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Organizational creativity as a competitive advantage

A Framework of creativity

Hind Kadiri-Yamani

Project Work presented as partial requirement for obtaining the Master's degree in Information Management

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ORGANIZATIONAL CREATIVITY AS A COMPETITIVE ADVANTAGEA

FRAMEWORK FOR CREATIVITY

by

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ABSTRACT

This work project paper aims to develop an adaptable framework for organizational creativity as a new way for companies to gain competitive advantage over their rivals. It does so by searching and identifying the principle factors that affects organizational creativity and studying the most important creativity techniques. Additionally, the strategy behind this new model of organisational creativity, relies on knowledge management as a background model. This background process fits perfectly with the new proposed model and explains the right flow of information that encourages information creation and thus promotes creativity and innovation. This model has a very wide perspective and can be applied to multiple fields and industries. This project works includes in the annexes various tools and creativity techniques that support the model. Each phase of the model require some tools to be implemented. These tools may differ from one industry to another. Therefore, and according to the field of application, the right tools much be selected to be used in the application of the new model.

KEYWORDS

Organizational creativity, competitive advantage, factors, framework, innovation

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1 Introduction

The world we live in offers a multitude of resources to take advantage of. A shortage in these resources creates chaos amongst the consumers of said resources. Which brings out a darker side in humanity, a side that strives to survive, an animal instinct. The corporate world is no different. The same story repeats itself. With higher difficulty of gaining market shares due to the globalization, the fight is becoming fiercer between the competitors. To stay on top and by fear of losing everything the companies need to distinguish the products and/or the services they offer to the clients. Either by lowering the prices or by offering a disruptive alternative, the company can gain numerous market sharers through what is commonly known as competitive advantage.

Basically, “to be successful, you need to be able to articulate the benefit you provide to your target market that's better than the competition. That's your competitive advantage.”(AMADEO, 2019). The nature of competitive advantage changes over time and adapts to the changing environments and so should the companies follow the change flow in order to keep afloat. The latest competitive advantages that the companies have been utilizing in order to survive are information technologies and systems. As that is getting easier to get your hand on, nowadays the real competitive advantage becomes the one laying in the human resource’s creativity. Today, companies are already talking about capitalizing over organizational creativity.

The idea behind this project work is to develop a framework for this organizational creativity so that it can be used by different organizations to help them innovate better. A framework that would be more inclusive, comprehensive and adaptable to the different industries. What we can find so far in studies is scattered all over due to the general relevance of the topic in different fields. The goal is to gather as much data as possible from these studies to establish a complete picture of how to implement this framework into these companies core values.

Finding a solution to this situation is becoming critical by the day. There is huge time factor to consider due to the rapidity by which the change is occurring. If you don’t want to find your company in the gutter, you have to put up a fight with the market trends by implementing a more sustainable competitive advantage strategy. “The percentage of companies falling out of the top three rankings in their industry increased from 2% in 1960 to 14% in 2008.” (Reeves & Deimler, 2011). As it was the case for Nokia. Stephen Elop, Nokia’s CEO, wrote in a memo to his staff, “Our competitors aren’t taking our market share with devices; they are taking our

market share with an entire ecosystem." (Reeves & Deimler, 2011). He realised that they shook the market with a disturbance that flooded them away. "Through broader signal detection, parallel innovation, superior flexibility, and rapid mobilization, multi company systems can enhance the adaptiveness of individual companies." (Reeves & Deimler, 2011).

Some researchers realised the potential of the organisational creativity and they try to describe the relationship between innovation and organisational and individual creativity(Teresa M Amabile, 1996). Let us see how we can frame the creativity to be applicable for different organisations.

Our societies are filled with unhappy and overqualified employees stuck in low proficiency jobs, whilst we are entering an era of technological advancement producing sufficiently qualified machineries to replace us. Therefore freeing employees to work on more creative and suitable tasks for Humans. Such tasks focus on higher level management at companies for development and growth. In order to reach this aim, this work project contributes on the application methods development for those more creative tasks.

Generally, the purpose behind this work project is to improve any organization's strategic plan to stay in the game with the competition and not be left behind. But more specifically, understand how to get there through organizational creativity.

Consequently, what is organizational creativity? How does it play a role in gaining competitive advantage? What are the factors that engender creativity in humans? And how can we implement such concept in any type of organization? How can we measure its benefits?

The goal of this project work, is to build a framework –that would incorporate a set of guidelines– for organizational creativity that can be used by any organization in order to implement and boost its innovation and be able to swim in the market with the other fishes.

To this end we need to define the parameters of creativity and organizational competitiveness. Then study innovative projects and construct surveys that would enlighten us about the factors that contributed to the success of said projects. Once we draw the whole picture of how the innovative and creative process works, we will develop our own model and back it up with experiments.

2 Literature Review

2.1 Organization competitivity

Organization competitivity can be described as the aptitude of any corporation of generating more value, on an economic level, than the other competing firms.
Thus, depending on the markets and industries, the competition and the ways companies can compete differ.

2.1.1 Markets and competition

In a very competitive corporate world, companies strive to have an advantage over their competitors just to stay alive. This world is cruel and it is getting more and more difficult to stay in the race. The most dominant reason for this phenomenon is the changing environment. The corporate world went from a technology focused competitive strategy, to a more information oriented one. This change is due to the decreasing costs of new technologies and their growing capacities. Organizations, nowadays, are moving towards more information content in their practices, which is increasing the use of information technology applications and changing not only the view point on product, services and processes of the companies, but also the nature of the competition itself. This increasing change makes place for an era of risk and instability. Thus, making long term strategies off the table. The shortest time companies could possibly predict is still way too long. So, organisations find themselves stuck in an impasse and the only way out is adaptability. Before, the focus was on gaining the most expertise in the company's industry, however, the access to the technology and the information to become an expert is very accessible to everyone and thus not constituting an advantage anymore. So now, the new way of gaining an edge over the competition, is for the companies to be specialist at learning how to do new things. In other words, there is a need for more sustainable competitive advantage strategies that would adapt to the change the companies are faced with. According to Michael Porter, there are three main ways companies can attain

sustainable competitive advantage. Namely, cost leadership, differentiation and focus. Below is a graph representing these strategies.

Figure 1: Main strategies to achieve sustainable advantage according to Porte

For the purposes of this project work, the emphasis will be shifted on the differentiation strategies. In order to reach this differentiation, companies need to offer exclusive and high quality products. The differentiation gives the companies the possibility to charge more for their product and thus reaching higher profit margins.

Going deeper into the understanding of the differentiation strategy, the way to produce unique and high quality product is trough innovation. Meaning that the companies should find completely new ways to fulfil their costumer's needs. The perfect example to show how innovative products would give a company a competitive advantage is Apple with the iPod. No other product at that time allowed the users to navigate as freely through music tracks. Such approach is called New Product development (NDP), and for a company to be able to develop new products or services, it needs to make use of the creativity of its employees.

The idea, is to gain a competitive advantage through organisational creativity that is all the organizational activities related with creative processes that could be performed by an organization. To incorporate it, we need to capitalize over the different type of resources that the company has, but focusing on the human resource.

2.1.2 Strategies for competitive advantage

To achieve competitive advantage, companies have been trying out different strategies for years. Some fail and some get it just right. In the course of history, we find a lot of studies, and actual fields dedicated to studying the history of business strategies in order to more effectively apply new strategies that would fit the perceived change. Wadhwani & Jones (2017) studies in their working paper Historical Change and the Competitive Advantage of Firms the three different historical change models and how they help the research on dynamic capabilities. Where they define "The dynamic capabilities framework [as] an approach to strategic management that seeks to explain how firms acquire and maintain competitive advantages under conditions of change and uncertainty in their competitive environments."(Wadhwani & Jones, 2017). Where dynamic capabilities are defined as: "the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die."(Eisenhardt, Martin, Mohamud, & Sarpong, 2016). However, "We argue that, since the functionality of dynamic capabilities can be duplicated across firms, their value for competitive advantage lies in the resource configurations that they create, not in the capabilities themselves." (Eisenhardt et al., 2016)

Meaning the framework to be development from this work project will focus on the configuration of creativity resources. Moreover, if we want to build a framework that would incorporate specific steps for the employees to follow in order to achieve competitive advantage, we need to focus on more moderate change environment markets since the high velocity markets only need a few basic routines to keep afloat and weighting it with all the framework will only slow it down in such a fast paced industry. For this reason, we will focus on the moderately changing markets. "In contrast, in high-velocity markets, dynamic capabilities rely extensively on new knowledge created for specific situations. Routines are purposefully simple to allow for emergent adaptation, although not completely unstructured."(Eisenhardt et al., 2016).

Reviewing throughout the literature of this topic supports the case that organisational creativity constitutes a competitive advantage for organisations. Furthermore, most of the articles, journals and books focus on the complex network of information flow and knowledge creation as factors from the elements that help nourishing creativity in an organisation. As Dick Stenmark said in his paper *Intranet-supported Knowledge Creation: Factors and Technology for Organisational Creativity*: "Organisations' ability to create new knowledge is regarded to

be the primary source of competitive advantage already today and increasingly so in the future." The works of scholars from a multitude of disciplines have suggested that access to a rich variety of information stimulates creativity and knowledge creation" (Stenmark, 2002).
Giving the fact that creativity is still a new subject of research, we will have to identify the different factors that play into development of this said creativity in an organisation.

2.1.3 Measuring competitive advantage

To reinforce our findings through this study, we will be needing a measuring technique to rely on for accurate results. In this thesis, the most important parameter that we want to see improve in performance is competitive advantage and there is no holistic measure that would work better than the **Balanced Scorecard**.
"The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and non-profit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals."(Divandri & Yousefi, 2011). Invented by the Harvard Professors Robert Kaplan and David Norton, the balanced scorecard is a framework for performance measurement with a more holistic set of matrices including the non-financial and the strategic performance measures to the already commonly used traditional financial metrics.
"The balanced scorecard suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyse it relative to each of these perspectives:
1). The Financial Perspective 2). The Customer Perspective 3). The Business Process Perspective 4).The Learning & Growth Perspective" (Divandri & Yousefi, 2011).These perspective will be used for the assessment of the competitive advantage to measure the performance after the implementation of newly suggested strategy.

2.2 Creativity and creative thinking

The creativity itself is a means of generation for new ideas, thus the problem is that we still don't know how can we execute organisational creativity in order to get innovative.

