBM and others into different segments. Recently Microsoft decided to get the continuous increasing growth of Cloud computing market that is driven by current and potential users, which are growing every year respectively. The intention of all the players is to create new experiences through Cloud computing services. Having anything available, anywhere, has become more than just “availability” and is now an experience that starts and finishes with any single device. People are now pretending everything they might need, at any moment they want, and they settle their private and business life in function of it.

In the case study what Microsoft has to face it is the right recognition of those growth opportunities, avoiding the waste of time and resources. The challenge inside the case study is to properly use the creative and innovative tools provided from the literature review and apply them to the Microsoft business. Microsoft’s own ecosystem of shareholders, structures and service networks, it is exactly what it is necessary to leverage to reach the goal through creativity and open mind-set.

All the players mentioned above are now trying to catch the Business-to-Business opportunity and the Business-to-Customer ones. Each one of us represents a user and a faster and better choice of improving the service. We might just think about Cortana, the artificial intelligence of Microsoft, that enhances its answers and fastness along the use of it; this means that more we use it, better “she” knows us, and in the future will provide us with an answer before we are going to make the question itself. Strange to think but thanks to the Global Positioning System (GPS), Cortana is going to tell customers, while they are watching a movie in the Cinema, where it is the nearest bathroom because she already knows that every two hours and a half, for instance, we go to the bathroom.

5.2.1 Since the beginning until the '90s

The history of Microsoft Corporation began in 1975, founded by Bill Gates and Paul Allen, when they decided to propose to the Micro Instrumentation and Telemetry Systems (MITS), the development company of microcomputer, using BASIC as a programming language. The combination of the two components was successful and gave rise beginning of the American giant. It was in Albuquerque, that for the first time was possible to read the word "Micro-

soft", right after Bill Gates dropped out of Harvard University. Before long, the two founders decided to invest their energies in more depth development of the BASIC language, to the point that it is available on different devices, from here they made the decision to open up the foreign market, with a shop in Japan. It was in the 80s that the two founders, in particular, Bill, gave a major boost to the business. Bought before in part, then in full, the Seattle Computer Products, a manufacturer of software called "Quick and Dirty", which was later the basis of the historical "MS-DOS".

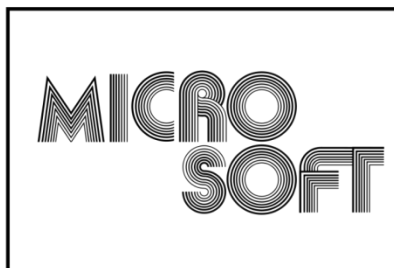


Figure n.12: Microsoft's Logo used since 1975 until May 1982

Between 1980 and 1985, Microsoft invested in search of qualified staff, by moving the seat first in the New Mexico, and then investing in Washington, widening in the few years that followed, even to Europe, in Belgium. The name passed officially to Microsoft Inc., and offices in Europe became four: France, Germany, England and Belgium. The last choice in Europe was the Ireland, but it was chosen as the site for the development and distribution of Microsoft products throughout Europe.

Before the end of the 80s Microsoft introduced the mouse in within the computer, and other acquisitions were completed in the software market, including the creator of PowerPoint. The 80s will conclude with just over four thousand employees and revenues of more than eight hundred million and a change in the used logo, as showed in the following figure n.13, to become more recognizable.



Figure n.13: Microsoft's Logo used since May 1982 until April 1987

5.2.2 From the '90s to 2010

The '90s will be the American company's economic boom. The Microsoft products will be translated into various languages, together with the launch of Windows version 3.0, first in

the ranking of software purchases from the day it was launched. After about fifteen years of life, Microsoft Inc. is the largest company of software and personal computing of the planet.

In 1992, the US President George Bush rewarded Bill Gates for his work in creating and developing the personal computer market, with a focus on creativity and innovation. In the mid-90s, Microsoft Inc. recorded over fifteen thousand employees and annual revenue exceeding four billion a year.

After about 15 years since the founding of the business, the focus shifted from product technology to the corporate culture. The Microsoft Network, better known as MSN, quickly recorded over five hundred thousand registered members, becoming the first social catalyst in digital history. Not the whole story of Microsoft is characterised by successes. Indeed, there were many legal activities carried out against the US giant, for its dominant position, accounting and management of illegal software portfolio.

In 1999, Microsoft launched Office 2000, and just two years later, the first Windows XP. Since now on the Microsoft logo, as showed in the following figure n.14, becomes a strong message to the entire information technology industry.



Figure n.14: Microsoft's Logo used since April 1987 until August 2012

The early 2000s the company are identified as a high-competition period for the company, in which his reputation goes from being an innovator company to a "necessary evil". Bill Gates left the operational side of the company in June 2008, rising to honorary president and consultant for important projects. Steven Anthony Ballmer got over. In 2009, Microsoft employees were more than ninety thousand, of which more than thirty-five thousand employees in research and development. Revenues reached figures greater than \$ 58 billion.

5.2.3 From 2010 until today (2017)

The years from 2010 onwards were years of significant changes in Microsoft. In 2011 Microsoft bought Skype for a total transaction value amounts to 8.5 billion, and other various acquisitions have arrived, as the example of LinkedIn this year (2017).

What was the significant transformation at the base of the last events in Microsoft? The change of mindset. Who brought this great cultural shift it is Microsoft's new managing director, a graduate in Electronics and Communication at Manipal University in India.

Satya has an experience of 22 years at Microsoft, moving from the research and development division to cloud and enterprise division. His first significant signal to the change in strategy market has been the abandonment of the mobile business. The new, and Microsoft's current focus has become cloud computing, augmented reality and the power of digital transformation. Openness and new mindset has been shared through the new logo as showed in the following figure n.15.



Figure n.15: Microsoft's current Logo (2017)

The strategy pursued by Satya Nadella is mainly focused on the development of the cloud industry to offset the margin erosion due to the drop in the Windows PC market. Other things have changed since joining the new CEO. The performance evaluation, for example, passed from following the well-known bell shape to a more present and informal discussion between employees.

From an old system that includes substantial economic incentives, it was not expected anything new, because the new focus is the human being's creativity and desire to learn to work together to compete effectively internally and externally. The motivation of people is constantly fed by continuous change in the digital transformation influences.

Microsoft has laid the foundation for a new era of digital transformation by giving priority to:

- How to achieve results through teamwork, considering Microsoft's performance as the sum of the contributions of individuals and the ability to leverage on each other's work;
- How to give and receive feedback to stimulate the hunger to learn and grow, removing labels and focusing on the frequency and quality of dialogue regardless of reflections on the end of the year;

- How to materialise the shift from an input approach (or activity) -based computer to a model output (or impact) -based and translate this into continuous investment in rewarding.

The first results have translated into more streamlined and focused examples of conversations' "high-impact" and the concept of "growth mindset", but have also been reported in a more equitable distribution of decision-making on rewarding and more flexibility in the allocation of budgets.

Finally, experience has shown off that change Microsoft performance management process is much more than an analysis and re-design process: it means designing the culture, rethink scalable talent management processes and can do the collective switch from being "knowers" to act each day as "learners"; finally, remembering that real change is rapid and endless marathon.

5.2.4 Digital Transformation in Microsoft Inc.

Digital Transformation is about focusing on operational efficiency, and the Microsoft mission statement represents the right fuel for this massive change:

“Empower every person and every organisation on the planet to achieve more.” Microsoft Mission

In the last few years Microsoft has set its business goal to 18 billion dollars’ revenue in the Cloud Computing market, leveraging the digital transformation on four different key points:

- Engage costumers;
- Empower employees;
- Optimising operations;
- Transforming products.

Engage costumes leads to build better, stronger engagements and to predict right data from them, delivering personalization at scale. This engagement has a market evidence thanks to the latest emerging technologies like Internet of Things (IoT). An important aspect of this point is the data management from the customer side. To deliver a customised experience, Microsoft should analyse client’s data in a private and confidential way.

Empower employees via tools that can balance private and professional life, always considering freedom and space. One way already discussed is the new performance appraisal,

not based anymore on static dashboards, but on personalised ones and new metrics, like the way employees have conducted meetings.

Optimising operations through advanced analytics able to change things real time basis. One example is the Skype for Business³⁶ instrument or Power BI³⁷.

Transforming products, services and companies using digital contents to capitalise on emerging revenue opportunities (Microsoft web data).

A digital business leader like Microsoft is now thinking about how they will reinvent their vision based on technology and the following figure n.16, sourced by MIT/Sloan “How digital leaders outperform their peers in every industry” shows exactly the Microsoft aim.



Figure n.16: Digital Masters' Key Points³⁸

³⁶ Microsoft application that allows employees to organize conferences wherever they want, in an agile way, sharing info and documents.

³⁷ Microsoft application that organize customizable dataset in an automatic way.

³⁸ Adapted from Microsoft Data.

6. Quantitative and qualitative data gathering

Starting from my first hypothesis that I want to validate, I needed to gather different quantitative and qualitative data to support and confirm the following statement:

- The Creativity Management tools, in the innovation industry, can generate measurable and concrete outputs if applied in a managed and structured way.

