

POLITECNICO DI TORINO

Corso di Laurea Magistrale
in Ingegneria Gestionale LM-31

Tesi di Laurea Magistrale

Using Enterprise Social Platforms in the Innovation Process



Relatori
Prof. Luigi Buzzacchi
Prof. Kathrin Kirchner

Candidato
Simone Zanni

Anno Accademico 2019/2020

Abstract

In environments where companies are increasingly quick to bring new products or services to the market, an internal communication tool capable of supporting this speed is becoming a popular practice to cope with competitors. Enterprise Social Platforms (ESP) are highly interactive and allow individual users and communities to share, co-create, discuss, and modify user generated content. This content can build the basis for the three different stages of an innovation process that can be defined as (1) ideation, (2) development/test and (3) launch phase.

Studies investigating ESP application in the context of innovation are still scarce. This study aims to investigate how ESPs influence innovation in order to be able to answer the questions: In which stages of an innovation process ESPs are used? What are the challenges using the platform for innovation purposes? How these challenges can be overcome?

The research applies a qualitative approach based on 9 interviews with managers from companies all of the world, that in addition to using ESPs have a strong innovative spirit. The information gathering lasted two months between November and December 2019.

The results show that six out of the nine interviewed companies use the platform for project management purposes throughout the innovation process. Three companies apply it to build a community in which employees can share best practices, interesting articles and addressing questions to increase the knowledge of the company during the ideation stage. Additionally, three interviewees talked about ESPs during the development/test stage. The main barriers were named as additional effort, fear of change and missing skills to use the ESP.

In order to overcome these barriers, the research proposes four steps to manage the platform in the ideation stage in a company: (1) to create online communities with clear innovation purposes, (2) to motivate employees to join and contribute to a community, (3) to nominate community ambassadors to manage each group and (4) to involve top management in the conversations. In future research, it should be investigated which types of innovation ESPs can support and how a strategic plan for implementing a platform for innovation looks like.

Keywords:

Enterprise Social Platform, Innovation, Knowledge Management

Summary

- Abstract I
- Summary II
- List of figures V
- List of tables VII
- List of Acronyms VIII
- 1. Introduction 9
- 2. Literature review 11
 - 2.1. Knowledge 11
 - 2.1.1. Features and characteristics of knowledge 11
 - 2.1.2. Types of knowledge 12
 - 2.2. Organizations in the innovation context 13
 - 2.2.1. The evolutionary theory of the firm 13
 - 2.2.2. The theory of dynamic capabilities 18
 - 2.3. The innovation process 20
 - 2.3.1. Stage of the innovation process 20
 - 2.3.2. Actors in innovation the process 21
 - 2.4. Social Media 23
 - 2.4.1. Different types of Social Media 23
 - 2.4.2. Technological trend 24
 - 2.5. Social Media and innovation 27
 - 2.5.1. Types of innovation influenced by Social Media 27
 - 2.5.2. How Social Media can influence the innovation process 28
 - 2.5.3. Capabilities for Social Media use in the innovation process 30
 - 2.6. Enterprise Social Platform 32
 - 2.6.1. Definition of Enterprise Social Platform 32
 - 2.6.2. Benefits of Enterprise Social Platform 34
 - 2.6.3. Challenges and Barriers 38

3. The Research	43
3.1. Research Question and Sub-Research Questions	43
3.2. Research Method	46
3.2.1. Research Method: a Qualitative Research	47
3.2.2. Type of interview	47
3.2.3. Identify companies, database creation and first contact.....	48
3.3. Interview Questions	49
3.4. Qualitative Data Analysis.....	52
3.4.1. Actors in the innovation process.....	54
3.4.2. Types of innovation influenced by Social Media.....	56
3.4.3. Social Media tools for innovation.....	57
3.4.4. Enterprise Social Platform in different stages of the innovation process.....	57
3.4.5. Can Enterprise Social Platform facilitate innovation?	59
3.4.6. Challenges and barriers in adopting ESPs in innovation management.....	59
3.4.7. The manager role	61
4. Discussion	63
5. Conclusions.....	67
5.1. Summary of findings.....	67
5.2. Implications	68
5.2.1. Implications for research.....	68
5.2.2. Managerial implications	68
5.3. Research limitations and future work.....	68
5.3.1. Research limitations	69
5.3.2. Future work	69
Appendices	70
Appendices 1	70
Appendices 2	72
Appendices 3	73
Appendices 4	74
Appendices 5	76
Appendices 6	77

Summary

Appendices 7 78

Bibliography..... 81

Acknowledgment 85

List of figures

Figure 2.1: Knowledge features (Cantamessa & Montagna, 2016).	12
Figure 2.2: Resources economic value added.....	14
Figure 2.3: Shareholders' economic return.....	14
Figure 2.4: The firm as a “bundle of routines” (Cantamessa & Montagna, 2016).	15
Figure 2.5: Organizational learning (Huber, 1991).....	16
Figure 2.6: The phenomenon of the competency trap (Cantamessa & Montagna, 2016).....	17
Figure 2.7: The evolution of corporate competencies (Cantamessa & Montagna, 2016).	19
Figure 2.8: Stage-Gate process (Cooper, 2008).	20
Figure 2.9: The constituent elements of a technological paradigm (Cantamessa & Montagna, 2016).....	22
Figure 2.10: Patterns of social-technology usage, % growth rate by pattern, dashed values estimated (Harrysson, Schoder, & Tavakoli, 2016).....	25
Figure 2.11: Adoption of social technologies (Harrysson, Schoder, & Tavakoli, 2016).	26
Figure 2.12: Type of use (Harrysson, Schoder, & Tavakoli, 2016).	26
Figure 2.13: Benefits from adoption (Harrysson, Schoder, & Tavakoli, 2016).	27
Figure 2.14: Stage-Gate process divided into the front end of innovation, development and commercialization (Cooper, 2008).....	29
Figure 2.15: Framework of key capabilities for Social Media use in the innovation process (Muninger, Hammedi, & Mahr, 2019).	31
Figure 2.16: Legend of the framework of key capabilities for Social Media use in the innovation process (Muninger, Hammedi, & Mahr, 2019).....	31
Figure 2.17: Definition of Enterprise Social Platform (Leonardi, Huysman, & Steinfield, 2013).	33
Figure 2.18: Companies that offer the Enterprise Social Platform service.....	34

List of figures

Figure 2.19: Social Media Business Value Compass ideated by (Kirchner & Razmerita, 2019).
..... 35

Figure 2.20: Qi and Chau's (2018) research model..... 36

Figure 2.21: Results of the study conducted by Qi and Chau (2018)..... 36

Figure 2.22: Enterprise Social Platform benefits..... 38

Figure 2.23: The main challenges and barriers for the use of Social Media in innovation management (Bhimani, Mention, & Barlatier, 2019). 39

Figure 3.1: Four macro-categories of platforms that influence the innovation process (Bhimani, Mention, & Barlatier, 2019)..... 44

Figure 3.2: Gatekeepers' role in technical problem solving (Cantamessa & Montagna, 2016).
..... 55

List of tables

Table 2.1: Forms of knowledge and their features (Cantamessa & Montagna, 2016).....	12
Table 2.2: Patterns of social-technology usage, % growth rate by pattern, dashed values estimated (Harrysson, Schoder, & Tavakoli, 2016).....	25
Table 2.3: Legend of Figure 2.21 (Qi & Chau, 2018).	37
Table 3.1: Example of the database of companies that use Enterprise Social Platform.	48
Table 3.2: Characteristics of interviewed companies.	53

List of Acronyms

List of Acronyms

ESP = Enterprise Social Platform

SM = Social Media

NPD = New Product Development

RBV=Resource Based View

RQ = Research Question

SRQ = Sub Research Question

IQ=Interview Question

R&D=Research and Development

RACI=Responsibility, Accountability, Control and Information

1. Introduction

In recent years, firms in almost all industries have conducted several initiatives to explore new digital technologies and to exploit their benefits. The exploitation and integration of digital technologies often affect large parts of companies and even go beyond their borders, by impacting products, business processes, sales channels, and supply chains. Potential benefits of digitization are manifold and include increases in sales or productivity, innovations in value creation, as well as novel forms of interaction (Matt, Hess, & Benlian, 2015). The use of new, fast and frequently changing technology to solve problems is called Digital Transformation. As a part of their Digital Transformation, companies are increasingly adopting Enterprise Social Platforms in order to streamline the diversity of the knowledge work process, in particular communication and collaboration (Kirchner & Razmerita, 2019).