2.2.1 Concept of creativity

Defining creativity has been a struggle in the timeline of humanity for several reasons. Firstly, the topic was majorly neglected. Psychologists and researchers were more focused on other

topics such as intelligence and so on. “Guildford (1950) reported that less than 0.2% of the entries in *Psychological Abstracts* up to 1950 focused on creativity.”(Sternberg, 2010). Moreover, the conception of creativity prompted so many different point of views in history going from Pre-Christian Views to the Early Western Views and so on meaning that the studies of creativity augmented because of the different possibility of applications in societies as a whole. “The phenomenon of creativity, richly considered, involves many nuances and interpretations; only rather narrow aspects of creativity are readily understandable in terms of empirically falsifiable hypotheses, with resulting verdicts that suggest definite winners or losers.”(Sternberg, 2010). Nonetheless, there is a very wholesome definition of creativity “the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context”(Sternberg, 2010). Despite the vast number of elements attached to the concept of creativity to be taken into consideration, it is necessary to analyse them in order to be able to make up ways to develop human creativity.

2.2.2 Organisational creativity and factors

The use of creativity in an organization is what is referred to as organizational creativity. However it is more complex than it sounds since this creativity is not applies on just an individual level anymore but on the organisational more complex level too. This means that the organizational creativity come into interaction with other systems. Basically, Organizational creativity has been define as “the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system” (Sternberg, 2010). In a search a clearer understanding of organisational creativity, Puccio,
Murdock, and Mance (2007) provide us with a model for creative change that will help better frame the set of variables and factors that play into the development of said organisational creativity. Figure 1, represent a visual of the model proposed.

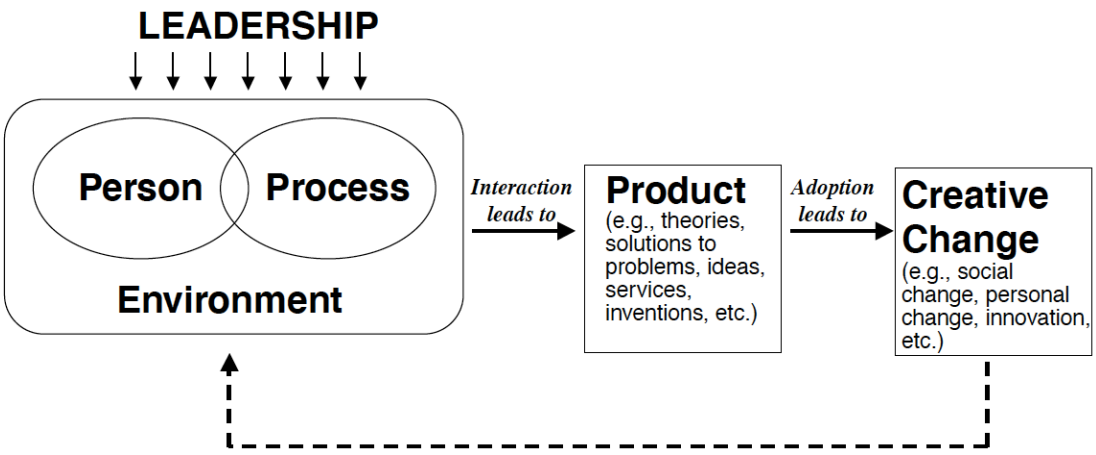

Figure 2. Creativity: A Systems Model

This model here, reveals the most dominant factors that affect creativity inside an organisation. These main four elements are: The Person, which is essentially referring to individual creativity. Researchers identified the set of skills related to individual creativity to be: Domain-relevant Skills, Creativity-relevant skills and Intrinsic task motivation. The next element is Environment. Where we find an increased interest on the impact that the environment has over creative behavior. Where we find National culture, External environment, Organizational culture, Organizational structures, Climate and physical space to be the environmental influencers of organizational creativity. The third factor is Leadership. This part of the model long ignored is now very trendy in the field of organizational creativity. Knowing that leaders play an important role into nurturing creativity at work, suddenly, shifts the view of the type of skills the leaders should have. "They identified these qualities and skills as follows: tolerance for ambiguity; ability to assess and be comfortable with risk; ability to quickly and effectively assess an individual; ability to balance passion and objectivity; and ability to change."(Sternberg, 2010). The fourth and last factor is Process. This final element is very important since it tackles the methods and strategies to take measured decisions and not leave it to chance. Thus will be discussed in more details in the next section.

2.2.3 Problem solving techniques

Boosting creativity requires the implementation of processes proven to enhance one or several elements of the creative process. Most importantly, whether the techniques work only for individuals or only for groups or for both, the emphasis is dissolving the old patterns humans tend to get stuck on to make place for new ones. "These techniques are individual and in group, individual techniques including creative illusion, Do it ... The group techniques including

brainstorming, six hats, Delphi, Synknyks and techniques that can be used both individually as well as collectively including Samper, breaking assumptions, why and morphologically." (Fadaee, 2014). Structured methods for solving problems with the goal of enhancing creativity include: Creative Problem Solving Method, Synectic, TRIZ, Design thinking and Productive thinking model (Vitor's model).

2.2.3.1 Creative Problem Solving Method (CPS)

Creative problem solving is a framework that offers a set of tools for productive thinking. "The roots of CPS are found in Alex Osborn's (1953) work." (Treffinger, 1995) He, alongside Sidney Parnes, grew the idea of CPS into a 5 steps model. From there, researchers worked to develop the model by introducing modifications and defined a sixth stage for the process. "The six stages of CPS were refined further by clustering them into three general components, described as Understanding the Problem, Generating Ideas, and Planning for Action"(Treffinger, 1995). These six stages being: Mess-Finding, Data-Finding, Problem-Finding, Idea-Finding, Solution-Finding, and Acceptance-Finding. Furthermore, "a contemporary approach to CPS recognizes that an effective process framework must be flexible and dynamic." (Treffinger, 1995)

2.2.3.2 Synectic

"A Synectics session referred to by Gordon as an "excursion" is a group problem-solving activity wherein persons are stimulated to think creatively under a loosely structured system."(Robinson & Young, 2001) The Synectics framework follow these stages: Problem as Given, Analysis and explanation by expert, purge, generation of problems as understood, choice of problem as understood, evocative question for example, choice of example, evocative question for personal analogy, evocative question for book title, choice of book title, evocative question for example, choice of example, examination of example, force-fit and finally viewpoint. This model should be executed by an expert, whose purpose is to give all possible information to help find a solution to the problem. "At its very basis, Synectics makes "the strange familiar" and "the familiar strange"(Robinson & Young, 2001).

2.2.3.3 TRIZ

"TRIZ is about providing means for problem solvers to access the good solutions obtained by the world's finest inventive minds." (Mann, 2001). Basically, the TRIZ process goes through four stages, from a specific problem to a TRIZ generic problem to a TRIZ generic solution and

from that to a specific solution. The philosophy of TRIZ rely on four pillars: Contradictions, Ideality, Functionality and Use of Resources. However, we also find researchers loosely speak of the importance of thinking about space and time.

2.2.3.4 Design thinking

Design thinking started out as mind strategies, as a way for designers to apply individually or collectively the design processes. However, nowadays, design thinking has been freed from its limiting chains and became this multidisciplinary set of tools for new processes. Some of the main characters of design thinking are mainly visual, use of sketching and prototyping tools, intensive observation and wondering, challenging stereotypical perception, emotional and rational at the same time, subjective, abductive and inventive, failure is a part of the process, comfortable with ambiguity and uncertainty, empathic and human-driven, deep understanding of peoples' needs and dreams and principally collaborative.

To facilitate the use of this design thinking process for projects, models were created as far back as 1924 with Poincare. Although he used the model for mathematical problem-solving purposes, he opened the door to Wallasw (1926) to divide the process into four main stages. From there researchers developed more and more the models. The three best models in the world in the business innovation field are the 3 I and HDC models by IDEO, the double diamond model by British Design Council and the Design Thinking model of the Hasso-Plattner Institute.

In 2001, IDEO propose 3 Is as a model for social innovation, where the Is stand for: Inspiration, Ideation and Implementation. Following that, IDEO also developed another model with a more human-centered design process called HDC, acronym for Hearing, creating and delivering. The Design Thinking model of the Hasso-Plattner Institute is divided into six stages that are iterative between them. Theses stages are as follow: Understand, Observe, Point of View, Ideation, Prototype and tests. And finally, developed by the British design council in 2005, is the model that portrays best the convergence and divergence of the design process, the double diamond model also called the 4D model. The 4 Ds represent the 4 stages of the process and they stand for: Discover, Define, Develop and Deliver. (Tschimmel, 2012)

2.2.3.5 Productive thinking model

This model, developed by Tim Hurson in 2007, Is another approach of solving problems creatively. The ultimate standard of this method relies on Tim's view on success. He believes,

the way we think is more important that the knowledge we hold. His method is divided into the following six steps.

First, this method establishes the context by asking the question *What is happening ?* Secondly, it uses a set of tools gathered in an acronym DRIVE, in order to enlighten about future impacts of the seized opportunity. Where DRIVE stands for: *Do, Restrictions, Investments, Values and Essential results*. The third step in this process askes the question: *What's the issue?* And uses brainstorming and clustering techniques to facilitate the framing of the problem. The fourth stage also uses brainstorming techniques to generate a set of possibilities and filter one solution to be developed. It is called Generate Responses. Next is the building of that said solution. We shall use another acronym as a set of tools to help enable this solution. POWER stands for: *Positives, Exceptions, What else, Enhancements and Remedies*. Last but not least, the sixth phase called Align Resources, is where the planning and execution of the chosen solution happens.

2.3 Creativity and organisational innovation

With a better grasp of what creativity is and how to develop it, the study goes a step forward onto observing organisational innovation and how is it related to creativity.

Companies nowadays, are overwhelmed with the rate at which society is changing. Consequently, they are always on the look for the next best approach or strategy to hop on and not get blown away. This is where we introduce Innovation as this big new solution that is supposed to fix it all in a finger snap. However, organisational innovation is not a miracle solution. It isn't by appointing an innovation manager or department that an organisation become innovative. In 1934, Schumpeter defined innovation as "the successful commercialization of new combinations, such as new materials and components, the introduction of new processes, the development of new markets, and the creation of new organizational forms."(Sternberg, 2010). On the other hand, innovation as a solution for a rapidly changing environment comes from a place of truth. Amabile, Burnside, and Gryskiewicz proposed that "creativity is the crucial 'front-end' of the innovation process; before innovation can happen, the creative ideas must be generated by individuals and teams so that they can be successfully implemented"(Sternberg, 2010). Subsequently, achieving organisational creativity requires the firms to have in theirs bones creativity, to have it as a culture that every single employee swears by. "Companies achieve competitive advantage through acts of innovation" (Pressman, 1991) and therefore through creativity.

2.4 Organisational creativity as a strategy

To use creativity as strategy, it is necessary to knowledge management and its processes, and how to link it with organizational creativity. For the purpose of creating a model of a strategy that can be applied to reach higher market shares and gain competitive advantage.