The statement above has been validated in the Microsoft Italia business case through the investment described below as the Microsoft House in Milan.

6.1 Quantitative data - Italian companies' context

The survey "Leader 2020" conducted by Oxford Economics for SAP³⁹, the company's cloud solutions for businesses, including interviews with 2,050 executives and 2,050 employees in 21 countries, has been used for the quantitative data gathering.

The digital transformation runs at different speeds, but where the benefits become an engine of change for the organisation, the business impact becomes tangible and measurable. It confirms the Observatory of Assochange, the association change managers, consultants, companies, universities and business schools engaged on issues of change, which this year has devoted a focus of its annual survey of digital aspects of change: as this is supported by technological tools, how and where the digital becomes, the engine itself and the impact on the corporate culture.

6.1.1 New priorities for the companies

The novelty is that, for the first time in 2016, digital transformation entered among the reasons for a change, the third to 28.2% after the reduction in cost efficiency (38.8%) and changing customer needs (31.1%). The scope of most intervention is always the organisational structure (37.9%), while the second mission & strategy surpasses the work processes to third place, but there is a significant reduction in the cost/efficiency of the pressure for change, passing from 47% to 38.8%.

How to read this data? "Companies continue to enable transformation and change programs to improve their efficiency and reduce costs," says **Salvatore Merando**, Assochange President.

³⁹ Fiertler, G. (2017). *L'Impresa* - Ormai sono chiari i fattori manageriali di successo delle digital winner, ma la maggior parte delle aziende è ancora frenata da ostacoli culturali e fa fatica a capire quanto gli strumenti digitali favoriscano il cambiamento stesso. *January*, Pages 70–73.

"This lever, however, seems in fact settle, and perhaps even fall because companies are finally seeing signs of recovery and turn more attention to the outside through innovation in products/services, helped by new models of digital interaction with customers. However, this is our assessment; we have no specific answers in a survey of the reasons for this change of pace."

6.1.2 Digital Disruption goal

Technological innovation is in fourth place (20.4%) and the launch of new products and services on the 6th after the integration with the new realities (18.4%), but the real news is precisely the voice "digital transformation". "Digital Transformation is an issue more structured and "sophisticated" than the simple "technological innovation" continues Merando. Americans speak in this sense of "digitalization" toward "digitisation".

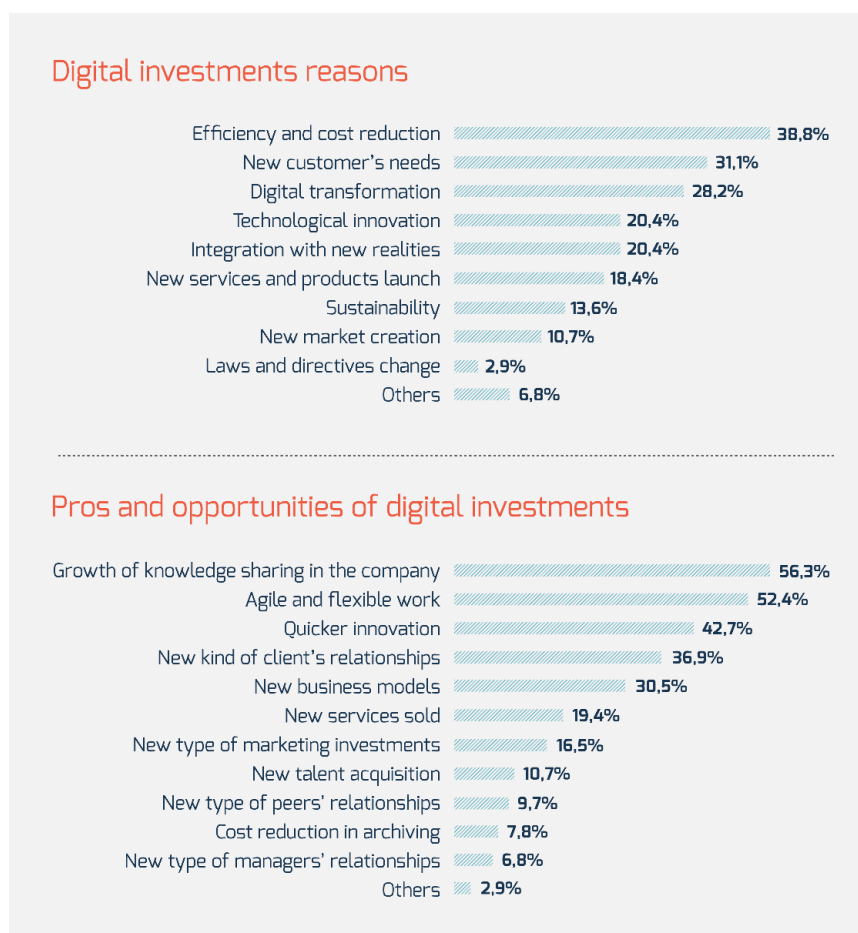


Figure n.17: Reasons behind digital investments⁴⁰

⁴⁰ Adapted from Fiertler, G. (2017). *L'Impresa* - Ormai sono chiari i fattori manageriali di successo delle digital winner, ma la maggior parte delle aziende è ancora frenata da ostacoli culturali e fa fatica a capire quanto gli strumenti digitali favoriscano il cambiamento stesso. *January*. Pag. 72

The first is a broader transformation that sees technology as a driver, but in which significant part comes from the corporate cultural theme and human resources. Technological innovation or "digitisation" and it is, in fact, the first step, and it concerns interventions limited to specific areas or operational services, necessary but not sufficient to achieve the goal of so-called "digital disruption". The research shows that the main resistance to change are always cultural factors: habits and beliefs (41.8%), motivation to change (22.4%), skills (16.4%) and lack of time (9%), while 20% believe that there was no resistance to their project. "Staying anchored to the old way of thinking and the difficulty of changing thought patterns are among the main factors that produce resistance in the implementation of new behaviours of people, and these aspects are most recurrent when people do not understand the reasons and grounds for the change" adds Moira Masper, vice president of Assochange.

6.1.3 Lots of technologies with a lack of culture

In fact, 65% of respondents claimed to have launched a digital transformation process, only 5% of its finalisation and 30% is still in the starting blocks. "There is still much to be done: companies are aware that digital is a great opportunity, but they are still working through what processes seize it. In most cases, in fact, although the process has been started, is still being defined and not implementation," noted **Alessio Vaccarezza**, Head of the Assochange Observatory.

In addition, three-quarters of respondents (76%) admit that they have taken steps to reduce or eliminate the digital divide between generations and only 39% said they had evaluated the behavioral impact of a new platform or digital instrument on people and way they work, while one in two (52%) was prepared to use it. 36.7% admit cultural change produced by digital on organisational processes in the process of change, 21.5% speak of awareness, 13.9% of the variation in the relationship with the customer and 10% talks about the sense of membership and responsibilities thanks to digital support for change, while 22.8% did not record any change.

6.1.4 Internal communication in companies is still the weak point

In fact, they are using standard instruments to accompany the change, while dares little with more sophisticated solutions for sharing and collaboration. "The results are disappointing, it is true, but they are also a great opportunity for Italian companies. Innovative ways of working together, of sharing, gamification, analytics, flexible working are still in its infancy, especially for medium-sized companies, while vast and multinational ones are carrying out the most innovative and cutting-edge programs on the topic of digital change."

It thus appears that in internally communicate the change process, where communication is the second point of weakness after the lack of cultural shift, the most widely used digital tools are those commonly employed in the office: email (93%), video (35, 9%), electronic newsletters (34%) and bulletin board (25%). Social networks are used by only 14%, while they are a bit 'more to the outside but always below 20%. Also, to engage and involve the ongoing change recourse is the more traditional digital tools, such as email, videos and newsletters for its ability to speed up the level of awareness, update on work progress, share and collaborate. While it still makes very limited use of those tools designed precisely to increase the involvement and collaboration, such as dashboards, shared platforms and gamification.

Still, an interesting fact is that among the companies that have used, at least once, the most innovative communication tools such as social networks, sharing tools/dashboard and gamification tools, which are one-third of the participants, 53% identifies as a point the strength of the project of change precisely the involvement of employees, this percentage drops to 38% in companies that have not introduced innovative instruments. Also, 76% of the first has even started a process of digital transformation, a percentage that falls to 25 points in the companies that have adopted the most common means of communication.

6.1.5 Global context

The delays on the processes digitisation is not an Italian side issue but has a global perspective. The research for Sap "Leader 2020" has identified as companies that perform best are also those that invest most in the digital economy, the so-called "Digital Winner". They are only 16% of enterprises involved globally, but it tracks down a red thread that binds them together: they have 38% more likely to have increased in turnover and profit; strategies and recruiting programs are more mature; collaborative working methods are one and the

most efficient way, impacting on productivity; 87% of employees are satisfied, and there is less willingness to change jobs; succession plans are more efficient and give more space to millennials in executive positions to accelerate the digital transformation.