Enterprise Social Platforms are Social Media that allow members of an organization to connect, share, develop, and morph innovation ideas independent of geographical, temporal, structural, or organizational dispersion. Moreover, Enterprise Social Platforms lead to new organizational routines in the innovation process (Recker, Malsbender, & Kohlborn, 2016) that can be defined as (1) ideation, (2) development/test and (3) launch phase, according to the three stage division of the Stage-Gate model by Cooper (2008). Organizational routines are the actions that firms enact to activate human resources and extract a contribution from them, based on the knowledge they possess, thus progressively building up economic value (Cantamessa & Montagna, 2016). Companies have to improve their knowledge base if they want to innovate. This improvement is called organizational learning (Nelson & Winter, 2002). Also, knowledge sharing may be a key driver of innovation, as it encourages decisions to apply knowledge into products, services and organizational designs (Rahman, Nuwangi, & Singh, 2020). Enterprise Social Platform usage has a positive and direct effect on organizational learning and encourages employees to share knowledge within the organization (Qi & Chau, 2018). This means that companies could benefit from an indirect effect from the Enterprise Social Platform to become more innovative. In fact, the Enterprise Social Platform has the potential to support the different stages of the innovation process (Herzog & Steinhuser, 2016).

The stream of literature discussing the application of Enterprise Social Platforms in the innovation process is growing ((Rahman, Nuwangi, & Singh, 2020), (Herzog & Steinhuser, 2016), and (Recker, Malsbender, & Kohlborn, 2016)). To further enrich the literature, this Master Thesis investigates how Enterprise Social Platforms improve innovation within a company, focusing on (1) which stages of the innovation process are influenced by Enterprise Social Platforms (2) which challenges and barriers managers have to face adopting this technology and (3) how they can overcome them.

Introduction

So, the research question of this Master Thesis is:

RQ: "How do companies become more innovative using the Enterprise Social Platform?"

In order to be able to answer the research question, a set of sub-research questions were defined to structure and guide the data collection and analysis. Therefore a qualitative study was conducted, based on interviews with 9 companies.

The Master Thesis is divided into five parts: the first part is the introduction. The second is a literature review about Enterprise Social Platforms in the innovation process, to define the state of the art in this field of research. The third part concerns the research. It starts with the description of each sub-research question, it continues with the methodology chosen to collect data and it ends with the data analysis. The fourth part compares the results obtained from the qualitative data analysis and the literature. The last part of the Master Thesis outlines the conclusions of the research, indicates its implications for managers and researchers and finally describes its limitations and indicates future work.

2. Literature review

The second chapter of the Master Thesis consists of the literature review about Enterprise Social Platforms in the innovation process. It defines the state of the art in this field of research. It begins with the definition of knowledge, because innovation and knowledge are intimately connected. This connection derives from the ability of firms and individuals to innovate thanks to the knowledge they possess, while the process of innovation they engaged in can influence their knowledge (Cantamessa & Montagna, 2016). This chapter continues with the contextualization of firms and organizations in the innovation environment. Then, it explains the innovation process and the actors, both internal and external, involved in. Subsequently, it describes Social Media in general and their application in the innovation process. Finally, the chapter summarizes and discusses the findings of the literature on Enterprise Social Platforms.

2.1. Knowledge

The following paragraph is an overview of features, characteristics and types of knowledge.

2.1.1. Features and characteristics of knowledge

According to Cantamessa and Montagna (2016), from an economic and managerial perspective, four main features characterize the nature of knowledge.

First of all, knowledge could be incorporated in people, which is in possession of a specific human being, or in capital, which is written in a book or a computer algorithm for example. Secondly, it could be codifiable, if there were a code or a language to represent it, or non-codifiable, if it could not possibly represent it. Thirdly, knowledge could be explicit when it is easy to articulate and express it or tacit when it needs a lengthy process of observation and apprenticeship to transfer it to another person. Sometimes someone is not aware of the knowledge he possesses. Finally, it could be public as the information in a patent because anyone can access it at any time and use it as information or private as the invention itself. After all, the same patent excludes anyone but the assignee of the patent (or its licensees) from the right of making any commercial use of it.

According to Cantamessa and Montagna (2016), Figure 2.1 shows knowledge features.

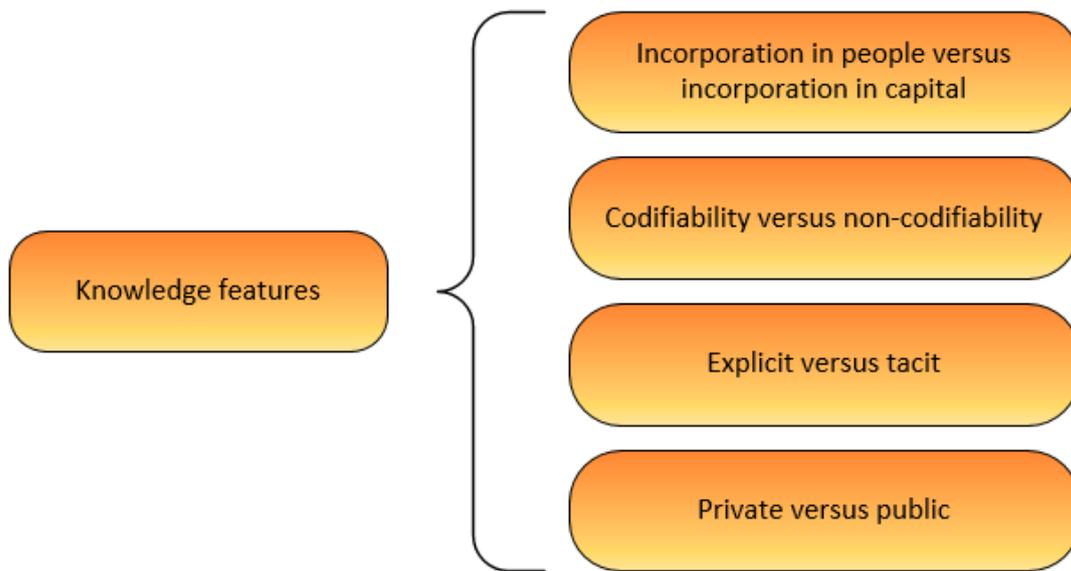


Figure 2.1: Knowledge features (Cantamessa & Montagna, 2016).