2.4.1 Knowledge management

During the research conducted for this thesis, a recurring concept appeared intriguing and very much relevant to the topic at hand: Knowledge management.

As many researchers have found, Knowledge management (KM) has a great impact on the modern companies' performance in this ever changing world. Moreover, it was also noticed that it has a great correlation with organisational creativity. To understand knowledge management, we need to understand the hierarchy of The Data-Information-Knowledge-Wisdom. In the figure bellow you can see that the pyramid portrays Data as the starting point of which can emerge great wisdom. Processing the data gathered engenders useful information that is then transformed into knowledge. Thus, based on that knowledge comes the translation into wisdom.

Figure 3: The Data-Information-Knowledge-Wisdom Pyramid

The move from the raw data and limited information leads to the needed knowledge that can bring great wisdom and thus performance growth to a company. Subsequently, knowledge is the key factor to be managed. Knowledge management implies the identification and leveraging of communal knowledge of a company provoking competitive advantage. A survey executed

by KPMG (1998), “found that almost half of the companies reported having suffered a significant setback from losing key staff with 43% experiencing impaired client or supplier relations and 13% facing a loss of income because of the departure of a single employee.”(Bernstein, 2011). Which points out the origin of that concentrated knowledge into the people and thus the organisation itself. Knowing that knowledge comes mostly from the inside, is a relief because it means that the real issue relies into its management and concentrates our efforts on a specific area. To manage anything, once it is defined, the next step is to build the road map on which you lay your basses. That is the process.

2.4.2 Knowledge management processes

In the case of knowledge management, a process can be defined as a set of activities and sub-activities conducted on knowledge by the right entities inside the company. Researchers are not in agreement about the number of processes of knowledge management, however they hover around four big processes: Knowledge creation, storage, transfer and application. Needless to say, these main processes can be segmented into minor ones.

The first one, and the most important one for this study, is knowledge creation. The SECI model that Nonaka presented in 1994 is simplifying knowledge management only into knowledge creation purposes. It is based on the two elements that are tacit and explicit knowledge. Through social interactions, collaborations and individual reflections new knowledge is developed and/ or content is replaced within the organization. This model is formulated upon the principles of dynamic interactions between the two forms of knowledge and (tacit and explicit) and the existence of the three social levels of interaction namely: individual, ground and environment. The SECI model includes four major activities: socialization, externalization, combination and internalization. These are modes of knowledge creation referring to the states that knowledge is during an interaction.

- **Socialization:** refers to the movement of tacit knowledge from one individual to another, it still being tacit, in the organization.
- **Externalization:** is what Nonaka refers to as the conversion of tacit knowledge onto explicit one such as best practices and the formulation of lesson learned.
- **Combination**: refers to the transformation of the existing explicit knowledge to create some new explicit knowledge.
- **Internalization:** refers to the grasping of explicit knowledge to create new tacit knowledge. Most accurate examples of this would be the learning processes.

These modes work together in a very tangled fashion and Nonaka's model represents these ways for a better interpretation of the relationship between these modes.

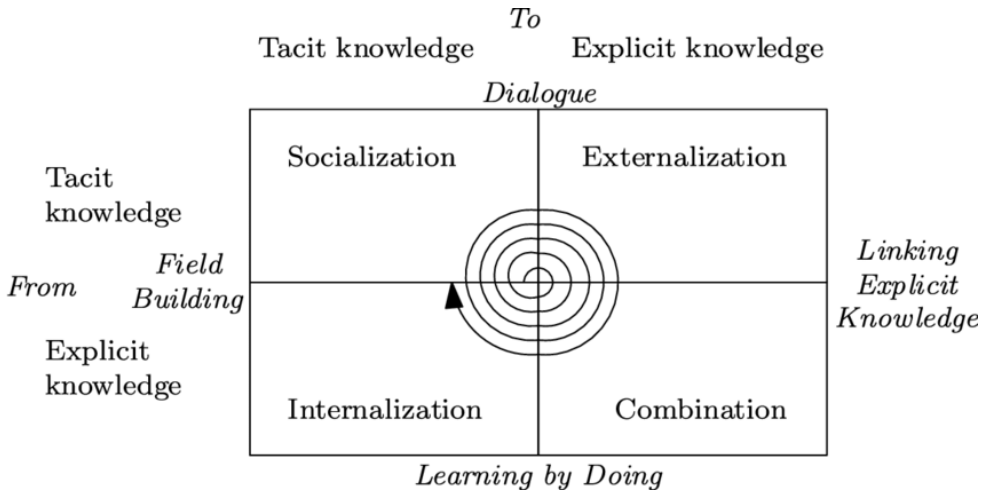

Figure 4: The SECI model for KM by Nonaka

Knowledge storage and retrieval as one of the major knowledge management processes, encompasses activities for the company to remember better and work better with existing knowledge. This manipulation of organisational knowledge is referred to as organizational memory. It includes knowledge under many different forms such as forms, databases and organizational procedures.

Knowledge transfer, the third of the four major KM processes, is a process that occurs at many stages and considers the distribution nature of the organisational cognition. This process is governed by communication and information flow. It has been conceptualized into five elements and most important one would be the existence and richness of transmission channels.

The idea behind knowledge application resides in the application of the knowledge of a company and not in the knowledge itself. Three primary mechanisms have been identified for the application of knowledge: directives, organisational routines and self-contained task teams.

To my point of view, all the other processes should be sub processes to the knowledge creation one because in detailing the knowledge creation process we realize the existence of the other processes

2.4.3 Knowledge management strategy

They are usually IT based systems that are designed to support and enhance the companies different uses of knowledge management processes either for knowledge creation, storage,

transfer and/or application. For the purposes of this study, we are focusing our attention on the knowledge creation perspective.

2.4.4 Linking Organisational Creativity and Knowledge Management

Focusing on the knowledge creation processes and the problem solving techniques, we can't help but realize how intertwined they are. "Innovation is extremely dependent on the availability of knowledge and therefore the complexity created by the explosion of richness and reach of knowledge has to be identified and managed to ensure successful innovation" (L. & T., 2003). Herkema also defined innovation as "knowledge process aimed at creating new knowledge geared towards the development of commercial and viable solutions"(Plessis & Africa, 2003). Cavusgil et al. go further and believe that "firms that create and use knowledge rapidly and effectively are able to innovate faster and more successfully than those that do not"(Plessis & Africa, 2003).

It is believed that the main reason innovation is dependent on knowledge management is the learning by doing style that is highly emphasized when employing knowledge management. For the competition does not have the possibility to purchase the know-how which only make it difficult to replicate.

Ultimately, "It is important for both innovation and knowledge management professionals to understand the systemic relationship between these concepts and the value that it can generate in respect of creating and maintaining sustainable competitive advantage for organizations."(Plessis & Africa, 2003).

The figure bellow represents Knowledge management and Organisational creativity in a parallel form to visually show the similarities of both processes.

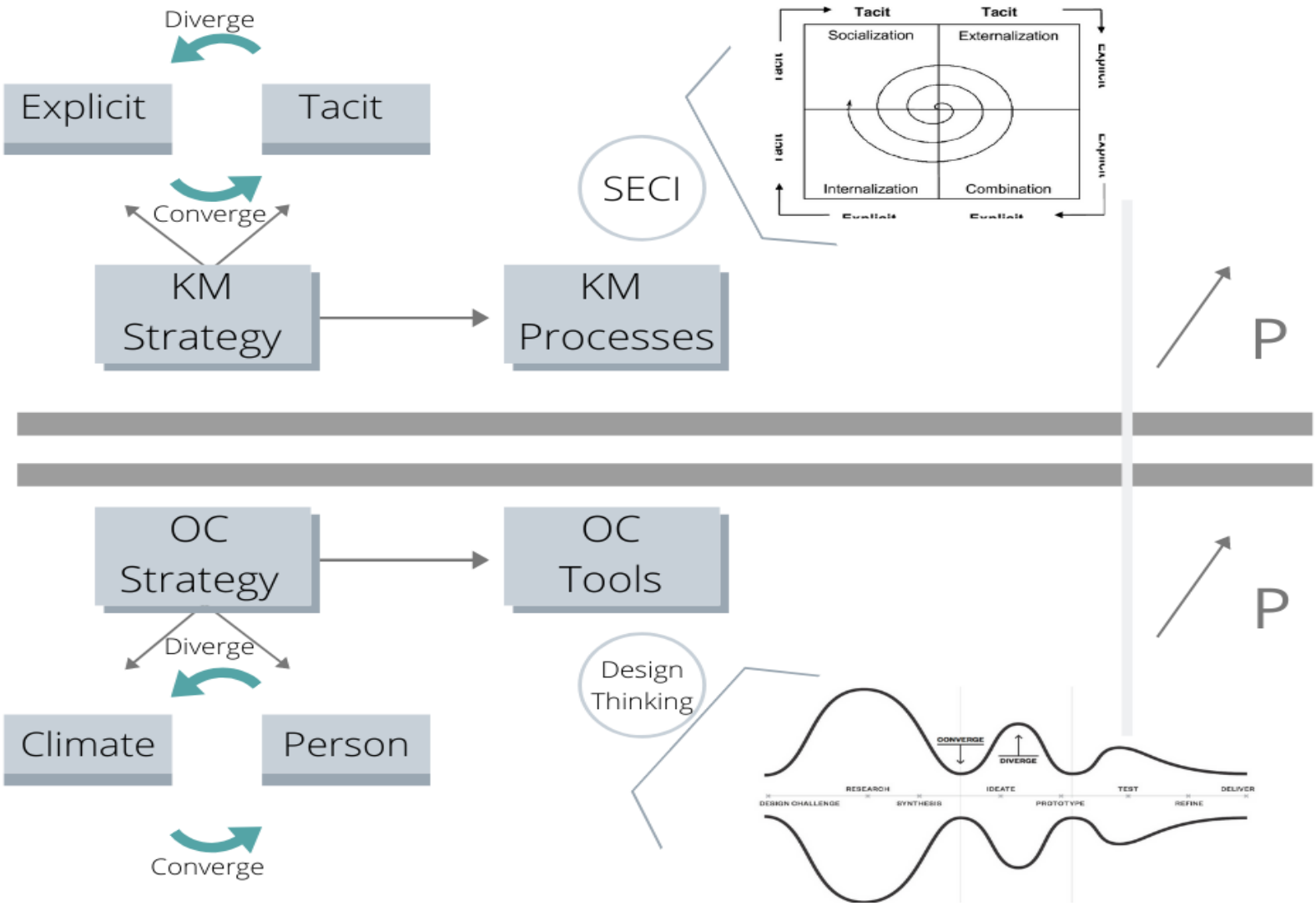

Figure 5: Visual representation of KM and Organisational creativity components

3 Methodology

Based on the research conducted in the literature review we find that organisational creativity is a strategy of competitive advantage. The literature review goes from creativity as a concept from an individual perspective to a creativity in an organisation that is applied on a whole system and thus requires models, techniques and tools. It also explores the competitive advantage of a company and the different strategies to reach it. In this thesis, this strategy will based on the concepts of operational creativity.