The European considered countries were Germany, France, Spain, Great Britain and Russia, which run at different speeds even in the digitization: Germany leads with 41% of Digital Winner companies and Spain (22%) that exceed the global average (16%), followed by France (15%), Russia (3%) and the UK (1%). Champion companies with a digital leadership, have collaborative and inclusive policies that should support the largest diversity and get the most efficient environment (39%), with employees that are more engaged, satisfied with their jobs and less likely to change. However, still, are just small numbers.

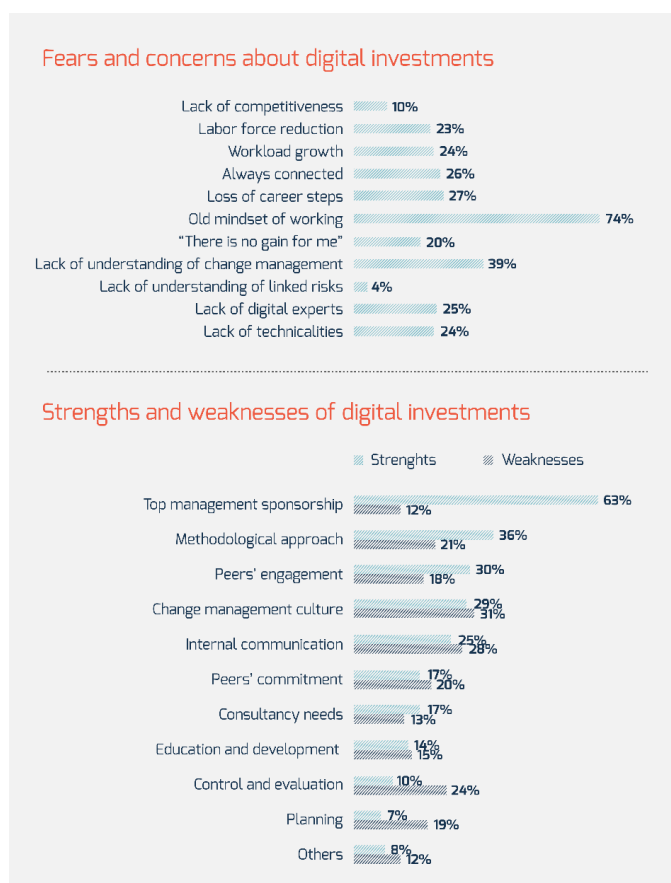


Figure n.18: Digital Investments' points of views⁴¹

⁴¹ Adapted from Fiertler, G. (2017). *L'Impresa* - Ormai sono chiari i fattori manageriali di successo delle digital winner, ma la maggior parte delle aziende è ancora frenata da ostacoli culturali e fa fatica a capire quanto gli strumenti digitali favoriscano il cambiamento stesso. *January*. Pag. 73

6.1.6 Leaders that we need

"The digitisation of the world has led to major changes in human resources and in the workplace and business needs change rapidly to stay ahead" explains **Mike Ettling**, President of SAP SuccessFactors, the People Cloud solution and Talent Management Sap.

"Our study shows that many executives, in Europe as elsewhere, are not yet ready to lead successful companies in the digital age. There is a great opportunity for leaders to embrace a digital mindset and connected. As leaders, we need to create an environment where people take advantage of taking quick decisions guided by the data, which is to reduce the complexity and red tape and where they foster diversity and inclusion. Because digital is not only to adopt a technology but to create a culture of innovation, where exponential results are not only possible but required."

6.2 Qualitative data - Microsoft Managers' Interviews

The qualitative parts had a strong impact on my work and analysis. I chose to interview the three managers below because of their job positions and inclination to the topic of Creativity. Having the opportunity of talking directly with them, it helped me to realize that creative tools were used to make the investment decision, and in general, those tools were useful to get the operation flows done.

Managers gave me the opportunity to interview them for half an hour because of business needs. The face-to-face interview had a both side presentation: I explained in detail my academic path and my strong passion for the creativity management topic as well as the growth mindset needed to face this interesting field.

All the managers got extremely interested in my work, and they explicitly asked me to share my work at the end of this academic step. The study might be sponsored by Microsoft Italia if it meets all the communication and academic requirements.

The interviews were also a way to brainstorm about the innovation field in which Microsoft works and the social and business impact that the Microsoft House investment has.

6.2.1 Senior Business Planning & Operations Manager

Interview with Maria Pelucchi, **Senior Business Planning & Operations Manager** at Microsoft Italy:

Q: Maria I would like to thank you in advance for having given to me the possibility of this interview. Now I will get the questions: investments like the Microsoft House bring with them a huge degree of creativity and risk tolerance; would you like to explain which kind of processes were at the beginning of this idea?

A: “First, I would like to say that is a pleasure to go deeper in this topic of creativity management regarding the specific case of Microsoft House in Italy. Going back to the question, the breakthrough moment came out when we decided to face the challenge of a new way of working.

The Change Management was the main pillar of the meeting within the Leadership Team, and we got the idea of investing in a new and disruptive way of working. The main question was: how can we spread up this idea of real smart working to our employees? Through architecture. The architecture is not only the “how” we decided to communicate our change management, but is also part of the “why” we did it.

We did it because we believe in a new era of digital transformation, and we firmly want to communicate this within examples and not only statements. In the previous building, for instance, we had the possibility of parking the employees’ car without space problems. We used to have more than one hundred parking spots. In the Microsoft House, we have less than seventy parking spots for almost nine hundred employees. Planning the day became probably the most important part of our job. We do not want our staff to get the office just because. We want them here because they should spread up a new idea with the team, not just because they have to run their work phones to call their partners, they can do those operations anywhere, even at home.

However, going back to the processes, while we were exploring the idea at the board level, we engaged an external consultancy firm who helped us to drive the different creative moments of formulating and planning. Brainstorming sessions became part of our journeys, and we were most of the time divided into small groups to face the challenge in small pieces. I remember that one of the funny moments was to choose the colour of the new Microsoft House brand, and we converged to the blue. The colour of leadership, something that could be kept in the mind of our employees and partners.”



Figure n.19: Microsoft House logo

Q: Thank you, Maria, for your detailed explanation, it actually seems you followed specific steps of creative management tools, like the brainstorming one. Do you remember specific moments of those meetings and most of all, do you remember clear guidelines in the sessions?

A: “Open mind and growth mindset are the directives in the Microsoft culture since Satya Nadella got the World-Wide CEO position. Besides those two main pillars, I remember we were used to be led by experts in the brainstorming sessions, at least in the first stages. The entire process took almost one year of planning. We started to manage the steps directly just on the second stages.

I led the cross-team work group to create the concept of “Smart Work, Smart Life”, something that can balance personal needs with the professional ones. To engage this goal, we managed two Microsoft communities: managers and “angels”. Well, the managers are the known Front Line Managers of our businesses, while the angels were the real change agents. The angels were a spontaneous team made by volunteers inside the employee’s community. Together they had to plan an inclusive implementation of steps and processes. We asked them to take more responsibility and share these new needs to the whole Microsoft community. Well, we can say they did it in an excellent way.”

Q: Last question Maria: you mentioned the growth mindset of Carol Dweck as a Microsoft main pillar so, would you like to tell me in which areas you see improvements? If there are any, of course.

A: “In this learning life marathon, we always know we can improve ourselves and the environment around us, and this is also one of my personal and professional goals. We shared survey via our cloud platform to the managers to ask them new input for improving the environment and this huge step we got. We are still receiving input back and this is a great signal for the Microsoft board: our employees are engaged in the change management culture.

Personally talking and as a Microsoft manager, I used to have tolerance for mistakes and other people. Tolerance because at the bottom of this change there is our Italian work culture, that from time to time is not well aligned to the smart working way of doing. Sometimes a coffee or a shared meeting composed of three people is the reason of getting the office in the city centre of Milan, and this is not the change we want. But is just an example.

Discipline and culture are, and will always be, the main improvement areas for us, that daily lead us to say we are marginally improving. Thank you, Donato, for this nice and exciting interview and have a nice day.”

6.2.2 Communication Lead Manager

Interview with Chiara Mizzi, **Communication Lead** at Microsoft Italy:

Q: Hello Chiara, thank you for your contribution in this data research for my master thesis. Let's move on to the questions: what were the main reasons behind the Microsoft House and what were the biggest challenges?

A: “Good morning Donato, thank you for this opportunity to share out our project and work.

There are three fundamental points behind the Microsoft House investment: we want to be closer to customers; we want to convey the message of open innovation; brand investment through new channels.

Time management was surely the most challenging point, but the same technology that we spread in the world was the main tool for the shortening of time. The same project, if thought five years ago, it would have put a lot more time to be realised. We spent about a year working to define the entire project and carry it out.

We were supported by the international team of Microsoft Real Estate, and with the collaboration of a local v-team (composed by different teams – Communication, Business & Planning, HR and IT + Finance) we provided key updates and involved in the key decision the Italian Leadership Team.”

Q: Which were the messages that you have communicated to the entire community of stakeholders as a result of this innovation, how did you reach those messages and what is the business goal?