2.1.2. Types of knowledge

It is now possible to describe four main forms of knowledge (Cantamessa & Montagna, 2016):

The “know that” is the factual knowledge that is easy to represent and structure because it is the basic form of knowledge. It is codifiable, explicit and simple to incorporate in capital. The “know why” is the casual knowledge that is concerned with understanding the reasons behind facts. It is relatively easy to codify and to incorporate in capital. Instead, the “know how” is the procedural knowledge which is the higher level of knowledge and derives from a mixture of schooling, experiences and innate talent. It is typically tacit, difficult to codify and incorporated in people. At least, the “know who” is the positional knowledge which is the ability to know where knowledge is stored or who possesses it. It is easy to codify and incorporate in capital.

According to Cantamessa and Montagna (2016), Table 2.1 shows the main forms of knowledge with their features and characteristics.

Table 2.1: Forms of knowledge and their features (Cantamessa & Montagna, 2016).

Type of knowledge	Knowledge features
“Know that”	Codifiable Explicit Incorporated in capital

“Know why”	Easily codifiable Easily to Incorporate in capital
“Know how”	Tacit Hardly codifiable Incorporated in people
“Know who”	Easily codifiable Incorporated in capital

Once the characteristics and the different forms of knowledge are identified, it is now possible to introduce organizations in the innovation context.

2.2. Organizations in the innovation context

To introduce the research it is necessary to understand what are the characteristics that define a company in relation to the innovation process.

The neoclassical vision of the firm is based on perfect rationality and full information in an environment where companies observe market demands, choose production factors (capital and labor) and define a production function. This vision cannot be applied in an innovation context because of clashes with the hypothesis of perfect rationality and full information.

For this purpose, it is useful to resume the evolutionary theory of the firm written by Nelson and Winter (2002), which examined the details of the individual behavior of companies in the short term and the industrial dynamics to the historical evolution of institutions and technologies. This behavior is characterized by competences and routines that are shaped by learning and selection. In the second part of this paragraph, it is described how companies gain a competitive advantage, through an analysis of the theory of dynamic capabilities of Teece, Pisano and Shuen (2008), according to which companies manage to capture their own capabilities through innovation management. The overall view of these two theories allows us to have a better understanding of the innovative environment.

2.2.1. The evolutionary theory of the firm

The evolutionary theory of the firm by Nelson and Winter (2002) allows to answer the question “why are firms different?” in an economic environment affected by uncertainty and turbulence. In their research, a firm can be defined as “an organized association of complementary resources, where the organization is viewed as a bundle of organizational routines.”

Literature review

Defining more in detail, complementary resources are intended as human resources or physical assets, acquired at a cost, which create economic added value greater than the sum of the economic values that would be separately created by each (Figure 2.2).

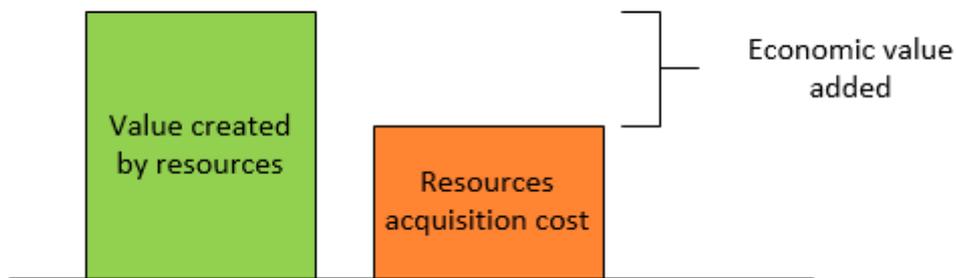


Figure 2.2: Resources economic value added.

Organized association means that the firm is able to put these resources to work through a bundle of organizational routines. They are able to generate an economic value that is sufficient to cover the fixed costs of the organization and to provide economic returns to its shareholders (Figure 2.3). To reach a given objective, it is necessary to allocate resources and perform organizational routines to activate and extract a contribution from these actions. The aim is to build a progressive economic value based on the knowledge that human resources own.

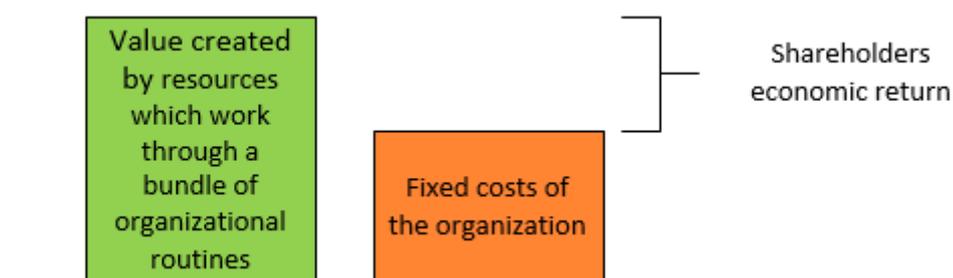


Figure 2.3: Shareholders' economic return.

Figure 2.4, shows an example of a company with four employees. They individually own the knowledge elements represented in the rectangles. The knowledge "X" is part of corporate knowledge, not because the company directly "knows" "X", but because a routine is in place, that

allows the firm to use “X” being provided by its employees. Conversely, we cannot say “M” or “Z” to be part of the firm’s “know how”, since no routine has been set up for using these knowledge elements (Cantamessa & Montagna, 2016).

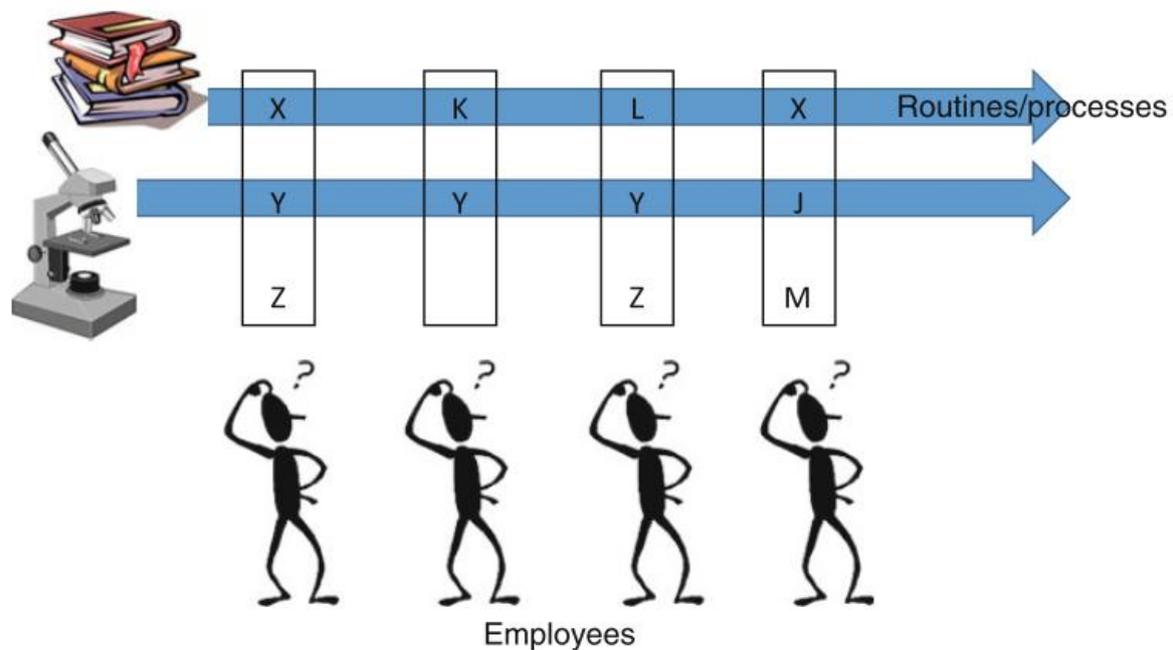


Figure 2.4: The firm as a “bundle of routines” (Cantamessa & Montagna, 2016).