At last, explore should be completed that looks at how much such innovativeness procedures can move past their restricted use as instruments – that seems to be, as systems utilized just when a troublesome errand presents itself – and can be woven into the very texture of an association. That is to make the intellectual and full of feeling rules that work underneath these techniques part of the authoritative culture. Almost certainly, when such frames of mind and manners of thinking become some portion of the way of life, an association will turn into a genuinely inventive framework, along these lines urging imagination to emerge in all units and whenever.(Sternberg, 2010)

Thus, this thesis purpose is to build a comprehensive framework of organizational creativity as a strategy for competitive advantage.

3.1 Design science research

To come up with a solution to this problem, Design Science Research (DSR) is the right methodology to follow for the simple reason that it allows the creation of an artifact.

Design Science Research is a research method that involves creating/ improving something in an innovative way, that comes from a specific problem. (Hevner, March, Park, & Ram, 2004)

The DSR method englobe six steps.

The first step is the identification of the problem and motivation. The output of this step is a clear research problem definition and the reasons why it holds value in the solution.

Which leads to the second step, where that would be the definition of a solution to earlier defined problem whilst also defining the objectives.

The third stage is about design and development. Where knowledge is generated through the process of building the artifact. Generally, a deconstruction of the main problem into smaller ones is the way to go through this stage. Also, a clear view of the solution value should be

justified with the needed background through research of the current state of the problem and the already available solutions and analyzing their effectiveness.

In step four, we demonstrate the use of the developed artifact in the previous stage and solve the problem.

Next, it is time to evaluate. Meaning that this step focuses on the validation of the artifacts efficiency by defining the most appropriate evaluation methods that are aligned with the business requirements. By the endo of this stage the evaluation will determine the need to through the solution again or to move it to the next sage.

Communication is the last step of this process. This is where the solution is shared to audiences in hope for some additional feedback. One of the forms that this communication can take would be through case studies enabling another sort of evaluation of the artifact in a business environment for future implementations. (Peffers, Tuunanen, Rothenberger, & Chatterjee, 2007)

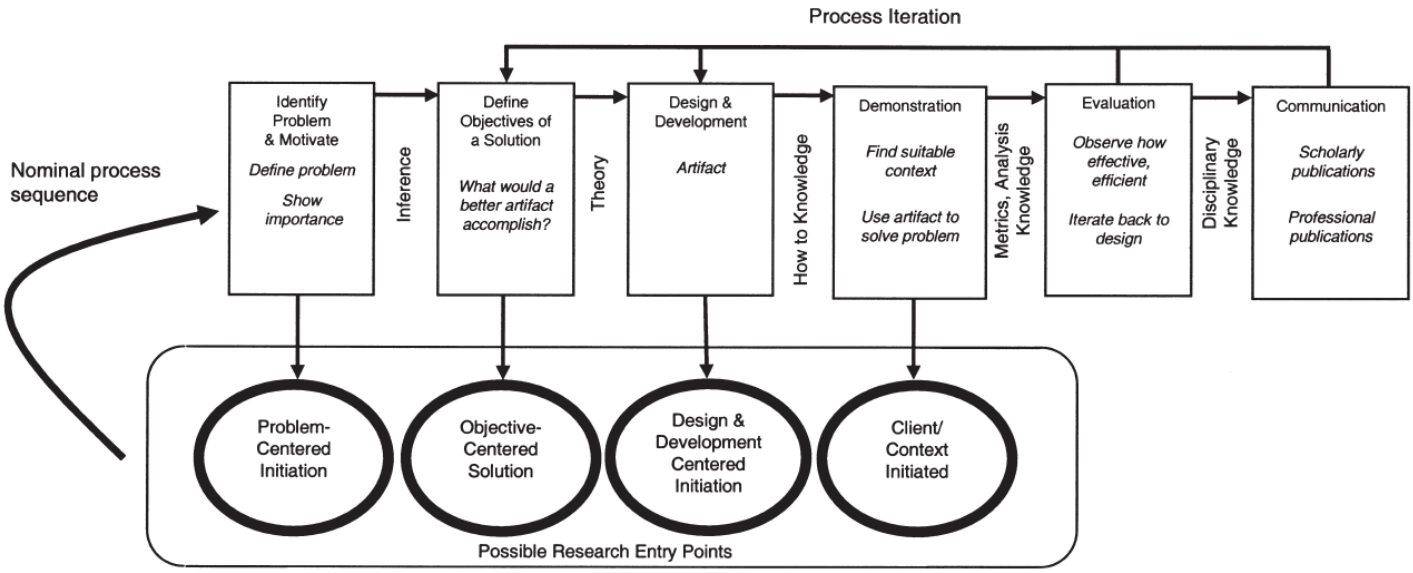

Figure 6: DSRM Process Model (Peffers et al., 2007)

3.2 Research Strategy

In this section, we will correlate the stages of the DSR methodology to this study and detail the tasks as needed for the purposes of this thesis. Bellow, is a representation of the tasks.

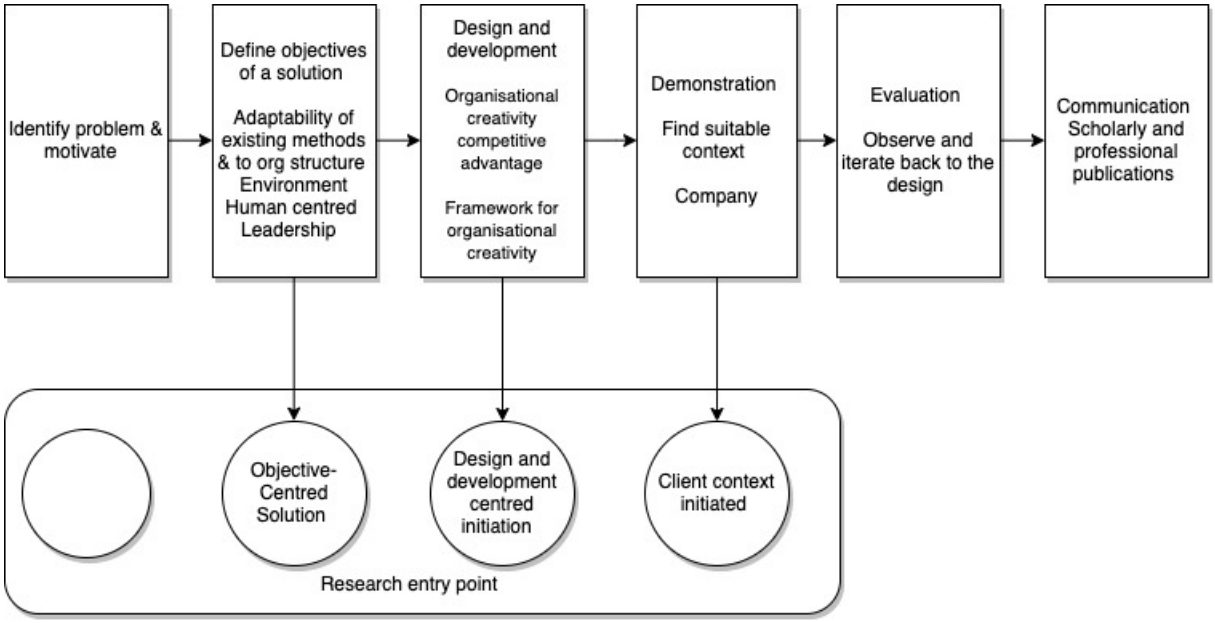

Figure 7: DSR implementation strategy

Since the study already covered the first stage of the DSR methodology, the entry point for the implementation of the methodology to the thesis will begin at the second stage named definition of objective of solution. The table below, represents the sub problems that constitute our major thesis problematic and the corresponded solution objectives to them. This stage helped identify the elements that the outcome of this study should have as standards.

Sub problems	Solution objectives
Adaptability of existing methods	Trainings
Flexible problem solving processes	Adaptability to the organisation structure
Person	Human centered
Leadership	Parallel strategies system

Table 1: Objectives of final solution

4 Framework for organisational creativity

In this section, will be presented the actual framework that was achievable for development through the research made in the literature review. The previous section referred to, will also be the base for the following assumptions needed to be drawn as a frame for the development of the framework.

4.1 Assumptions

Based on what we have learned and studies throughout the literature review about organizational creativity, knowledge management and competitive advantage, we realized that to seek full potential of this conceptual model, we take into consideration the following assumptions:

- Competitive advantage is directly impacted by business strategies.
- Competitive advantage is immensely influenced by knowledge management strategies.
- Organisational creativity follows the same principles as knowledge management strategies.
- Organisational creativity is a source of competitive advantage.
- In order to make the outcome of the creativity processes useful we need to listen the customers.
- The people implementing the process should believe in the process and follow it to the best fit for their problem.
- Organizational creativity works on a spiral process form.
- BA is the physical place where creativity can flourish.
- Final products of the conceptual model, may or may not need to go through the process again in a certain time frame.
- This model will be implemented as a strategy level for best outcomes.
- The working environment should be favorable of information flow.
- The external knowledge gathered in the challenge phase of the process is base of the creation of new knowledge.
- The challenge picks should fit into the desirability, feasibility and viability trio.
- To achieve thorough research, employment of the sense of empathy is required.

- Empathy requires a lot of observation, engagement and immersions into the users lives, needs and point of views.
- The choice of either techniques for the deployment of a research plan should rely heavily on the challenge type and the possibility of execution.
- A research plan must be implemented to take out as much as possible from the research phase.
- The execution of the research plan require a lot of data collection that will be needed for the synthesis phase.
- The internalization in the synthesis phase refers to the gathering of all the previously collected data and the analysis that will help form insights.
- The synthesis phase relies heavily on teamwork.
- The internalization that happens in the synthesis phase refers to inside the team as much as it refers to each individual.
- Finding insights is the general purpose of the synthesis phase.
- Techniques that can be used through the synthesis phase and others are strong suggestions, however they are still suggestions because every project might require a different set of techniques due to availability and suitability .
- Brainstorming is mainly used as a term to describe the state of generating ideas.
- In the ideation phase, the main purpose is to generate ideas and selecting the ones that are most feasible.
- The generation section should be shielded from any form of judgments to prevent the stifling of ideas, whereas, in the selection, a little arbitration is required.
- Understanding the point of views (POVs) of the users and trying to find a solution kind of mindset is what triggers the generation process.
- The techniques used in the selection section are of both refining the ideas and selecting the most suitable ones for the next phase.
- The prototyping phase building blocks to build, learn, measure and iterate.
- The visualization of ideas is the drive of the prototyping phase.
- You can execute the building blocks of the prototyping phase through guiding questions.
- In testing your prototype, keeping track of the feedback is essential, but also asking for it.