A: “Microsoft House is the first office not considerable as an office and the first example of Office 4.0. In fact, the 6 floors of the new building designed by Herzog & De Meuron are open to the public: ground floor with Showroom and Digital Class, first floor with the Microsoft Technology Center and part of the fifth floor with The Loft: a proportion between plans for employees and spaces dedicated to unique and unusual audience that reflects the idea of being part of the environment that surrounds us. The aim: to develop ideas and business.

To reach out the messages we wanted to share, we spread surveys through our employees, with a Top Down and Bottom Up point view. The goal of this investment has been translated in community reach: over 10,000 professionals from client companies and partners in our Microsoft Technology Center; 4,000 students in the Digital Class and 200,000 visitors and consumers in all the significant Microsoft Showroom events.”

Q: Last question and then let's go back to the business: in a Growth Mindset point of view, what we should improve from your point of view?

A: “It is a day by day learning process. We did not have any reference point for this project, and suddenly we became the benchmark of all the others. We are now receiving many requests from different headquarters to visit our Microsoft House to realise how we did, and how the employees are delivering their job. The entire society has improved with us, and we will do our best to translate the feedback we receive every day. Thank you, again Donato and have a nice day.”

6.2.3 Business Digital Transformation Lead Manager

Interview with Ivan Mazzoleni, **Business Digital Transformation Lead** at Microsoft Italy. Note: this interview lasted less than the other two: I had just 15 minutes with Ivan because of business needs.

Q: Good afternoon Ivan, it is a pleasure to me having this interview with you. I would like to make you just two question: which were the creative thoughts behind this huge investment for the Microsoft House?

A: “Thank you for this interesting study about creativity Donato. It is interesting to share the creative common senses with the senior managers. Most of us still have a false view on this topic. Microsoft has taken a path of digital transformation that has the purpose of enhancing

our productivity, that concretely means investing in a new way of working. We had different brainstorming moments with all the stakeholders involved, starting from the Leadership Team, passing from the employees we called “Angels”, ending with all the external advisors. We wanted to generate the greatest impact on our business goals and employee’s life, so we took the path of smart working and started to creatively think the “how” behind each new step of the project.”

Q: Which impacts do you expect from this project at the business level and did you forecast more investments in Italy?

A: “Overall we calculated a business growth of +5% YoY. Microsoft is involved since years in Italy for the company digitalization process, both private and public sector. There are different projects where we are still involved in, starting from the startup environment. We made a program called “growITup”, which has the purpose of stimulating the startup business environment generating more than 10 thousand new opportunities in 3 years, thanks to 10-million-euro investment, and the goal of attracting 1 billion investment before 2020.” Thank you, again, Ivan and have a nice day.

7. Microsoft Italia: business case

Microsoft Italia exists since June 1984, with three main locations (Rome, Milan and Turin). The company has approximately 860 employees and works with 25,000 allied companies. Microsoft World Wide has a unique “tone” of voice, and this does not allow subsidiary businesses to have a significant level of independence. Customised campaigns are directly managed by Microsoft Corporation in the U.S., leading to a high degree of control and quality of deliverables.

In the following parts, there is the answer to the hypothesis structured above, and there is a detailed explanation on how Microsoft Italia had clarified my statement:

- The Creativity Management tools, in the innovation industry, can generate measurable and concrete outputs if applied in a managed and structured way.

7.1 Defining the opportunity and alternatives

In the rural area of Milan, Microsoft has always had a chance to manage its space without a real need to schedule events and movements. The building had a large parking area, several lounges, a restaurant, more than five hundred seats and a dedicated venue for the digital innovation.

All this was not strictly connected with the concept of smart working, or rather, the building did not require the application of smart working given the enormous spaces available. The employees, in a flexible working model, were still attending the office for most of the time, even to perform simple tasks. To carry out a real change management there was the opportunity of investing in a new area of Milan, the business area in Porta Volta, and more than this, creating a specific concept of communication to spread the new Microsoft values of collaboration and partnership.



Figure n.20: Former Microsoft Italia building in Peschiera Borromeo (MI)

7.1.1 Identifying the alternatives

The quicker and easier alternative for Microsoft would undoubtedly be to divest the rent of some parts of the former building in Peschiera Borromeo (Mi), bringing the entire community of employees to adapt to small spaces. The alternative in question would have saved millions of reusable euro for the modernization of spaces. Same quarter and same comfort zone, as well as same communication to the Microsoft community of partners and clients.

7.2 The chosen decision: the Microsoft House in Porta Volta

Microsoft House is designed to be an open space for collaboration among people, a comparison site for businesses and citizens on the digital opportunities, a reference point for young people who want to bring innovation in Italy and a laboratory in which to experiment for all the future for economic and social growth of Italy.



Figure n.21: Microsoft House in Porta Volta, Milano

Microsoft House reflects Microsoft growth mindset culture evolving, continuous learning, continuous growth to achieve the mission of enabling every person and every organisation in the world to get more and more. The key elements that are found expressed in the Microsoft House are openness, flexibility, collaboration, and innovation.

Openness: the 832 windows that open the Microsoft House to the city of Milan reflect the company openness to the ideas of others to create synergies to guide employees towards the realisation of Microsoft's mission;

Flexibility: the Microsoft House is thought to be in constant osmotic exchange with the surrounding world: flexibility is a key element. Flexibility of employees, through the smart working and non-fixed locations, flexible interior spaces that are public or private depending on the needs and adapt to accommodate the students to large organisations;

Collaboration: the project follows the path that Microsoft has undertaken Italy for ten years under a "New World of Work", an approach to professional dynamics that provides greater flexibility of its staff given the smart working and use functional spaces and innovative

technologies to exploit both productivity and collaboration. There is no longer the concept of a closed office where things happen and then once made employers carry out. Today, with Microsoft House projects, products, services collaboration is all about;



Figure n.22: Microsoft Hub – Ground Floor

Innovation: Microsoft House is the new address for innovation in Italy: in addition to providing the country a new space where you can see first-hand the benefits of Microsoft technology today, the new headquarters of Microsoft Italy is an example of how today it is possible to create a "smart" building able to monitor and facilitate the experience of employees and guests: from virtual reception in advanced systems for video conferencing, from home automation to IoT sensors up to new collaborative tools that will make the Microsoft House a concrete example for other organizations in our country.



Figure n.23: Creative gardens for employees

7.2.1 Urban context

The changing of the Microsoft office is not a simple removal and transfer of headquarters: the move from the suburbs to the city center is the symbolic representation of the centrality that Microsoft wants to have at the major stakeholders of innovation in Italy (customers, partners, consumers, institutions, students, NGO) to promote the path of Digital Transformation and thus achieve the untapped potential of Italy.



Figure n.24: Microsoft House by night in the City centre of Milan Business Spot

Microsoft House is in the Italian first public building designed by the prestigious firm Herzog & De Meuron⁴², inside the urban plan developed by the “Fondazione Giangiacomo Feltrinelli”⁴³. The project as a whole is an important intervention to enhance the area, Porta Volta, in favor of the city and its inhabitants, and is located along the route of the ancient Spanish walls, characterized by the simplicity and the grand staircase, typical of Milanese architecture, and for inspiration to the long stretch of the typical farmhouses and linear in the Lombardy countryside. Microsoft House in Porta Volta fits the historical boundaries of the area, with the right balance between transparency and definition of interior spaces. All the decisions were made after lengthy brainstorming sessions between the consultancy firm, the design firm and the leadership team.

⁴² Herzog & de Meuron, is an architectural firm founded in Basel in 1978 by the architects Jacques Herzog and Pierre de Meuron, winners of the Pritzker Prize in 2001.

⁴³ The “Fondazione Giangiacomo Feltrinelli” is a leading Italian publishing houses. The publishing house was born at the end of 1954 in Milan. The founder is Giangiacomo Feltrinelli, who already in 1949 had created the “Library G. Feltrinelli” for the study of contemporary history and social movements, first in college and later transformed into the “Fondazione Giangiacomo Feltrinelli.”

Transparency is one of the key elements of the new Microsoft headquarters, not only in the implementation of the external architectural structure but also in the inner realisations and the right balance between the two.



Figure n.25: Microsoft Education Hub – room dedicated to classes of any education level

The building is spread over six floors. The ground and first floors, open to the city, are devoted to the Customer Area, open to the public with areas dedicated to the meeting with clients, consumers and schools; subsequent plans, the second to fifth, are the operational plans, reserved to employees and consultants of the company, where 421 seats are not assigned in open space are differentiated in form and aesthetics, depending on the function, more collaborative areas and more restricted areas, which alternate to create a workspace without monotony, which stimulates creativity.



Figure n.26: Microsoft House Nature Hub for Employees' breaks

7.3 Microsoft House: future perspective

The Microsoft House investment does not have to be considered as a final step for the Microsoft community. It will surely be a passing step to the next era of digital transformation, and for this specific reason, I decided to organise a Brainstorming session with five colleagues of mine at Microsoft House, using the Creative Business Tools mentioned in the Literature Review.