The search process of routines emerges by trial and error even if this will not lead to an optimal solution. This is because there can be nothing like an optimal routine for two reasons. The first one is that the iterative process with which a firm looks for new ways of doing things will slow down when the performance reached is “good enough”. The second reason is that it is impossible to define the concept of optimality in this context.

Routines represent an effective, efficient, and predictable way of working, in a given environment and in a given time. In fact, if the situation changes, companies have to adapt their routines and they could find it hard to change their behavior if the environment is significantly changed (organizational inertia) (Cantamessa & Montagna, 2016). The evolutionary theory of the firm written by Nelson and Winter (2002) provides considerable explanatory power for interpreting a number of phenomena that characterize corporate life. Managers are actors who are heavily involved in the organization, trying to understand the way it works and the environment it lives in. In fact, firms tend to self-evolve and are not designed “from the top down” because managers are not lofty strategists and decision-makers who live somewhat separately from their firms. To make the company more competitive in a changing environment their role is to modify the resources and the routines. Doing so companies evolve according to what they were in the past and the

Literature review

state in which it will be in the future will depend on the present and the challenges they are facing. This means that firms will be path-dependent (Kogut & Zander, 1992). Thus, companies are often not able to change much and quickly but will tend to make small changes at a time because of organizational inertia and path dependency.

According to the evolutionary theory of the firm by Nelson and Winter (2002), among the changes that occurred by path dependency, one is the change of the knowledge base, called organizational learning. Organizational learning depends on the absorptive capacity (Cohen & Levinthal, 1990), which is the ability of the firm to gain external knowledge. The presence of gatekeepers can influence the absorptive capacity. “Gatekeepers are employees who are particularly apt in accessing knowledge that exists outside the firm and in interpreting it in a way that is of practical use” (Cantamessa & Montagna, 2016). There are four principal types of organizational learning according to Huber (1991) (Figure 2.5). Innate learning is the knowledge base at the beginning of organization life and it is brought by its founders. Experiential learning is the typical process by which firms modify their routines thanks to “learning by doing” and “learning by failing”, by following a trial and error mechanism, and/or performing in-house Research and Development (R&D) activities. Vicarious learning is the knowledge that came from an external source such as advice provided by a consultant, a book, etc.. Learning by grafting is the acquisition of new by hiring an individual or by acquiring another organization.

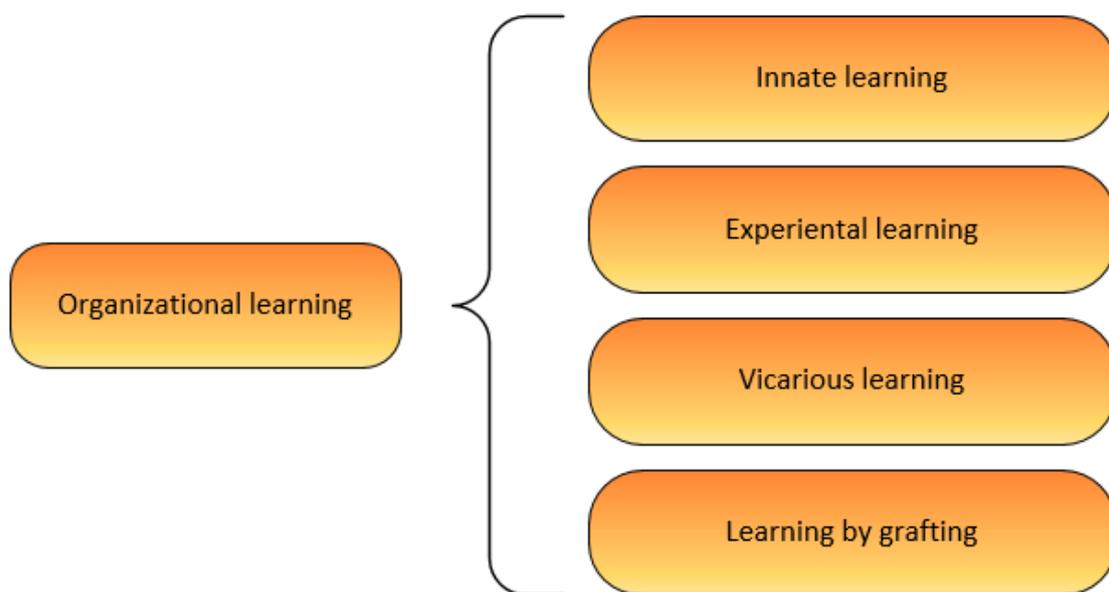


Figure 2.5: Organizational learning (Huber, 1991).

Finally, the risk of falling into a competency trap, which is the phenomenon that leads the company to no longer invest in exploration because it brings less benefit than exploitation (Zhou & Wu, 2010), becomes even greater for firms that actively involved in knowledge management practices aimed at identifying best practices and codifying them. In fact, the firm might end up codifying and formalizing practices that are only moderately successful, or might even be damaging, should the environment change. Figure 2.6 shows a chart explaining the competency trap.

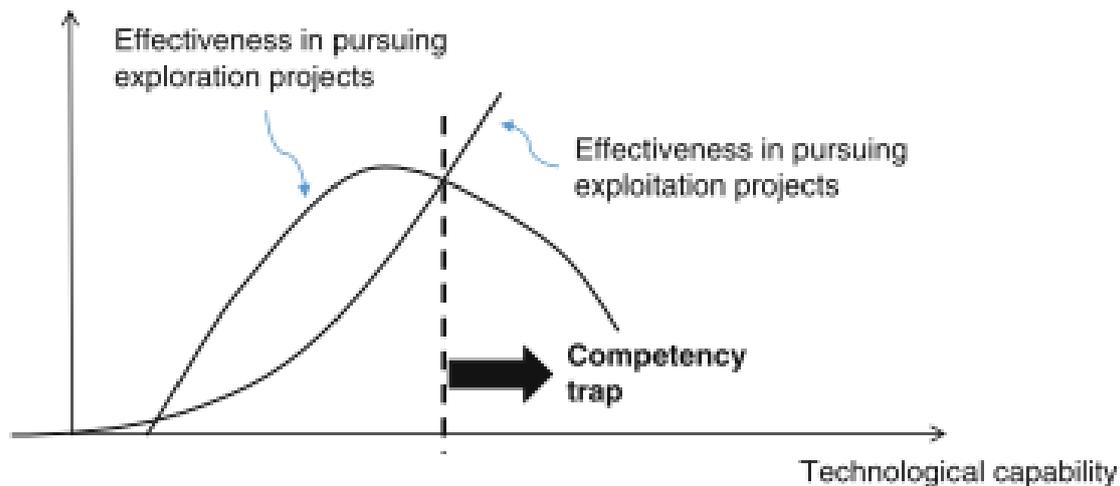


Figure 2.6: The phenomenon of the competency trap (Cantamessa & Montagna, 2016).

As mentioned above firms evolve without big jump but little by little, step by step so introducing new knowledge is not a simple addition of new information, it is more complex like the creation of new connections between previously acquired elements. Therefore, the theory also explained that firms will all be different from one another because organizational routines are very hard to translate, transfer and imitate and they evolve in a path-dependent way. Routines create an environment where different companies live. This helps to understand that competitive advantage of a firm is not only due to managers having superior decision-making skills, but comes mainly from its different history, and its sustainability over time is explained by the hard imitation of organizational routines.