- The define phase is about pinpointing the final prototype that should include all past insights.
- The deliver phase, which is the final stage, is where you should present the final solution.
- Offering the final solution does not mean that your solution is perfect. Environments are always changing, so your final solution should be flexible to go through the whole process again if needed.

4.2 Hind's framework

4.2.1 Organisational creativity

This figure, represents the details of a design thinking process. From the definition of the challenge until the delivery of the solution, this process aims to shape the human thinking into a more designed and creative form. In other words, a designed thinking is a thinking that creates more knowledge. The wave in the figure bellow represents the divergence and convergence of the design thinking. This wave also represents, behind the scenes, the type of information involved in the different stages.

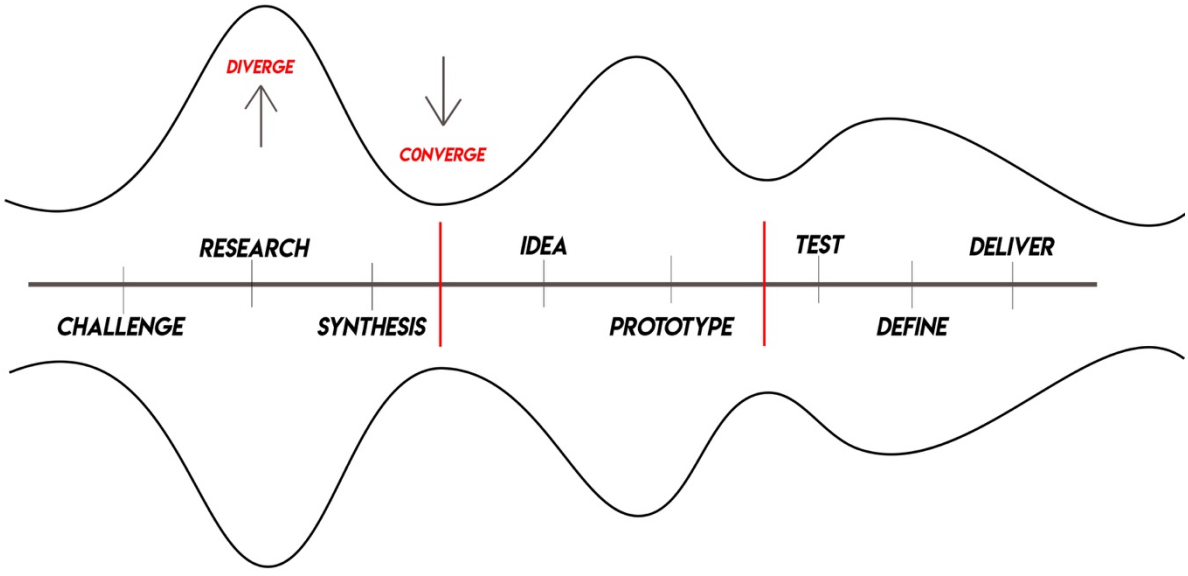

Figure 8: Design thinking process

4.2.2 Knowledge management

After the research done on knowledge management, we see an immense correlation between the flow of the information in the creative work and knowledge. The figure representing the

design thinking process shows a tendency of movement that goes from divergent to convergent again and again. This tendency can be seen in the knowledge creation process as well. As it is represented in the figure below, the knowledge management at its core, is creative process that aims to create new knowledge. Thus the similarities are reproduces through the back and forth movements between convergence and divergence, or in knowledge management terms, Explicit and tacit.

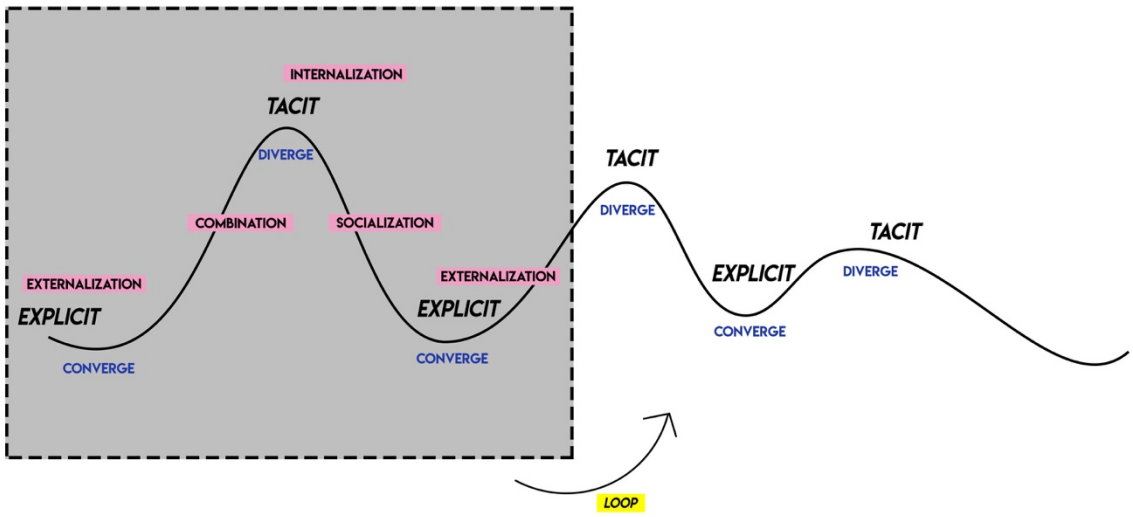

Figure 9: Knowledge creation process

From this figure we can see that the selected square is one cycle of the knowledge creation process that starts from *externalization* through *combination, internalization,* and *socialization* then start all over again at *externalization*. This loop, is what is known as the Knowledge spiral. The next figure represents this spiral from a front view (on the left) and a side view (on the right) that shows how it extends in time and focuses as the string gets tighter and closer to a final solution.

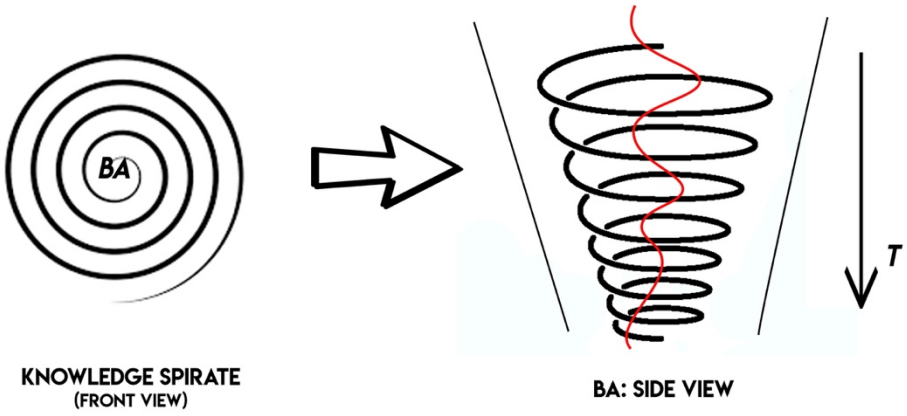

Figure 10: BA, the physical place of knowledge creation

The wave that is illustrated in the middle of the side view of the knowledge spiral expresses the convergence and divergence of the design thinking process through the spiral.

4.2.3 Superposition of OC & KM

Based on the knowledge creation process and the design thinking process figures, a last figure was created to show the intertwinement of both and how they work together.

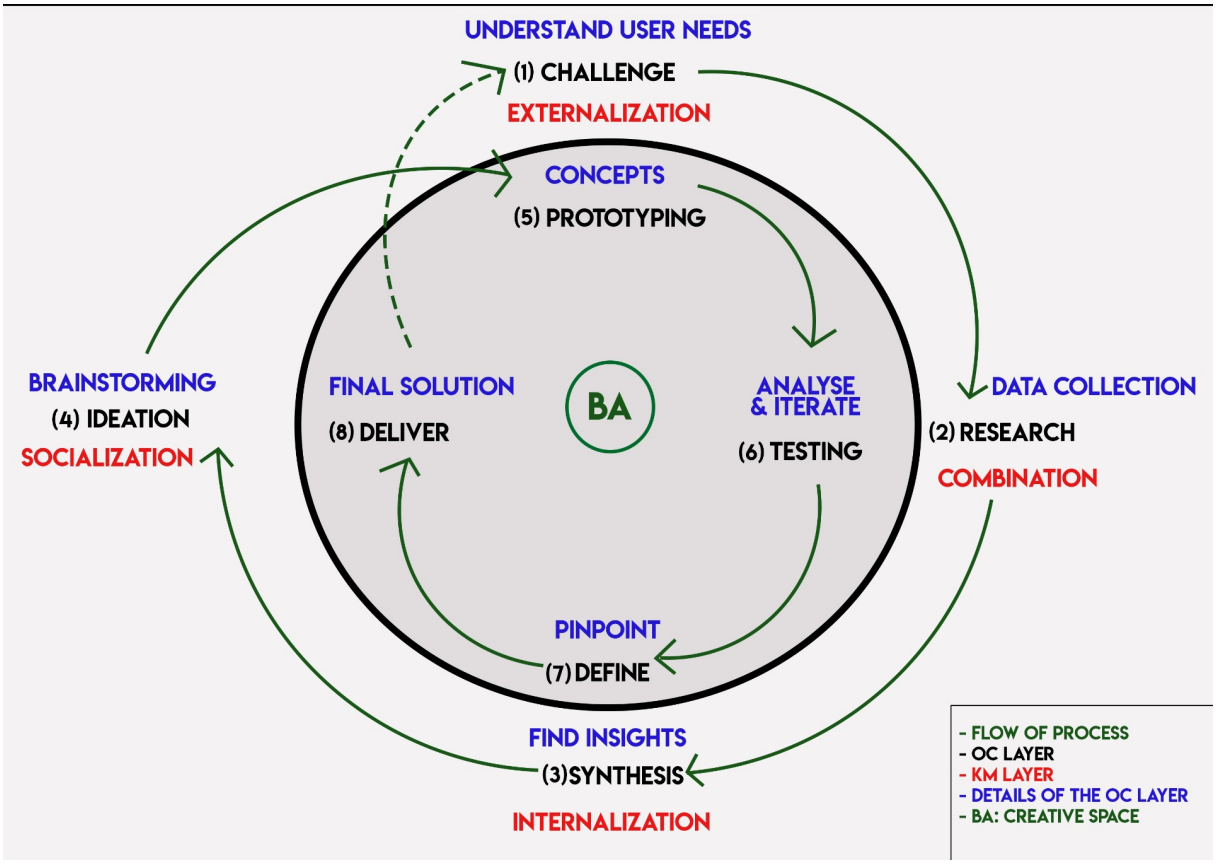

Figure 11: Hind's framework, the superposition of KM and OC

Starting from the outer circle that represents the beginning of the spiral knowledge and the start of the design thinking process, We can see the different layers symbolized in each stage. To begin solving a problem, we need to define the challenge and understand costumers needs by *externalizing* and voicing out the issue until you find the right path to follow. This will only lead to more divergence since we need to start the research and focus on data collection in the form of c*ombination*. At the top of the divergence we are synthesizing and finding insights by *internalizing* our discoveries. Now, we converge back through *socialization* and brainstorming to form ideas. Entering the inner circle, the KM layer is projected from the outer circle to the inner one. After the ideation phase, we start diverging back and prototyping all sorts of concepts you came up with at the previous stage. Next up, the testing phase. Where you combine inputs from the different perspective to analyze and iterate the prototype or prototypes. Diverging to the top to pinpoint and define our solution to the firstly defined challenge. And you converge back to a final product that is shared between the users a delivery, opening it to criticism that may or may not put the product back to the spiral.