The basic points for the brainstorming session are dictated by the divergent and convergent “rules”:

- Defer Judgement;
- Go for Quantity;
- Make Connections;
- Seek Novelty.

The Six Thinking Hats of De Bono (1992) has been used to assess the meeting, performing the following questions:

- 1) The world we live in is daily changing, what will be the next future of business districts, and how we imagine the office of the future?
- 2) In this open environment buildings, will be the cooperation or the competition the strongest fuel to achieve more?
- 3) Try to identify one important aspect for a focus on creativity management. Something that has to deal with the Millennial⁴⁴ Managers of the future.

⁴⁴ Human generation born between 1980 and 1999.

The following colleagues were involved in the process:

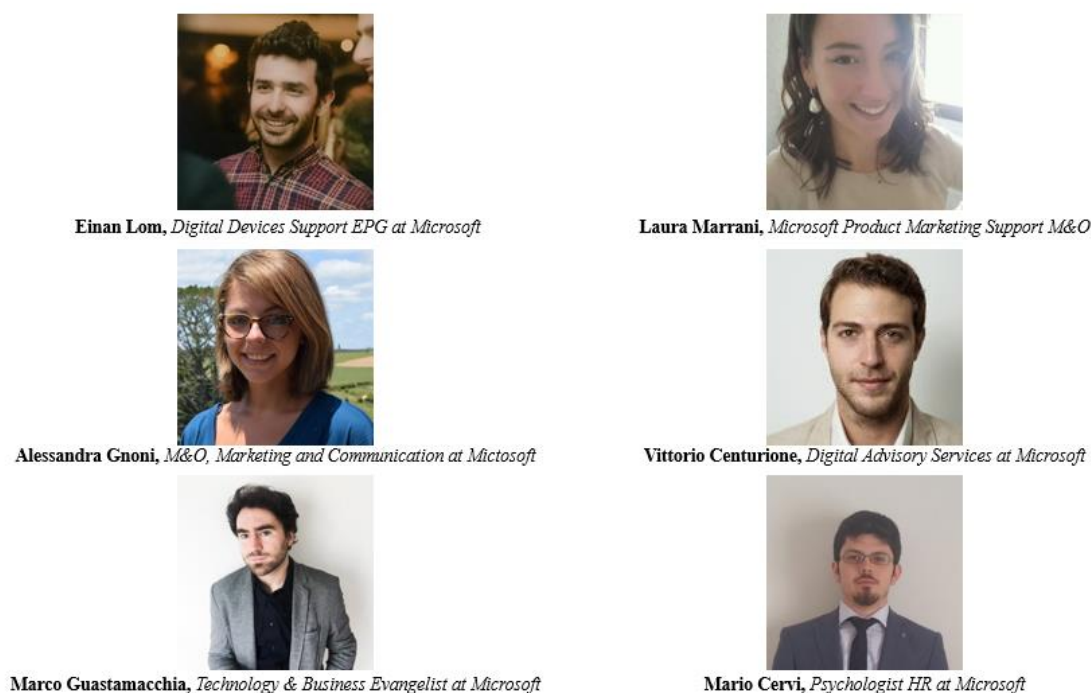


Figure n.27: Microsoft colleagues involved in the Creative Thinking process

The brainstorming session lasted for an hour because of our different business needs. It has been the first time I led a brainstorming session using the creative tool of Edward De Bono. It was exciting.

Before starting, I explained them the aim of the session, the main topic of the Master Thesis and the rules of the Six Thinking Hats. A recap paper for the tool has been delivered as visible in the figure n.28 below.

I used the blue hat for most of the time, this because I knew all the employees involved in the session, and I genuinely forced them to achieve more throughout the meeting using hats that were closer to their personal behaviours. The answers we got were interesting, but most of all I could catch their passion and curiosity about the topic and the tool itself. I left them choosing the blue hat when needed, and I supported the session with my knowledge, without forcing any of the following conclusions.

The following figure n.28 is the session's proof of execution:



Figure n.28: Six Thinking Hats session

Answers got from the session:

Question 1: The world we live in is daily changing, what will be the next future of business districts, and how we imagine the office of the future?

The manufacturing reshoring will probably succeed where will combine with strong technological investments (advanced robots, Internet of Things (IoT), and 3D printers, artificial intelligence) that will allow maintaining control over the labor cost. Next future will be represented by more robots and fewer workers and employees. However, this will not have major effects on employment.

Paradoxically the restoring, not only manufacturing talking, but also in services (think for example the replacement of call centres with automated response), will create new jobs. On the other hand, will lead to a revival of domestic production and a further reduction of international exchanges. The scenarios are not as easy to imagine: we are moving toward a more local world but with more idea sharing and investment in technology with mini-local systems, "neighbourhood factories", a high concentration of technology. In addition to what just discussed, the relocation of production will also allow governments to repatriate taxes.

The raw materials supply chain is the only thing we still see as the big problem in a localised market. There is no doubt that we are talking about a reduction in global exchanges, not a zero trade, despite the emergence of the sharing economy and circular economy which tend to reduce consumption. Moreover, there is equally no doubt that the rich countries of raw materials and agricultural produce will always remain rich. We can put all the barriers we want, but there are things that we will still buy: food, water, energy, and raw materials.

About the office of the future: the traditional structure "9 to 5 in an" office is giving way to a virtual working environment: "at my desk by 8:59" is becoming "on my Blackberry 24 hours on 24, 7 days out of 7", and the coffee shop Starbucks has become "my home office". Companies can take advantage of the natural evolution of functions by finding a balance between virtual and physical space; this could increase productivity and lower costs without sacrificing the enterprise culture or individual motivation. Information technology has transformed the role of the buildings but changed first of all the places where we can work. Innovative business leaders have recently acknowledged that technology enables their employees to be mobile, to collaborate with colleagues at a distance and at different times, and to conclude the work in various ways, as we do in Microsoft.

These new flexible jobs have increased worker productivity, creating significant advantages for businesses. Today, companies are increasingly focusing more on the difficult issue of how to help people to focus and to work better. The traditional thinking is to offer a closed office, although the open and flexible environments allow considerable advantages, including creativity, knowledge, teamwork and coordination. We know that the public spaces can inhibit the work, but we also know that they can enhance interaction and knowledge sharing. So what is the solution? Hybrid office, a mix of open space and work spaces closed, available to users when they need it. The mobility that we have described allows people to choose how and where it is better to work. A flexible work environment can balance the needs arising from individual tasks with the needs of interaction.

The advent of wireless technology and the dynamic use of space have nearly eliminated the problem of choosing between closed offices and open space when designing a workplace. Hybrid workspaces offer transparent and closed environments, which can be useful in different ways. In a hybrid work environment, employees can work individually or in a quiet space to collaborate with their colleagues in an open or in areas designed for team

collaboration. Moreover, the place of work can exploit the hybrid technology combining the collaboration face to face with the virtual - both inside the office or remotely.

A found example besides Microsoft is the McCarthy Ranch Cisco (CSCO) campus in Milpitas, California, that chose the hybrid office. Hundreds of mobile workers who use the campus have access to a menu of eight different types of workspaces unassigned: workstations, touchdown, private rooms, booths, open space, shared rooms, lounge and dens. Spaces support various types of virtual collaboration using technology, methods of audio conferencing and video.

What's on the horizon for the workplace? It is fair to expect these changes:

- Modify the way continues to collaborate, workers, thanks to new technologies;
- New habits and customs regulating the virtual work;
- Increased opportunities to have workspaces also shared with other companies, such as incubators and managers for temporary rent spaces;
- New governments' request to create spaces that support new ways of working.

All these changes represent challenges for the way in which workplaces are designed and built by developers, architects, landlords and suppliers of all kinds. The hypothesis that the virtual communication and remote work environments totally replace the need to gather people physically is, however, misleading. The richness of face-to-face communication allows quick and personalised interaction, which speeds up the decision-making process and the flow of information in ways that have not been fully achieved by purely virtual work environments. At the same time, the traditional working environments are becoming increasingly unproductive and will soon be out of fashion among the leaders, if they are not already.

Question 2: In this open environment buildings, will be the cooperation or the competition the strongest fuel to achieve more?

Those who support the culture of competition corroborate their argument mainly on three grounds:

- To achieve excellent results, we need to have incentives that lead to continuously outdo each operator (“A sample say they need to improve, difficult challenges, sparring partner able and these, in the company, are their colleagues. If they compete, they improve”);
- The cooperative attitude of connivance automatically generates systems, roofing, the communion of interests that do not always serve the interests of the company. Excessive brings together the resources to justify with each other (“Today I cover you, and I am sure that tomorrow you will cover me. The result is a system that they say fatally tend to degrade and to multiply the inefficiencies”);
- There are actual situations that require contrast between colleagues, as occurs between the control functions and operational expenses (“It is necessary that those who control has a certain distrust of who is being checked. Otherwise the power will be weak and largely ineffective”).