So the role of managers, to make companies more innovative, is just to change resources and routines? In reality, this is only one of the two parts that explain the environment of organizations in an innovative context.

2.2.2. The theory of dynamic capabilities

The second part is related to innovation management. According to the purpose of the research, it is possible to refer to the dynamic capabilities framework by Teece, Pisano and Shuen (2008) which analyzes the sources and methods of wealth creation and capture by private enterprise operating in environments of rapid technological change. According to the authors, the competitive advantage of firms is based on coordinating and combining process, shaped by the firm's specific asset positions and the path dependency. It depends on the stability of market demand, and the ease of replicability, which is the internal expansion, and imitability, which is the replication by competitors.

To understand the theory of dynamic capabilities it is necessary to introduce the Resource-Based View (RBV). According to RBV companies are defined as a collection of assets that operate together thanks to bundles of routines which are called organizational competencies. Among the many competencies that any firm possesses, a subset of them, core competencies, will have the potential of leading to strategic differences and creating competitive advantage (Prahalad & Hamel, 1990). Understanding which competencies are core and ensuring their continuous growth, strategic decision-making consists in using them to enter markets in which extra profits may be achieved. Once understand this, it is possible to define dynamic capabilities as higher-level competencies that a company uses to adapt, develop, and re-configure the existing portfolio of resources and competencies. A capability is a competence whose strategic value.

This approach is based on that firm must recognize its core capabilities and then find markets in which they may profitably be exploited. This is especially true in many environments where competition is very intense and industry dynamics are very fast to have a long term perspective. Firms need to remain faithful to their core capabilities and rather gradually shift their attention from one industry to another one. This means that the competitive advantage is temporary (D'Aveni, Dagnino, & Smith, 2010). The trade-off among defending the current competitive advantage and the competitive advantage that can be generated in the future is the base of this theory. The first issue is the cannibalization of currently profitable business activity by a future one. The second one is associated with path dependency and relatedness. The last one has to do with the possibility that a firm becomes unable to conceive any strategy at all.

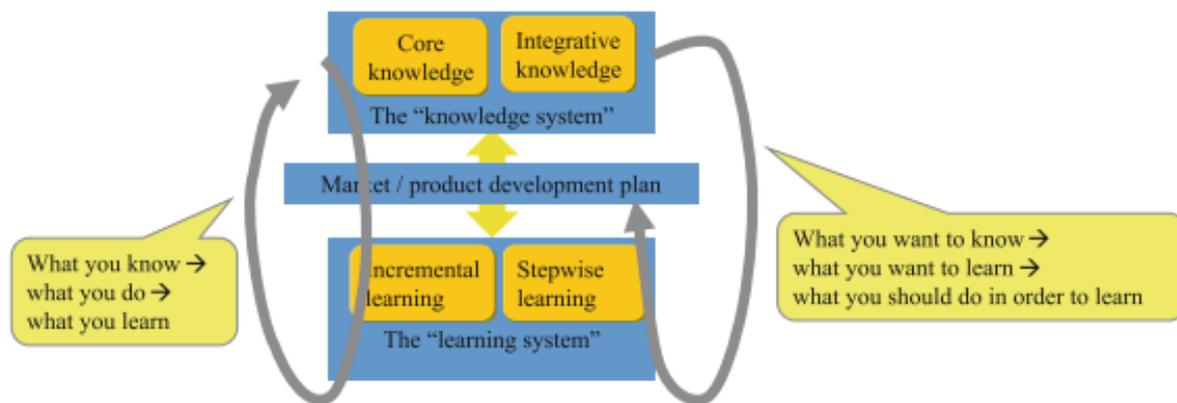


Figure 2.7: The evolution of corporate competencies (Cantamessa & Montagna, 2016).

According to the theory of dynamic capabilities, it is possible to define an innovation strategy that deals with two main paths that exploit two types of the portfolio in a complementary manner, one of the competences and another of product and market development projects. Following the first, the company exploits the competences it possesses passively, defining a portfolio of product and market development projects. Thanks to learning, the company will find itself in the future with an updated knowledge base that will become the basis for a new plan. Following the latter, the company proactively explores new fields, focusing on the competencies needed in the future. Learning activities will be gradual without having an immediate impact on the portfolio of current product and market development projects. Practically the dynamic capabilities approach consists of working on current competencies and building new ones that fit the future scenario, thus allowing proactive moves in the competitive environment (Cantamessa & Montagna, 2016).

According to Cantamessa and Montagna (2016) and Helfat and Raubitschek (2000), Figure 2.7 shows a synthesis of the evolution of corporate competencies.

This paragraph has shown how the turbulent environment influences companies during the innovation process. The choices of the decision-makers are of vital importance for the continuation of the company. They must keep in mind that the company evolves in a path-dependent way, with an absorptive capacity that is strongly dependent on gatekeepers. Thus innovation can take place through organizational learning with the risk of a competency trap. Decisions can be made taking into account the core capabilities of the company, thus obtaining a temporary advantage over competitors. These two theories, the evolutionary theory of the firm and the theory of dynamic capabilities, when viewed together, are particularly suitable for giving an overview of the context in which innovative organizations live.

2.3. The innovation process

The aim of this paragraph is to define the innovation process. The first part describes the innovation Stage-Gate model by (Cooper, 2008) and the second part is about different actors which work for innovation.

2.3.1. Stage of the innovation process

According to Cooper (2008), innovation develops through a Stage-Gate process, which is a conceptual and operational map for moving new product projects from idea to launch and beyond a blueprint for managing the New Product Development (NPD) process to improve effectiveness and efficiency. The innovation process can be visualized as a series of stages and each stage is composed of a set of required or recommended best-practice activities needed to progress the project to the next gate or decision point.

As Figure 2.8 shows, the stages are ideation, business case, development, testing and launch.

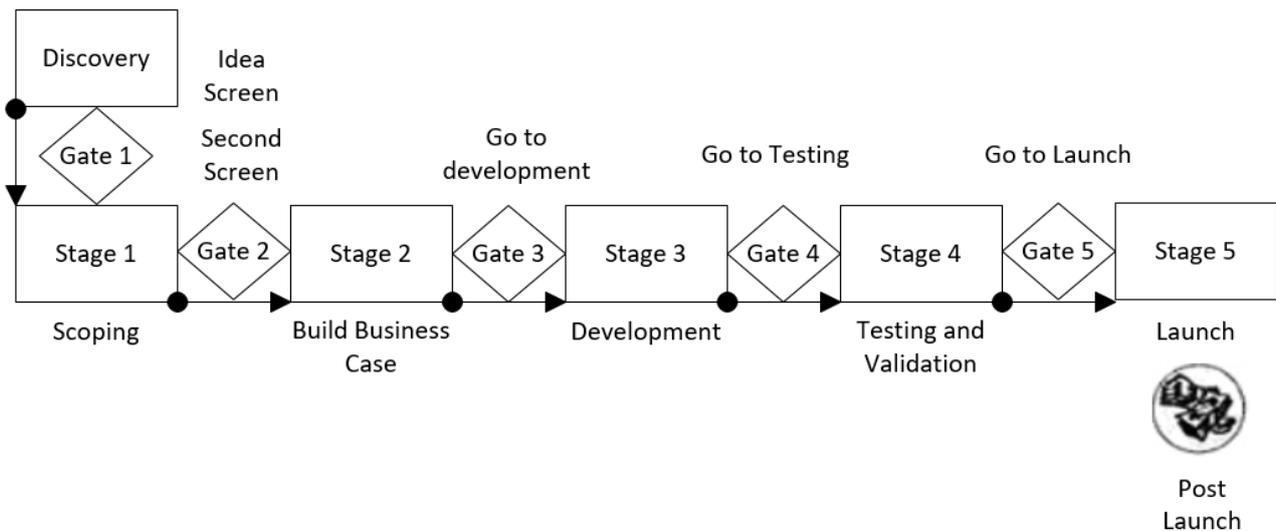


Figure 2.8: Stage-Gate process (Cooper, 2008).