All these stages have specific tools and methods of implementation that would be details in the next section of this thesis.

4.3 Implementation guidelines

4.3.1 The General Process

To represent my framework, I chose to use BPMN as I find it to be the best way to represent my General process.

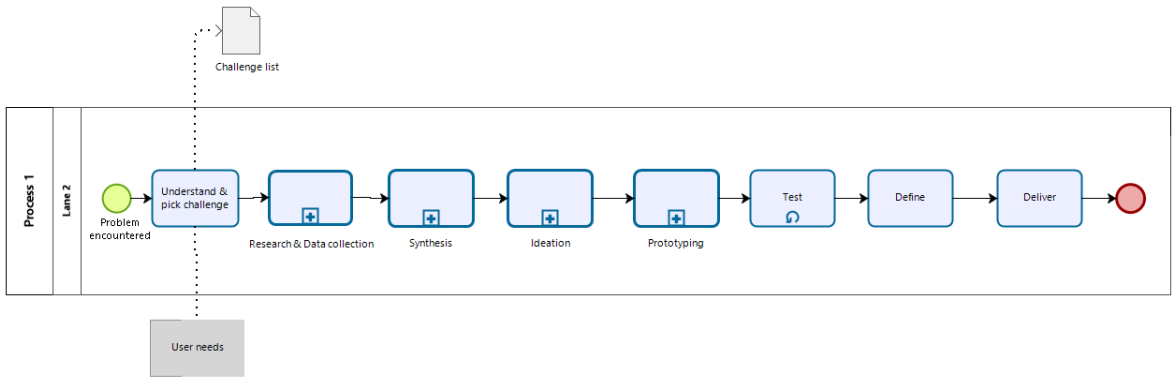

Figure 12: The general process

Some of the more complex phases that require more detailing were expressed as sub process of the general one to ensure an easier read through the general process but also to guarantee a better understanding of the steps of those subprocesses and thus a better execution.

The general process have four separated subprocesses that correspond to these respective phases: *Research, Synthesis, Ideation and Prototyping*.

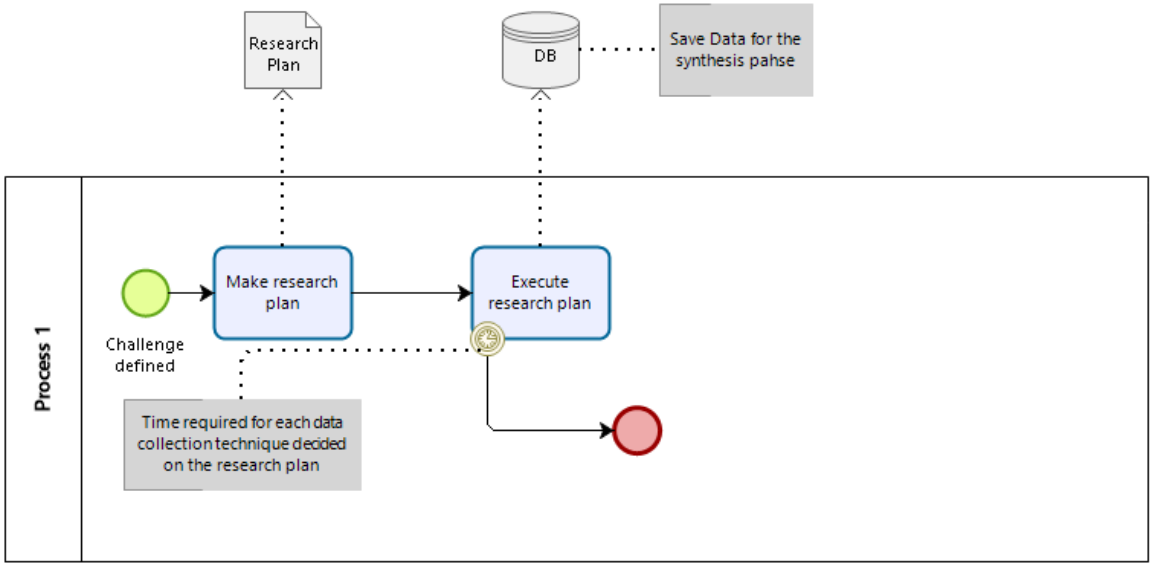

Figure 13: Research sub-process

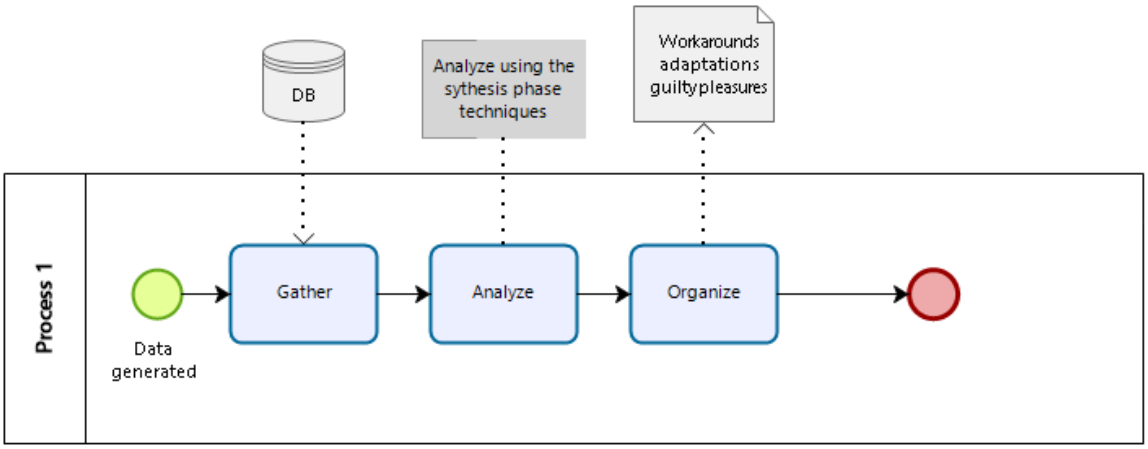

Figure 14: Synthesis sub-process

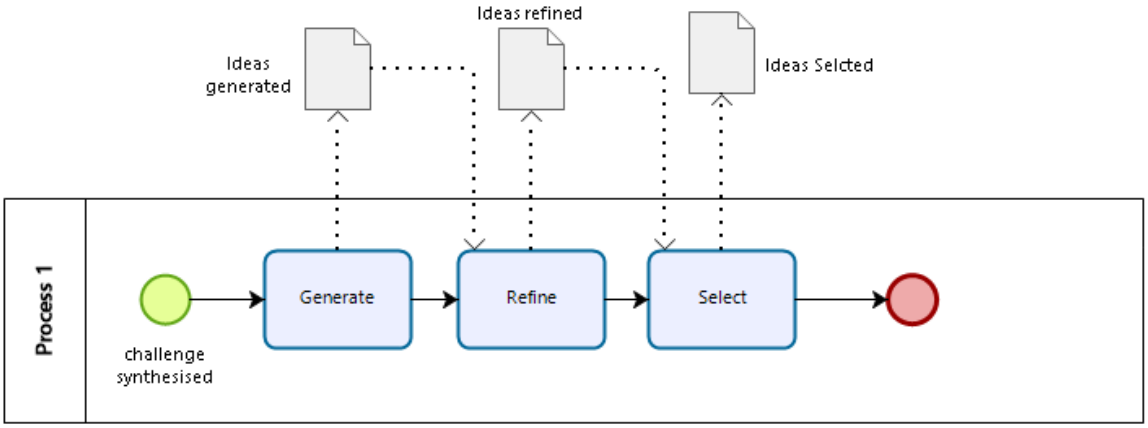

Figure 15: Ideation sub-process

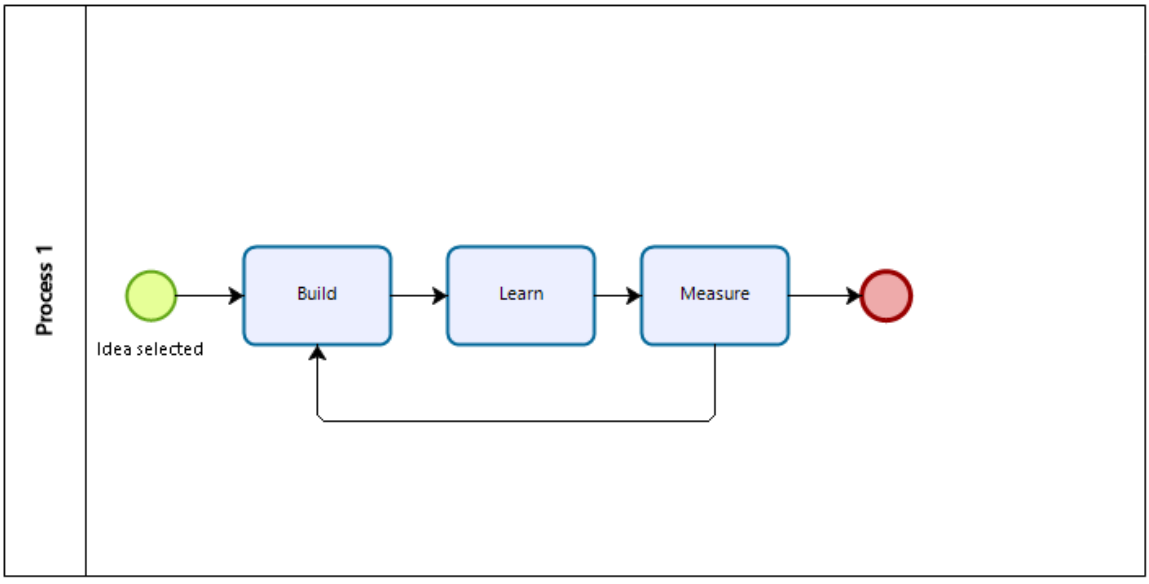

Figure 16: Prototyping sub-process

Each of the stages of the general process and subprocesses require detailing of the *main purpose*, the *information flow type*, *techniques* and their corresponding *structures* and additional *description details* for maximum grasp of the mind set required in each stage.