Who supports the culture of cohesion supports its case with these arguments:

- Cohesion allows everyone to give their best because it makes him feel a member of a group and gives security (“Everyone knows who is willing to sacrifice for others as others will sacrifice themselves for him”);
- Confidence in colleagues leads to exposing themselves, to have the courage and then to provide opportunities for all (“The others are not waiting for me to condemn me wrong, they will understand, then I can go forward”);
- Transparency helps to improve (“Can I be honest and communicate my mistakes: we can act on the causes, and everyone will benefit”).

We would not say that either one is wrong, rather it depends on the situation. The first is paradoxically effective in less competitive market environments, in stable situations, with a minimum of external threats, in short, companies in which the need to manage priority. The internal competition, in fact, is aimed at consolidating the effective management (and

especially the control), but also subtracts a significant amount of energy, feeds distrust and suspicions and is an obstacle to operations transparency. It is, therefore, functional in a relatively quiet market situation, in which the key point is represented by optimal management centred on the division of tasks, the certainty of the activities and the quantitative and qualitative objectives. When is it better leadership based on trust and transparency? When you need to join the organisation, provide security and guide mutual help. When that need to involve the smallest business asset to have every single in power in the direction of ambitious results. Basically, in contexts of greater uncertainty, risk, the perceived danger or when we are faced with significant and arduous challenges. Without the maximum cohesion and the tension of all towards the result, it fails. In all these cases, every lost power to define areas of responsibility, to determine who is more or less good, to tear the support of this or that employee, is subtracted from the firm's survival. To return to the original question, so we identified a better question to start: in what context is now living my enterprise?

Question 3: Try to identify one important aspect for a focus on creativity management. Something that has to deal with the Millennial Managers of the future.

We identified a list of important focus points regarding the “resilience” power in creativity management. Critical resilience’s points for future managers that have to manage substantial change like the Microsoft House:

1. Orientation to action to stem the sense of loss and limit the negative emotions, the resilient leader focuses on the fight and reacts quickly to avoid negative emotions take over;
2. Orientation to face big deal into manageable sub-problems plus designing solutions so that what seemed unrealistic eventually becomes an achievable goal;
3. Focus on resources and values to manage uncertainty to revive the team; the resilient leader focuses on resources and their values;
4. Optimism and hope to achieve the expected results;
5. We need to overcome the perception of the role and get to the cause. It is this attitude of the leaders in developing the team the "sense of community" that promotes the overcoming of critical situations;

6. Flexibility is a fundamental component of resilience because we can break the mould, by visions and rigid readings of the role that prevent finding alternatives;
7. The transcendence and spirituality belief leads to higher return and a higher purpose than the critical contingency.

7.4 Personal reflections and conclusions about the case and the sessions' results

Following interviews, brainstorming sessions, and collected data, I decided to summarise a personal reflection on the subject.

It is clear that the rigidity and redundancy of hierarchical structures are now the weakness of companies: slowing down decision-making and execution, blocking people who lose the overall vision in limited roles. It also turns out to be a cost: the dispersion of the contributions of those who are put into working conditions without being able to express their skills and creativity.

Companies that continue to benefit from control are deluded by the guarantee of operation and organisation; these companies continue to be focused on a command-control method, intensifying work, but not quality.

Technology and investment in digital show how the first thing to change is the relationship between employees, in particular between boss and co-worker. A more flat hierarchy and a more open orientation are the future of resource management. Power remains an additive, and the old organisational structure is an example. As shown by the survey, 74% of participants are unfavourable to digital investments because they are still tied to the old working method, a hierarchical method. In support of how this old method is also a matter of mindset, there is a 39% of people who are thought to be illiterate about it. It seems they do now want to improve and learn more about the new trends.

The Microsoft House is the right example for who wants to change. Even for who said that the digital investments are mainly due to cost efficiency (38,8% of the participants) and customer needs (31,1% of the participants), the business case above shows how the creative tools have enabled the company to achieve a new level of experience either for partners, customers and employees. The Manager's interviews gave me the opportunity of

understanding that even the Leadership Team used to have a consultancy group who led them to perform creative tools such as brainstorming sessions.

As a Microsoft employee, I am confident to say that the technology inside the company helps me to share the knowledge within my team and senior managers, as well confirmed by the 56,3% survey's participants. The same technology allows me and my colleagues to be more agile and flexible in every task we perform as approved by the 52,4% survey's respondents.

I firmly believe that every organisation needs to have a vision, define processes, and give responsibilities, as well as the tools necessary to reach goals with care and accuracy. I also believe that it is vitally necessary to ensure freedom of action for collaborators to allow for better focus on strategies. Governing an organisation by leveraging on public accountability is a wider and higher liability assumption for those who are responsible. Widespread responsibility is the basis of individual and organisational creativity, in a context where they are all more free and useful.

This is the case of the Microsoft Italia above as described by the data and the managers' interviews. Creativity Management is a valuable tool for the new frontier of business needs and not just a myth that born and dies with us. We are all creative, as individual and as organisation. With the right mindset we can learn and grow to help the entire society to do more and better.

8. Creativity Management and Leadership as a business course

Back in 2010, I realised that one of the things that make me all the time glad to be “human” is having a creative mindset. It seems strange to say, but it is the main reason that is giving me a real incentive to discuss this topic here. As you probably realised the main word in this work is creativity, “something” that born with us, and along our path, we are used to forget. The curiosity that I always brought in my backpack led me to attend a course at the Copenhagen Business School (CBS) during the summer of 2015, immediately after the work experience in Robert Bosch GmbH, with the aim of looking forward to useful tools in our private and business life. The course is named as “Creative Problem-Solving in Business” hold by the Professor William Holmes, currently Dean of the Management Faculty in the Royal Roads University, Victoria, Canada.

My interest in this general topic, born in Denmark, pushed me to attend another course, mainly related to the theme, in my Master of Science experience in Lisbon; the course is named as “New Product Development”, held by the Professor Marco Leite, currently Professor at Instituto Superior Tecnico and ISCTE Business School, Lisbon, Portugal.

With the attendance at these two courses mentioned above, I got passionate about the topic. I acquired new fundamental knowledge and tools throughout the programs and my personal studies. It is thanks to this passion that I feel the opportunity, necessity, and desire to share and dedicate my education, management skills, and experience to contribute to the field of higher learning.

Moreover, this might be an opportunity to improve my personal, and the respective audience knowledge. For the reasons above, an added purpose of this Master Thesis is to create the basis for a new course in Creativity Management and Leadership inside the schedule proposal of ISCTE Business School, allowing the school to increase the knowledge offer to current and potential students, and at the same time, develop and share new insights in the field of creativity and innovation management.

8.1. Target students and Learning objectives

This course has been thought for Master of Science (MSc) students, noting that, all the literature review analysed in this Master Thesis is the edge of the course; most of the knowledge explained above have been considered as fulfilled in other courses of the business school, that means potential students of the Creativity Management and Leadership course, already got Innovation Management and Strategy classes during their bachelor degree. Those courses are fundamental to face real business problems,

Master students have been targeted because of their need to get a Creative Problem Solving way of thinking, considering the job market as their next life step. Creative Problem Solving has been considered the most valuable skill in the job market by the Massachusetts Institute of Technology (MIT), the Stanford University, and Harvard Business School since 2015⁴⁵.

8.1.1. Learning objectives

At the end of the potential course, or even multiple and concentrated classes, the student should be able to:

- Identify, isolate and define the parameters of a real world business problem as presented by the case of Microsoft Italia;
- Analyse the industry in which the company works and understanding the future of innovation in the field;
- Exhibit broad comprehension of concepts, theories, models and frameworks that underpin the development of creativity as a discipline and the creative problem-solving process;
- Apply the creative problem-solving process to a real-world business problem;
- Describe the relationship between creativity, innovation and commercialization;
- Construct and deliver a well-developed and persuasive presentation promoting an innovative solution to a real-world business problem or challenge;
- Enhance team working skills and self-confidence in creativity.

The goal is that those who work on the case put themselves in the role of an international creative innovator, planning a new way of operating and running the business for the chosen company.

⁴⁵ “Job Skills Report” Bloomberg, accessed June 07, 2017 <https://www.bloomberg.com/graphics/2015-job-skills-report/>

8.2. Teaching methods and grading

Considering the aim explained in the previous parts (a new course in Creativity Management inside the schedule proposal of ISCTE Business School), I decided to provide a detailed class schedule that includes literature review, lectures, seminars, case study discussions and different presentations. Students are expected to be proactive participants in the learning experience as opposed to passive receptacles for information. Additionally, students will develop hands-on skills in case analysis, group dynamics and formal business presentations. Written and oral skills will be stressed throughout the entire course.

8.2.1. Grading

- 60% Team Assignments;
- 20% Final project presentation;
- 10% Team presentation;
- 10% Peer Evaluation.

This ratio has been chosen in order to highlight the importance of the team against the individual focus.

8.3. Class materials and locations

The following books will be used as pillar documents of the course:

- Dweck, C.S. 2006, Mindset: The New Psychology of Success, Ballantyne Books, New York, NY;
- J. Puccio, G., Mance Marie, M. S., Switalsky, L. B., & D. Reali, P. (2012), Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY;
- Harvard Business School Press. (2003). Managing Creativity and Innovation. Boston, Massachusetts;
- Additional Material will be made available as needed.