From the beginning, the idea creation phase is followed by the building of a business case that can support the idea. Then, the development in which the ideas are in expansion and advancement. The test phase is needed to understand if the new product is ready for the launch or if it is necessary to develop it more. Finally, the launch of the new product in the market.

After each stage, decisions are made at the gate whether or not to proceed: a discovered idea may not be scoped appropriately; a business case might not be strong enough, product development might fail, testing may reveal significant faults, and finally the launch may be unsuccessful.

2.3.2. Actors in innovation the process

In this process, the companies are not alone, in fact, is possible to view innovation as a result of a bundle of ideas, information, technology, codified knowledge and know-how. This implies that it generally arises from a network of actors and relationships (Conway & Steward, 1998). Engaging internal departments and external ecosystems should help firms to generate, develop and integrate knowledge in the process of innovation (Bhimani, Mention, & Barlatier, 2019). Thus, firms open their value creation processes collaborating with various stakeholders, including customers, suppliers, and employees (Muninger, Hammedi, & Mahr, 2019). In addition, it is possible to identify other external actors involved in this collaboration such as competitors, brand ambassadors, universities, public organizations, governments, etc. Figure 2.9 shows the constituent elements of innovation, the main seven are described below:

First, Marketing and Research & Development employees are the most important drivers for innovation. Their collaboration, characterized by two complementary roles, ensures that the company is able to advance in the innovation process. Marketing has the role of achieving a deep understanding of customer needs and direct Research and Development (R&D) efforts accordingly. R&D must identify promising technology, then, marketing will have the responsibility of turning back to customers and convincing them that the features of the chosen technology meet their needs (Cantamessa & Montagna, 2016). As mentioned above, gatekeepers are also important to drive innovation in companies. Their role is to capture external knowledge and to refer colleagues for correct use. Second, the Marketing department is in close contact with customers to understand what their needs are because an innovation cannot be considered as such if it is not widespread in the market. Customers or users can be engaged also in the ideation stage, for example, My Starbucks idea platform had produced more than 300 ideas from the online community or Go-Pro online platform used to gathering innovative ideas from users. Third, according to Wagner (2012) firm boundaries should be open to suppliers, so that firms can benefit from collaborating with suppliers in the new product development process through inter-organizational learning and knowledge sharing during the new product development process. These findings are also in line with the research conducted by Lau, Tang and Yam (2010) which, studying the Chinese manufacturing sector, has verified that sharing information with suppliers and product co-development with customers directly improves product performance. The process in which organizations engage internal stakeholders (employees within an organization) and external stakeholders (customers and suppliers) as participants in the innovation process can be called value co-creation. This follows three sub-processes: collect, combine, and create, in which the organization collects resources such as labor, raw materials, and capital in the appropriate

Literature review

combination to ultimately lead to the creation of a new product or service. Useful information and relevant information are combined, and new knowledge is created and used to improve or change any of the value creation sub-processes. Thus, successful value creation processes depend on the success of the sub-processes, which are driven by human capital and technology (Halale, 2015). Fourth, it's possible also to identify other actors in the innovation process like brand ambassadors. In fact, according to Nike football: World Cup South Africa 2010 (Ofek & Johnson, 2013) the company considered involves its brand ambassadors during the market research and test phases because top athletes are their first customers and to achieve the top result they need technological superior products to improve the characteristics they want to improve. Fifth, the competitors, in their own way, contribute to the innovation process. It is possible to identify two approaches to this development, a collaborative one, in which two companies competing in the same market decide to collaborate in the R&D phases through a co-opetition (Bengtsson & Kock, 2000), and an uncooperative one, when one exploits the competitor's patents and inventions to expand their own knowledge (Cantamessa & Montagna, 2016). Sixth, complementors provide products and systems that are complementary to the main product. Finally, other players are involved in the innovation process like universities, during the basic research, or government and international organization, with the regulation of standard.

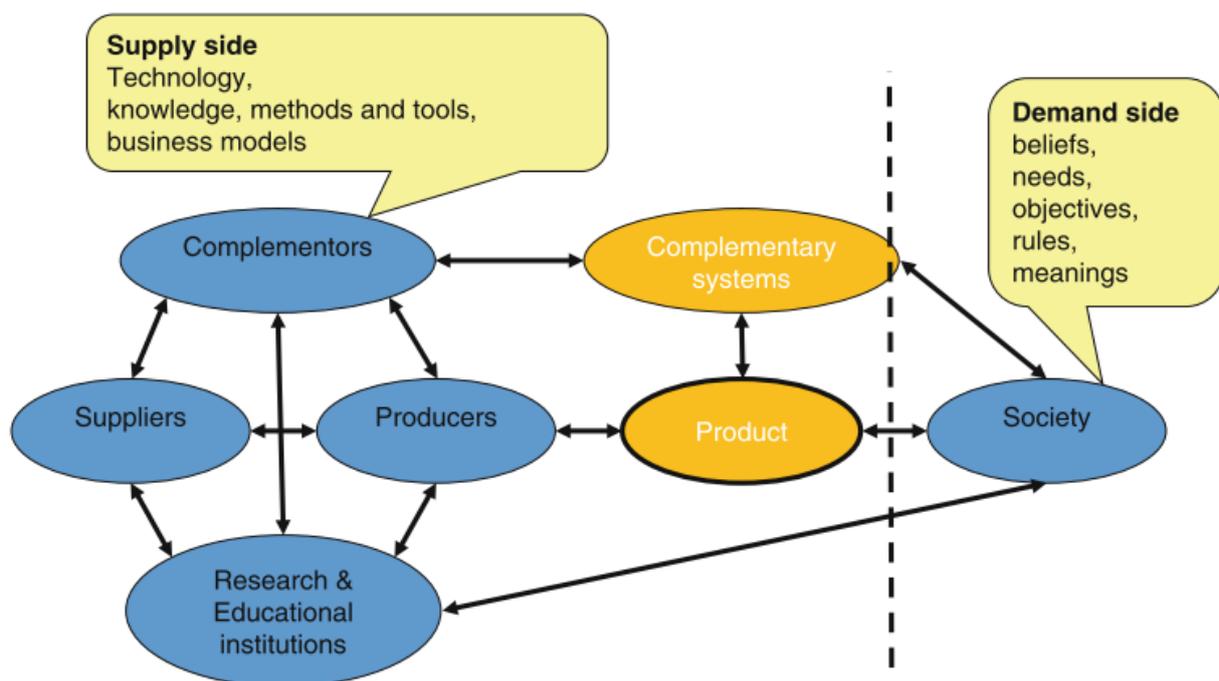


Figure 2.9: The constituent elements of a technological paradigm (Cantamessa & Montagna, 2016).