4.3.2 Phase detailing

Phase 1: Challenge

Main purpose: Find the real problem

Information flow type: Externalization

Techniques	Structures
The 5 Whys	Challenge sheet
Cause-and-effect	Fishbone Diagram

Table 2: Techniques and structures for phase 1

Description details:

- Understand customer needs
- Find the right starting point
- Put knowledge into the table
- This external knowledge is the base for new knowledge
- Gather multiple points of views

And it goes as shown in the representation below.

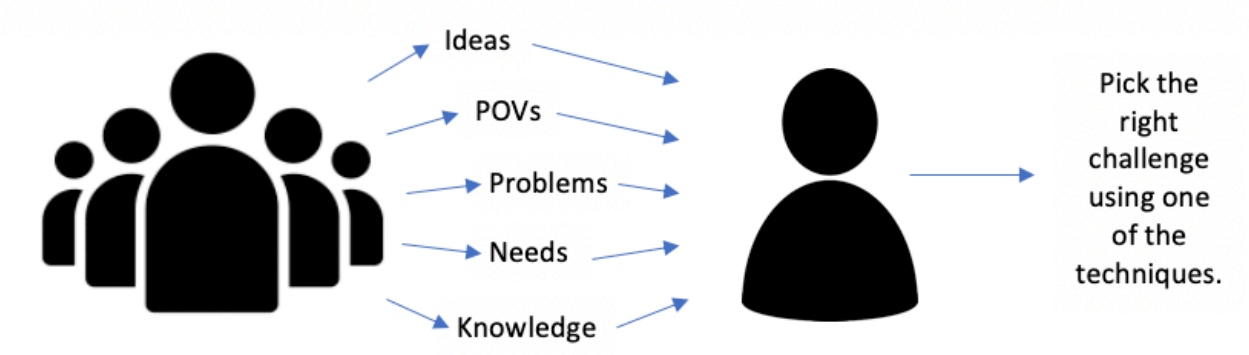

Figure 17: Challenge phase; Steps representation

You can also find the format of the structures in the Annex. This will be the case for all the upcoming structures.

Phase 2: Research

Main purpose: Data collection

Information flow type: Combination

Techniques	Structures
Extreme Users	
Parallel universes	
Costumer journey	Customer Journey Map

Table 3: Techniques and structures for phase 2

Description details:

While collecting data, it is important to feel empathic. To do so you need to observe, engage and immense in their lives. Using the techniques proposed above, you can conceive a *Research Plan* that should include the details on the conduction of the research. You can find a template for the research plan in the **Annex.** Provided in the Annex is also the costumer journey map.

Phase 3: Synthesis

Main purpose: Finding insights

Information flow type: Internalization

Techniques	Structures
Create a Persona	Persona Profile
Journey Mapping	Customer Journey Map
Mind Mapping	

Table 4: Techniques and structures for phase 3

Description details:

In order to find the insights, you need to gather all the external knowledge previously collected in the research phase and then analyze then through the above suggested techniques and finally, organize the results into *workarounds, adaptations, guilty pleasures and surprises*. All the structures provided for this phase are to be found in the Annex

Phase 4: Ideation

Main purpose: Idea generation and selection

Information flow type: Socialization

Techniques	Structures
How might we?	
Clustering	Affinity Storing
Feedback Grid	Feedback Grid
Bingo	
Post-it Voting	

Table 5: Techniques and structures for phase 4

Description details:

Some of the techniques used in this phase are supporting the idea generation process, whilst some of them are supporting the selection process. Whilst going through this phase, a free spirit, unbothered with any constraint is highly recommended for a successful execution.

Phase 5: Prototyping

Main purpose: Visual representation

Information flow type: Externalization

Techniques	Structures
Build, Learn, Measure, Iterate	BLMI

Table 6: Techniques and structures for phase 5

Description details:

The idea is to build any kind of prototype (Paper, model, digital) keeping in mind that you are testing the functionalities and not the aesthetics. Use the BLMI to construct the right prototype.

Phase 6: testing

Main purpose: Feedback

Information flow type: Combination

Techniques	Structures
Feedback Grid	Feedback Grid

Table 7: Techniques and structures for phase 6

Description details:

The focus of this phase is to combine people's feedback and iterate our solution. The technique that can be used here is the same that we used in the ideation phase, since the purpose is the same.

Phase 7: Define

Main purpose: Pinpoint the final prototype

Information flow type: Internalization

Description details:

Integrate all past insights. Through all the alterations and past work you would be able to select and define the final solution.

Phase 8: Deliver

Main purpose: Present the final solution

Information flow type: Socialization

Description details:

Presenting the final solution the receiving all kinds of feedback that may or may not lead to reentering the whole spiraled process, depending on the necessity.

4.4 Validation

To give authentication to my conceptual framework I carried out interviews with experts in the field through video calls and I presented to them my framework followed with a set of questions to get a comprehensive feedback.

I received two interesting insights from Claudia Alexandra da Cunha Pernencar Ph.D., researcher at the institute of communication of NOVA, and José Alberto Lopes Costa Ph.D. professor at Instituto Superior de Gestão (ISG) and Universidade Católica Portuguesa.

Doctor Claudia Pernencar is a consulting and research professional with seven years of experience as a digital product designer. Professor José Lopes Costa is a consultant in the areas of Strategy, Innovation, Marketing and the design and development of Business Models, namely in supporting companies and Entrepreneurship Projects, in the traditional and social spheres.

I presented them with my conceptual model and the framework. I started off the presentation with an overview of the thesis and the purpose of it. Then I explained all the details of the phases that are integrated in the model and their implementation in the framework. The end of the presentation included a set of three questions with the drive of congregating feedback. The questions were as follow:

- What do you think of this framework? could it be useful for the enterprises ?
- What is your opinion about the framework itself? (advantages and drawbacks)
- What are your recommendations for improvement?

These were the questions I asked expecting answers grounded on their backgrounds, experiences and knowledge of the field but also their own and personal thoughts.

The first interview was conducted with Doctor Claudia Pernencar. After going through the presentation, I asked the previously mentioned questions, starting with the first one. When I asked Doctor Claudia what does she think of the framework, she stated that it was dense and complex and that she could see that there was a lot of research behind it. She could definitely see the use of it in a company. In fact, when asked the third question related to recommendations, she focused on the fact that it needed to be implemented in a company.

When asked the second question, Claudia thought that the framework was well fitted in specific areas but that it needed more guidance for who is going to work with it. I mentioned the list of different tools and resources provided for each phase of the framework, which made it better. However she still insisted on the further detailing of these tools to fit a specific field, which

brings us back to the recommendation related to the implantation of the framework into a company.
Claudia made additional suggestions related the fields where this framework would fit. She emphasised on the subdivision of the industries and add them to the annex. She also suggested some books to read for a greater perspective on the matter.

The second interview was conducted with professor José Lopes Costa, we went through the same presentation that gives an overview over my framework and when I got the questions section, the professor started expressing his thought. In answering the first question he expressed the fact that it was very interesting and promising as a framework and for the field. He acknowledged the fact it would help for a fast changing world. He also says that the framework is very useful for companies, especially at this time where creativity and innovation will play a very important role in defining and implementing competitive advantage.
As Claudia expressed in her interview, José expressed the same opinion regarding the second question. He conveyed his thoughts about the complexity of the model, since it included the details of how the information flows behind the scenes in a design thinking process. Saying that the framework will benefit the people who decide to work with it stay on the right path and yield higher profits. However he also stated the need for examples in specific industries or areas of business to understand better the adaptability of the framework.
To this end, José suggested mini case studies that would be focused on the different industries to keep the generality idea behind this framework but at the same time guiding better the users through a complex model.

4.5 Discussion

Based on the interviews mentioned in the previous section and the literature review, we can discuss in this segment the results of the thesis. Namely through the utility of the said framework, the advantages that it would bring but also the drawbacks that come with it and last but not least, the recommendations for improvements.

Regarding the function of the framework, as it is stated in the literature review, organisational creativity is of great benefit for companies in the near future because of the fast changing environment. This framework represents just that.
A framework like this consumes the untapped potential of the resources of the company. In consequence, generates additional competitive advantage.

It was considered by both of the interviewed experts as complex and thus useful from a general point of view. However, it is also known that no matter how encompassing a model can be, the detailing of it is more needed for the application. This particular framework relays on a lot of details in its core that services the companies from different industries to work on it. Yet, real life applications are still very important for the righteous of implementations.

On an other hand, it was established that this framework has many advantages that can profit the companies. Based on the learnings of the literature review, it was revealed that working with such frameworks help understand better the process which induce a better execution of the process itself and results in higher profits. Additionally, the experts from the interviews pinpointed that because of the depth of the information in the model, it could fit any specific area. Their thoughts are linked with the information found in the literature review. Meaning that they see the complexity and think that no matter how different and unique or specific a company's internal processes are, a deeper understanding of how the information flows and the link between that and the design processes will insure the best results after the implementation of my proposed framework. Yet, this view has a drawback. On the big picture, this model covers all the necessities, still, it needs more guidance on the adaptability perspective. One of the interviewees, determines the this downside as an adaptability issue for specific industries or areas of businesses and talks about setting examples as a way of surpassing this issue. Which brings us to the next point of discussion of this section.

To fix the drawback that this model propose, the first expert, Claudia, suggested a subdivision of the industries as a way to study more disciplines into their core, understand their patterns and work to integrate the model for each studied industry. Including all the needed forms and documents that would be required for the right implementation of the framework. Dr. Claudia recommended books that would help work on this issue.
As a second suggestion, Dr. José Lopes Costa, proposes to use mini case studies as way to show exactly how the application of the model should go in the different fields. By using this method, I would be able to keep the generality aspect of the model but at the same time, I could guide the user though the complexities of the framework.
Both suggestions, have a common point of practice on the specificities, yet they are two differently elegant keys to the same issue. They both propose a kind of application of on a narrower perspective to touch ever further the details that would entail a real life realization of the framework on a project.

5 Conclusion

In conclusion, this work has got to its goal. This work project achieved its objectives as it is stated in the validation section. With the implementation of this framework, a company can yield a higher competitive advantage than its competitors.