To think out of the box, and to start learning creativity management, I decided to use new class formats and new materials. White and clear slides, as well as white documents, will not be utilised in classes. Papers will be shared in a new format as in the following example:



Figure n.29: Creative academic papers on a black background

Dark backgrounds for colour contrasts will be part of new concepts, allowing all the students to choose whatever they feel better and easier to understand and share with others. Classes in the garden and the football pitch, or wherever they propose, will also be part of the schedule. Will be possible to democratically choose a place to have a theory class about creativity management.

I would like to see students playing with what surrounds them and feel free to communicate through the things they find in the environment. No constraints are allowed in a creativity management classroom. Students must interact within the groups and share their best.



Figure n.30: Students in a free spot of Lisbon, sharing their knowledge

8.4. Course expenses and Academic Papers

Besides the Professor costs and the purchase of Academic Papers, no other expenses are forecasted for this course. Any expense made by students for their team assignment will not be reimbursed.

8.4.1. List of Academic Papers

The following list of academic documents represent the due purchase for the course:

- Teresa M. Amabile, T.M., 2008, Creativity under the Gun at Litmus Corporation, Harvard Business School, Case # 9-808-075;
- Petersen, S., Espinoza, F. and Wathieu, L., 2012, Tchibo Ideas: Leveraging the Creativity of Customers, ESMT – European School of Management and Technology;
- Chua, R.Y.J. and Eccles, R.G., 2010, Managing Creativity at Shanghai Tang, Harvard Business School, Case # 9-410-018.

8.5. Intellectual Property Rights

The student teams will be able to generate new commercial and strategic ideas, that means they will have the right of proposing their ideas by their own to the target company or whoever. The rights belong to them and no one else. Students might ask the faculty to sponsor the idea; the negotiation step is not part of this document but regards the business school's administrative offices.

8.6. Guidelines for delivering a reliable Business Idea

While special cases will be considered, students will be strongly encouraged to choose a project satisfying all of the following constraints:

1. There should be a demonstrable market worth. The idea, or business solution, needs not be a variant of an existing one, but the market need have to be addressed evidently. The social or business impact should at least be an attractive opportunity for an established firm, or other stakeholders, with related links;
2. Students should be confident of presenting the idea using the most useful business tools and models they want. For example, using the Creative Problem Solving as an instrument for getting the idea and then the Canvas Business Model to structure it up;

3. The idea/solution should require no basic technological breakthroughs. Students do not have time to deal with significant technological uncertainties;

8.6.1. “Do not forget”

At the beginning of the course I will make clear that, in case of doubts or questions, students can count on my support for any request; students do not have to hesitate to contact me via email: donato.boccardi@xxxx.pt.

I will translate my person in the class as a mentor, giving examples of business cases, real life context, like the Microsoft House one, and making sure that all students feel involved in the creative processes. Each contribution is fundamental to achieve more.

8.7. Class schedule and opening slides

Some credits and the right number of hours must be a topic of negotiating within the Dean of the Master course. The following proposal is composed of ten classes and each class, less than the last two, has a cover slide:

1. First class: **Introduction - Team Formation**

Mindset: Review and Reflection

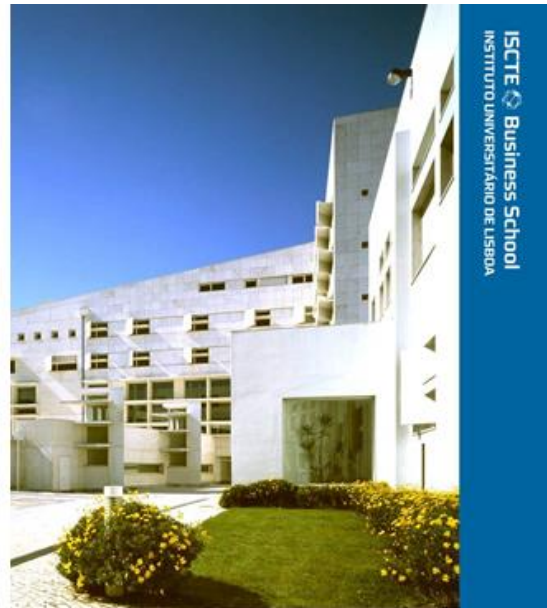
Dweck, C.S. 2006, Mindset: The New Psychology of Success, Ballantyne Books, New York, NY, Chapters 1, 2, 3





Donato Boccardi

**Creativity Management
and Leadership**



Who am I? Who are you?

Please provide a single A4 document, *through email*, with the following information:

- Picture
- Name and Nickname
- Home Country and Former School
- Spoken Languages
- Definition of Creativity
- An interesting and curious fact about yourself

Donato's rules for getting amazing grades

- Go to Classes!
- Pro Active engage yourself (cleverly!)
- Challenge yourself and your colleagues (nicely!)
- Read the papers (do not memorize it!)
- Study (but not too much!)
- Enjoy Lisbon!
- Deliver assignments and final papers!
- Eat Portuguese food (in moderation, of course!)

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Classes Overview

Date	Lesson	Readings	Cases
First Class	Introduction – Team Formation	Mindset: The New Psychology of Success, Chapter 1, 2, 3	-
Second Class	Creativity – Assignment of Business Projects	Creativity Rising, Chapter 1, 2 Managing Creativity and Innovation, Chapter 1, 3, 6	Creativity under the Gun at Urmus Corporation, Harvard Business School
Third Class	Problem Definition	Creativity Rising, Chapter 3, 4 Managing Creativity and Innovation, Chapter 4, 5	-
Fourth Class	Creative Thinking	Creativity Rising, Chapter 5, 6, 7 Managing Creativity and Innovation, Chapter 7	-
Fifth Class	Methodologies and tools in Creative Problem Solving	Creativity Rising, Chapter 8, 9	-
Sixth Class	Creative Problem Solving in Action / Microsoft Italia case	-	Tchibo Ideas, Leveraging the Creativity of Customers, European School of Management and Technology
Seventh Class	Creativity and Leadership	Mindset: The New Psychology of Success, Chapter 5 Managing Creativity and Innovation, Chapter 8	Managing Creativity at Shanghai Tang, Harvard Business School
Eighth Class	Creative Problem Solving: The Thinking Skills Model	Creativity Rising, Chapter 10, 11	-
Ninth Class	Group Presentation	-	-
Tenth Class	Group Presentation	-	-

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Learning Objectives and Goals

- Identify, isolate and define the parameters of a real world business problem as presented;
- Analyse the industry in which the company works and understanding the future of innovation in the field;
- Exhibit broad comprehension of concepts, theories, models and frameworks that underpin the development of creativity as a discipline and the creative problem-solving process;
- Apply the creative problem-solving process to a real-world business problem;
- Describe the relationship between creativity, innovation, commercialization and leadership;
- Construct and deliver a well-developed and persuasive presentation promoting an innovative solution to a real-world business problem or challenge;
- Enhance team working skills and self confidence in creativity.

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2. Second Class: **Creativity - Assignment of Business Projects**

Puccio, G.J., 2012, Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY. Chapters 1, 2

Harvard Business School Press. (2003). Managing Creativity and Innovation. Boston, Massachusetts. Chapters 1, 3 and 6

Case Study: Teresa M. Amabile, T.M., 2008, Creativity under the Gun at Litmus Corporation, Harvard Business School, Case # 9-808-075

Group assignment

- Groups of 4-5 students
- Two groups for each project
- Projects are assigned randomly (business cases)
- 15 minutes presentation each
- Presentation to be emailed to Professor before the presentation day
- 10 minutes for class discussion/Q&A
- Satisfaction rate achieved during the group work is a requirement to write in the final paper



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Ingredients for Success

- Tolerance of risks and others
- Self awareness
- Leadership
- Followership
- Cooperation
- Collaboration
- Ability to learn from mistakes
- Reflection
- Team Work
- Focus
- Open Mindedness
- Ability to win/lose gracefully
- Ability to gain trust from others
- Sense of humour

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Here to support you to achieve more!!

Any question or doubt you might have, after you have checked out that no one of your colleagues know the answer (collaboration is the key), do not hesitate to contact me via email donato.boccardi@xxxx.pt



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3. Third Class: **Problem definition**

Puccio, G.J., 2012, Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY. Chapters 3, 4

Harvard Business School Press. (2003). Managing Creativity and Innovation. Boston, Massachusetts. Chapter 4 and 5

Problem Definition



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Questions you might use

- What is the problem to be solved?
- What data needed to be gathered?
- What was the root cause of the problem?
- What is at stake if the problem is not solved?
- What are your suggestions for addressing the problem?



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4. Fourth Class: **Creative Thinking**

Puccio, G.J., 2012, Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY. Chapters 5, 6 and 7

Harvard Business School Press. (2003). Managing Creativity and Innovation. Boston, Massachusetts. Chapter 7

What is Creativity?

The ability to modify self-imposed constraints.