Innovation is a complex process and depends on different actors, as it is shown in Figure 2.9, which work in different phases. The result of their work could influence a new product or a new

service and also could improve how they collaborate with colleagues and external stakeholders. During the last years companies increase this collaboration by adopting new technologies such as Social Media, which provides a channel for the exchange of information and sharing of views through a virtual platform (Asio, 2015).

2.4. Social Media

This paragraph shows the different types of Social Media that exist and how organizations change their approach to technology during the time.

2.4.1. Different types of Social Media

Since its advent internet had changed human being's behavior, from the purchase of new products and new services to scientific research. It also affected social interaction between people, in fact through Social Media people started to exchange messages, photos and videos and started sharing news, stories and content at a distance in a short time (Dewing, 2010). The term Social Media refers to the wide range of mobile and internet-based services that allow users to participate in online exchanges, contribute user-created content or join online communities (Dewing, 2010). It is possible to classify them in the following way:

- Blogs;
- Wikis;
- Social bookmarking;
- Status-update services;
- Virtual world content;
- Med-sharing sites.

The first one, Blog, is the short for "web log", a blog is an online diary in which pages are generally displayed in reverse chronological order. The second one, Wiki, is a collective website where any participant is authorized to edit any page or create a new page using his web browser. Instead, the third one, Social bookmarking, allows users to organize and share links to websites. Social networking sites, which are the fourth one, have been defined as web-based services that allow people to build a public or semi-public profile within a limited system, articulate a network with other users with whom to share a connection and view and traverse their list of connections and those carried out by others within the system. The fifth one, Status-update services, is also known as microblogging services, status update services allow people to share short updates about people or events and see updates created by others. The sixth one, Virtual world content, offer virtual environments similar to games in which users interact. An example is an imaginary world

Literature review

built in Second Life, in which users create avatars (a virtual representation of the user) to interact with others. The last one, Med-sharing sites, allow users to post videos or photos.

These categories overlap to some extent. Twitter, for example, is a social network site and status-update services. Similarly, Facebook users (a social network site) can share photos and Pinterest users (med-sharing site) can follow other people (Dewing, 2010). All these types of Social Media are useful to improve communication among people, some more some less. For this reason, companies decided to adopt this technology.

2.4.2. Technological trend

From the companies' point of view, executives recognized the potential of these platforms to strengthen the company's communication and collaboration lines and to strengthen knowledge sharing. Many have realized that by exploiting the creative capacity of internal and external stakeholders, they can improve organizational effectiveness and potentially improve strategic direction (Harrysson, Schoder, & Tavakoli, 2016). According to a report by McKinsey, the implementation of Social Media in companies took place in three phases:

- Tryouts;
- Collaboration and knowledge work;
- Strategic insights.

The first phase, Tryouts, started in the mid-2000s, when companies have begun to test social technologies within business units and in functions such as marketing to improve critical functional activities. Marketing experts have used Facebook or YouTube to acquire new customers or for interactions with existing customers, for example, to build relationships with social influencers. Collaboration and knowledge work phase started around 2010, when a more collaborative approach has emerged, with advanced companies adopting internal platforms such as Chatter, Connections and Yammer to connect employees. Companies have sought pools of knowledge and talent within the organization to bring together project teams with relevant skills. Finally, in the most recent evolutionary phase, the strategic insight phase, social technologies have supported and shaped the strategy, opening up to wider participation and control in an area that has long been considered as the reserve of an organizational elite. The use of technology has matured in many companies that have forged internal and external networks, encouraging a series of interested parties to participate in the development of the strategy.

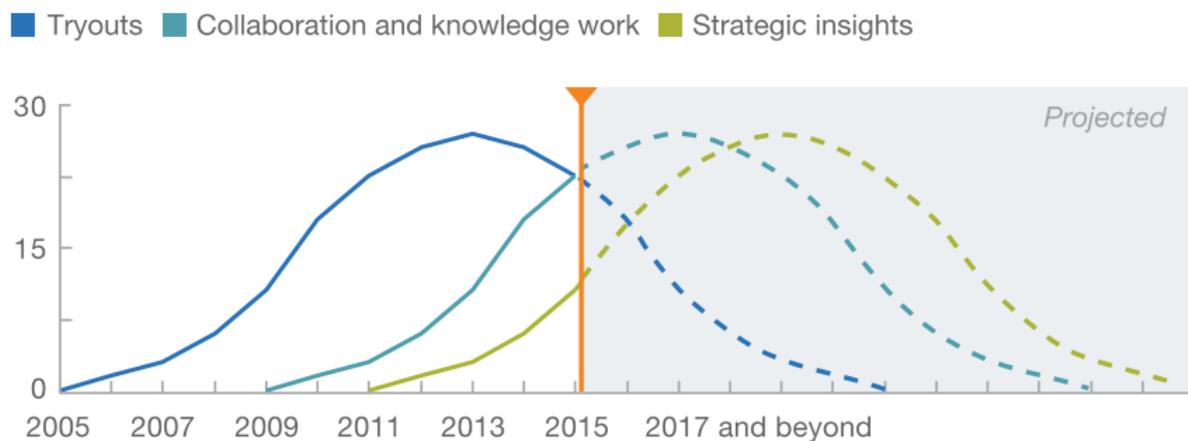


Figure 2.10: Patterns of social-technology usage, % growth rate by pattern, dashed values estimated¹ (Harrysson, Schoder, & Tavakoli, 2016).

Table 2.2: Patterns of social-technology usage, % growth rate by pattern, dashed values estimated (Harrysson, Schoder, & Tavakoli, 2016).

Rising strategic value	2008–10	2011–13	2014–16
% of organizations using social tools for strategy development	20	25	30
% of organizations making decisions and setting strategic priorities from bottom up	16	18	25
Top 3 appropriated technologies for developing strategy	Prediction markets Video sharing Blogs	Prediction markets Collaborative document editing Social networks	Social networks Wikis Video sharing

Figure 2.10 and Table 2.2 show the evolution of organizational approaches to social technologies which appear to be moving through three phases of usage (Harrysson, Schoder, & Tavakoli, 2016). In all three of these phases, it is clear that Social Media is used to improve the performance of the company and in a certain way to innovate, in different departments. In fact, in the first phase, Social Media are mostly used in the market research phase, while in the second phase to improve internal communication.

¹Curves in graph are based on tool usage sorted by purposes/benefits and reflect a normal distribution; projected values are based on responses to operational/tactical usage and insights from other new-technology adoption curves (Harrysson, Schoder, & Tavakoli, 2016).

Source: McKinsey Enterprise 2.0 surveys of 2,750 global executives over each year from 2005 to 2015.

Literature review

The next three figures track how companies' choice of social tools, the boundaries of their usage, and the benefits of applying them have evolved over the period, following the research conducted by Harrysson, Schoder and Tavakoli (2016). These charts represent % of respondents, dashed values estimated.²

Figure 2.11 shows that social networks (such as Facebook and LinkedIn) and blog platforms (such as Twitter and Yammer) are the main choices for companies to improve communication and collaboration, meanwhile the use of wikis has less impact (Harrysson, Schoder, & Tavakoli, 2016).