5.1 Synthesis of the developed work

At the start of this work project, a thorough research was made on the various topics related to the main topic of the thesis such as : organisational competitivity, creativity and creative thinking, organisational innovation, organisational creativity as a strategy and knowledge management. This researched served as a background for the development of a framework of a superposed strategy for organisational creativity and knowledge management. This framework was later validated by two experts in the fields of design and innovation thought their interviews.

5.2 Limitations

Unfortunately, throughout this work project, there were some limitation to the extent of the desirable work.

The biggest limitation that I face was caused by the sanitary crisis that the world suffered this past months and is still suffering. This fact prevented the possibility of real life applications but at the same time also made a huge dente on other factor, which brings me to my second limitation.

Time, was a big constraint on this project that was mainly caused by the covid-19 situation. This limited my possibilities in a world that is trying to adapt to whole new abnormal life style. But there was another reason why time was a scares resource, and that brings me to my third limitation.

This thesis topic is very wide for its purpose. This subject entails much more research and more detailing the solutions than what a master thesis can comprise.

5.3 Recommendations for future works

As it was mentioned in the previous paragraph related to the limitations that this project undergone, it would be highly recommended to approach a smaller section of the project for a master thesis.

Moreover, this project also encountered the issue related to the covid-19 situation that engendered the most important recommendations from the experts in validation section. Their recommendations entails the real life implementation of the framework. And with that, hopefully future works would have a normal world to work in.

At last, it is highly recommended to use more specific to the industries models or make a show of the implementation of a general model in scenarios of different backgrounds and fields.

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Annexes

These annexes contains the different structures referred to in the framework section of the paper. They are suggestion of the different possibilities of tools to use depending on the industry of the company implementing the model.

ANNEX 1

In this annex, is the structure of the challenge sheet referred to in this paper in the first phase of the process.

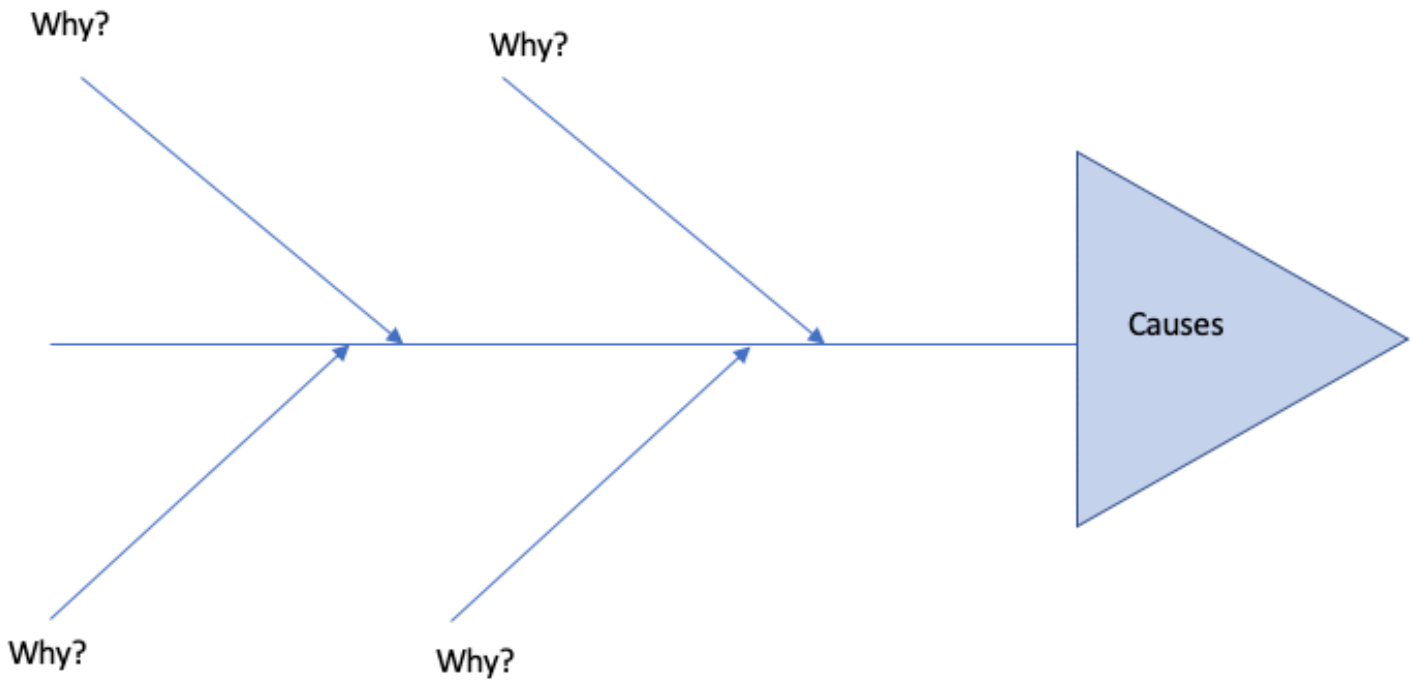
Challenge sheet

	Problem description
Why ?	
Why ?	
Why ?	
Why ?	
Why ?	
Root cause 1	
Root cause 2	
Root cause 3	
Root cause 4	
Root cause 5	

ANNEX 2

In this annex, is the structure of the fishbone diagram referred to in this paper in the first phase of the process.

Fishbone Diagram



ANNEX 3

In this annex, is the structure of the research plan referred to in this paper in the second phase of the process.

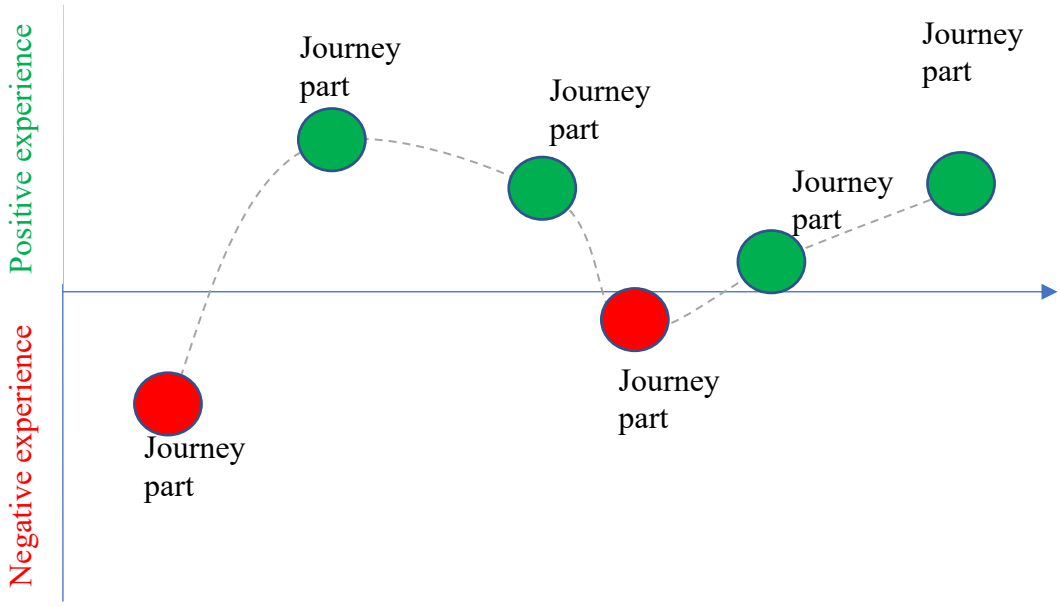
Research Plan

	Objectives	Target	Techniques	Materials	Responsibility	Timeline
1						
2						
3						
…						

ANNEX 4

In this annex, is the structure of the customer journey map referred to in this paper in the second phase of the process.

Customer Journey Map



ANNEX 5

In this annex, is the structure of the Persona Profile referred to in this paper in the third phase of the process.

Persona Profile

<table>
<tr><td>Picture</td><td>Interests:</td><td>Powers:</td></tr>
<tr><td>Name:

Profession:</td><td>Needs:</td><td>Behaviors:</td></tr>
<tr><td>Age:

Short story:</td><td>Values:</td><td>Aspirations:</td></tr>
</table>

ANNEX 6

In this annex, is the structure of the Customer Journey Map referred to in this paper in the third phase of the process.

Customer Journey Map

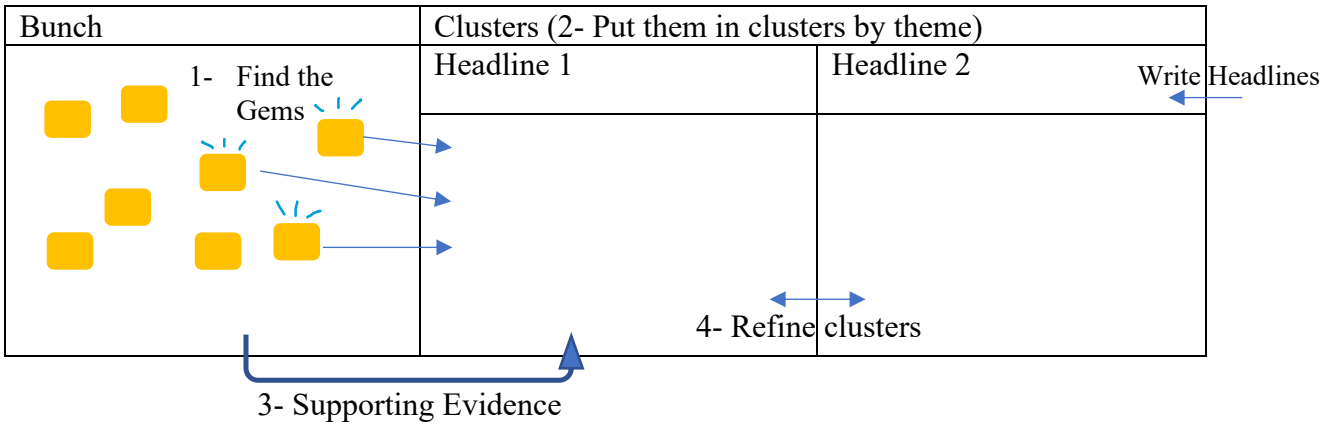
Stage

Actions				
Emotions				
Touch points				
Feelings				
Visible Experience				
Invisible Experience				
Opportunities				

ANNEX 7

In this annex, is the structure of the Affinity Storing referred to in this paper in the fourth phase of the process.

Affinity Storing



ANNEX 8

In this annex, is the structure of the Feedback Grid referred to in this paper in the fourth and sixth phase of the process.

Feedback Grid

Things I liked most	Things that could be improved
Things I don't understand	New ideas to consider

ANNEX 9

In this annex, is the structure of the BLMI referred to in this paper in the fifth phase of the process.

BLMI

Questions	**Action**
What do you want to test ?	Build
What Kind of prototype?	
How are you presenting?	
What did you learn ?	Learn
How to evaluate learnings ?	Measure