Ackoff & Vergara (1988)

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Experts' speech zone (1/2)

Edward De Bono	Tim Brown
Creative Thinking	Design Thinking
https://www.youtube.com/watch?v=UjSjZOjNIJg	https://www.ted.com/talks/tim_brown_urges_designers_to_think_big

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Experts' speech zone (2/2)

Leyla Acaroglu

System Thinking

https://www.ted.com/talks/leyla_acaroglu_paper_beats_plastic_how_to_rethink_environmental_folklore

Carol Dweck

Growth Mindset

https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve?language=en

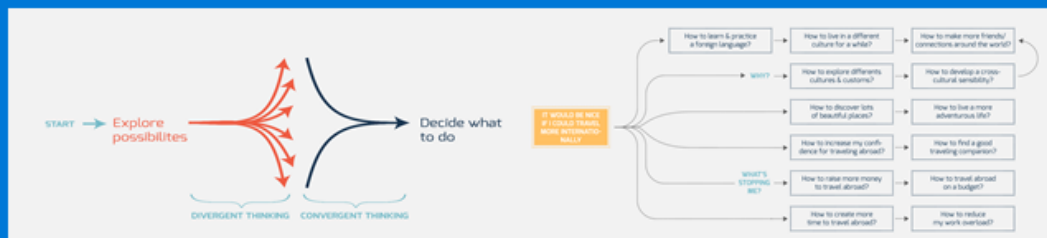
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5. Fifth Class: Methodologies and tools in Creative Problem Solving

Puccio, G.J., 2012, Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY. Chapter 8, 9

Methodologies and Creative Tools



Representation of Divergent and Convergent Thinking

Wabbling Tool

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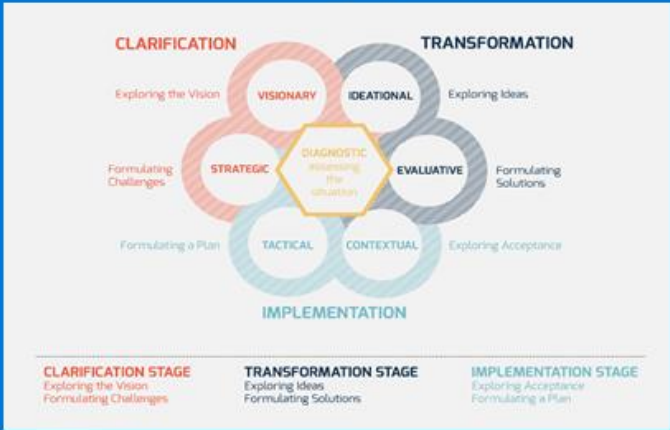
The Six Thinking Hats



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Creative Problem Solving (CPS) Model



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6. Sixth Class: **Creative Problem-Solving in Action / Microsoft Italia Example**

Case Study: Petersen, S., Espinoza, F. and Wathieu, L., 2012, Tchibo Ideas: Leveraging the Creativity of Customers, ESMT – European School of Management and Technology

The Rules for CPS in Action

Defer judgment:

- A dismissive comment or criticism can kill an idea before it has a chance;
- Do not comment on an idea until all the ideas have been posted.

Go for Quantity:

- At least 20 ideas in five minutes.

Seek Novelty:

- It is easier to come out with a wild idea than to spice up a tame one.

Make Connections:

- Listen to other ideas and add to or build on them;
- Think «yes, and...»

Creativity Management in Action (1/3)

State of the Art

Microsoft Italia

wants to communicate its new focus on *Open Innovation* and *Digital Transformation* to stakeholders:
how can Microsoft achieve this goal in a clear and impactful way?

Why they wanted to change

Microsoft Inc.

recently has changed the vision of the whole company, putting more focus on creativity and innovation, using the Growth-Mindset to help everyone to achieve more, whenever and wherever stakeholders want.

Creativity Management in Action (2/3)

How they did it

Microsoft Italia

through its Leadership Team has decided to ask for an external consultancy company, focused on creativity management, to help them to figure out how to get the goal.

-

Brainstorming sessions, groups of employees and surveys were made.

What was the outcome

Microsoft Italia

came out that to spread off its new message, needed to empower employees first, to do more in a Smart Way. To communicate in a strong way the focus they invested in a new building in the city center of Milan, allowing customers and partners to get inside the offices whenever they want.

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Creativity Management in Action (3/3)

Results to achieve

Microsoft Italia

set off the following goals to achieve through the new investment:

- Community Reach;
- Over 10k professionals in the Microsoft Technology Center;
- Over 4k students in the Digital Class;
- Over 200k visitors and customers in the Microsoft Showroom.

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Outcomes from Microsoft Italia case

Before



Microsoft Italia was in the suburbs area of Milan, difficult to reach for anyone.

After



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Lessons Learned from Microsoft Italia case

- Creativity Management produces concrete and impactful outcomes;
- Creativity does not mean just things related with art and humanistic fields;
- Challenges can be faced thinking outside the box;
- An innovation company did not come out with a new product to reach the goal, but invested on employees, smart working, and a new building;
- Creative procedures DO need experts and structured guidance;
- Collaboration within stakeholders is the key.

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7. Seventh Class: **Leadership and Creativity**

Case Study: Chua, R.Y.J. and Eccles, R.G., 2010, Managing Creativity at Shanghai Tang, Harvard Business School, Case # 9-410-018

Dweck, C.S. 2006, Mindset: The New Psychology of Success, Ballantyne Books, New York, NY, Chapter 5

Harvard Business School Press. (2003). Managing Creativity and Innovation. Boston, Massachusetts. Chapter 8

Mindset and Leadership

- Why do some thriving businesses fail?
- What makes one company fail while others in the same industry excel?
- What is the relationship between leadership, culture and success?
- What role does creativity play in corporate success?

CEOs and the Big Ego..

- The fixed mindset is «all about me!»
- Unwilling to see and address problems as well as admitting mistakes;
- Reluctant or unable to share the credit;
- Constantly reaffirming one's own superiority.

Creativity Management and Leadership

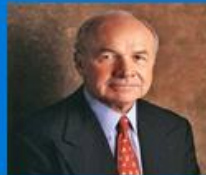
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Leadership and Creativity

What Leaders do

- Empowers others to be creative;
- Creates an environment that facilitates creative behaviors;
- Encourages collaboration and communication;
- Allows for incubation.

Keep in mind, not all great leaders are the same...

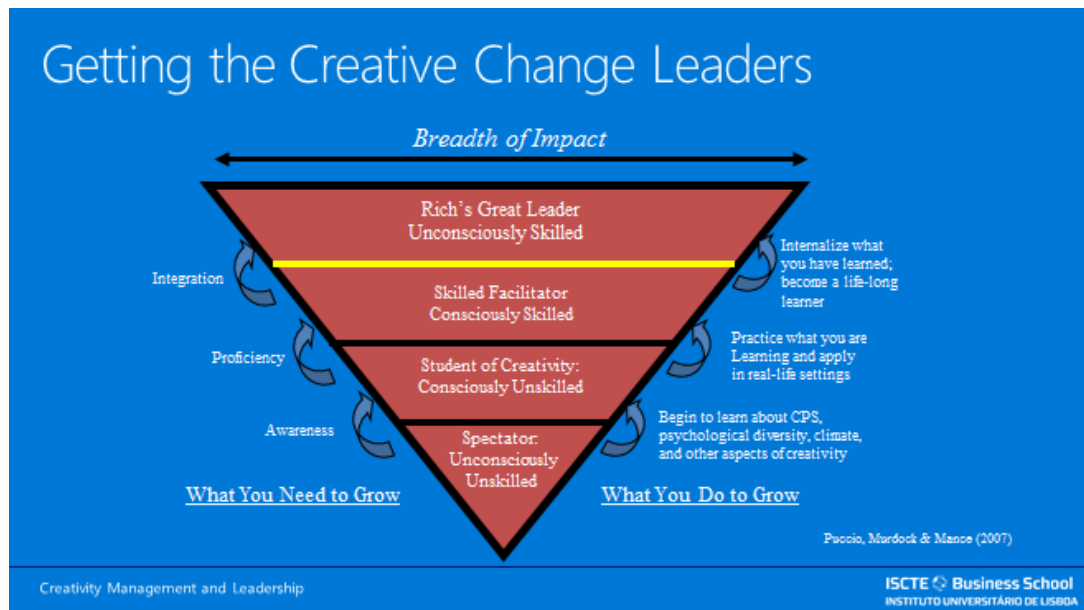


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8. Eighth Class: **Creative Problem Solving: The Thinking Skills Model**

Puccio, G.J., 2012, Creativity Rising: Creative Thinking and Creative Problem-Solving in the 21st Century, ICSC Press, Buffalo, NY. Chapter 10, 11



9. Ninth Class: **Group Presentations**

No assigned readings

10. Tenth Class: **Group Presentations**

No assigned readings

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Note for the reader: *all the figures and tables in the Master Thesis were designed by Gregorio Stano, a close friend of mine and a graduated professional designer at "Politecnico di Milano 1863".*

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