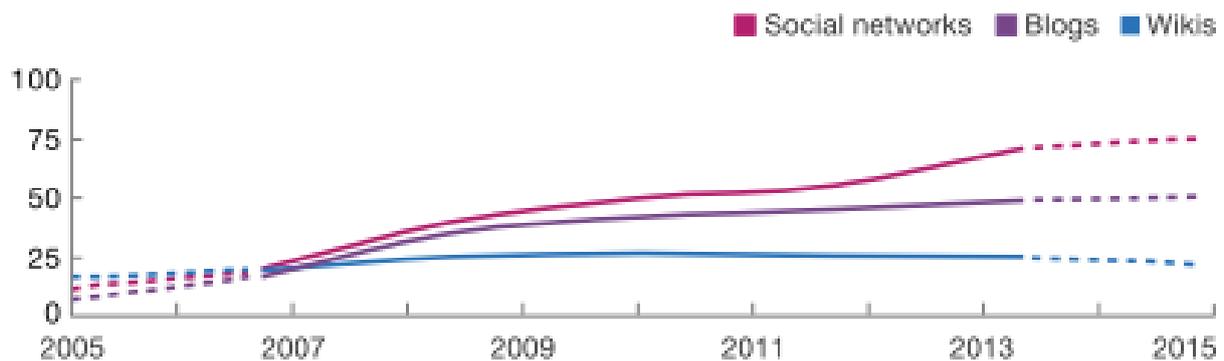


Figure 2.11: Adoption of social technologies³ (Harrysson, Schoder, & Tavakoli, 2016).

They found clear evidence that Social Media have expanded and become better integrated, with companies first moving to interact with customers, then creating networks linking both internal actors (employees) and external actors (in general, stakeholders), as Figure 2.12 shows.

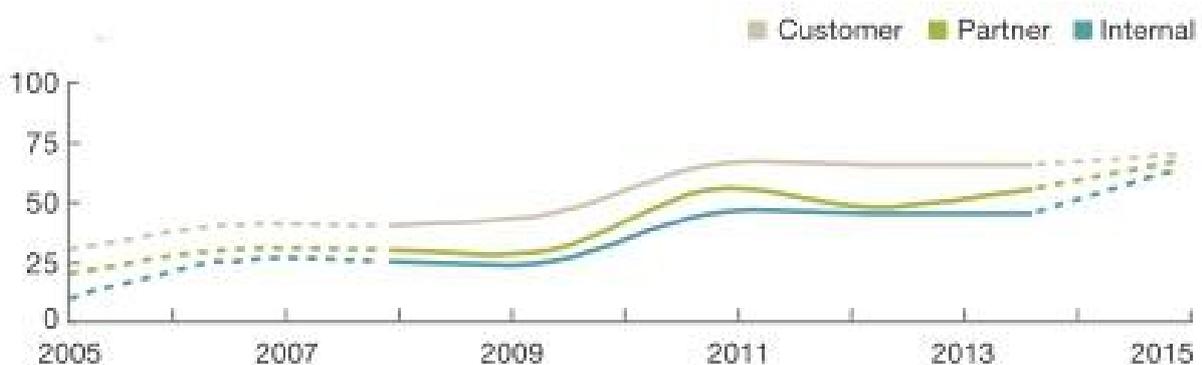


Figure 2.12: Type of use (Harrysson, Schoder, & Tavakoli, 2016).

² Estimates derived from those respondents who answered questions about future and prior use of social technologies; not all respondents did so

³ Net adoption adjusted for technology churn

Source: McKinsey Enterprise 2.0 surveys of 2,750 global executives over each year from 2005 to 2015

In the end, they found that the most observed benefits from adoption were greater access to knowledge and experts within and outside the enterprise, as Figure 2.13 shows. Figure 2.13 shows also that companies have achieved cost reductions during the last year. They were able to get this result, for example, through more efficient internal communications and the use of video and knowledge-sharing platforms. These platforms improved product and service quality and get a faster time to market (Harrysson, Schoder, & Tavakoli, 2016).

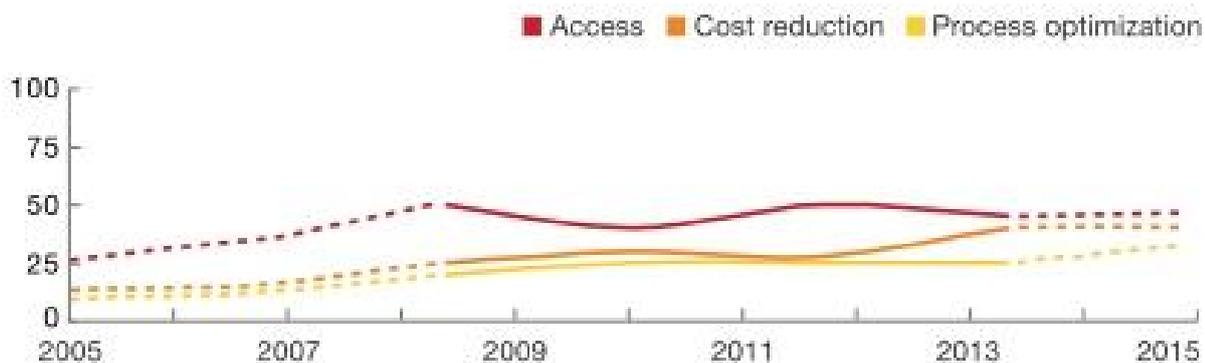


Figure 2.13: Benefits from adoption (Harrysson, Schoder, & Tavakoli, 2016).

2.5. Social Media and innovation

This paragraph describes the role of Social Media in innovation. The aim of the first part is to analyze which types of innovation Social Media can influence. The second part describes in which stages of innovation process Social Media are used more. In the last part, it is described how is it possible to use Social Media in innovation, with a particular focus on resources, capabilities and competences that firms need to aim their innovation goals.

2.5.1. Types of innovation influenced by Social Media

Some scholars have wondered what types of innovation are influenced by the use of Social Media. By generalizing the results of the literature review to Social Media it is possible to identify the following types of innovation influenced by this technology.

Bhimani, Mention and Barlatier (2019), who focused their research on the literature review, found that Social Media influenced eight different types of innovation: product innovation, process innovation, organizational innovation, marketing innovation, technical innovation, service innovation and open innovation. It is reasonable to expect that different companies and respective organizational units will use Social Media differently for various types of innovation. The authors found that open innovation, service innovation, organizational innovation, product innovation and

Literature review

marketing innovation are the most popular types of innovations investigated for their interactions with Social Media.

However, it was not possible to identify the impact of the use of Social Media in different types of innovation according to the classification given by Abernathy and Utterback (1975) if not through the study of Lewrick, Raeside, and Peisl (2007) which subdivided the types of innovation in incremental, radical and overall innovation. According to the authors, it is possible to define incremental innovations as the improvement/expansion of existing products, services, processes, technical or administrative conditions and they do not cause a significant departure from status-quo. Instead, radical innovations in products, services, processes, etc. are breakthroughs that fundamentally change a product or service or process. Finally, overall innovativeness is the total of all innovations put into practice, radical and incremental in all typologies. Their study focus also on the life-cycle of companies. They found that start-up companies utilize different networks from mature companies (Lewrick, Raeside, & Peisl, 2007).

If an organization in different phases of their life-cycle use Social Media differently, it is possible to imagine that they use them also in different phases of the innovation process. The aim of the next sub-paragraph is to evaluate what are the main stages of this complex process, so it will be possible to collocate the type of Social Media used in each stage by companies.

2.5.2. How Social Media can influence the innovation process

As mentioned above, Social Media are highly interactive platforms that allow individual users and communities to share, co-create, discuss, and modify user generated content. These types of content can inform different stages of the innovation process.

The innovation Stage-Gate by Cooper is seen also divided into three parts: the front end of innovation includes the first two stages, the ideation and the business case; development includes the development and test stages; commercialization includes the launch stage. The new division is shown in Figure 2.14.

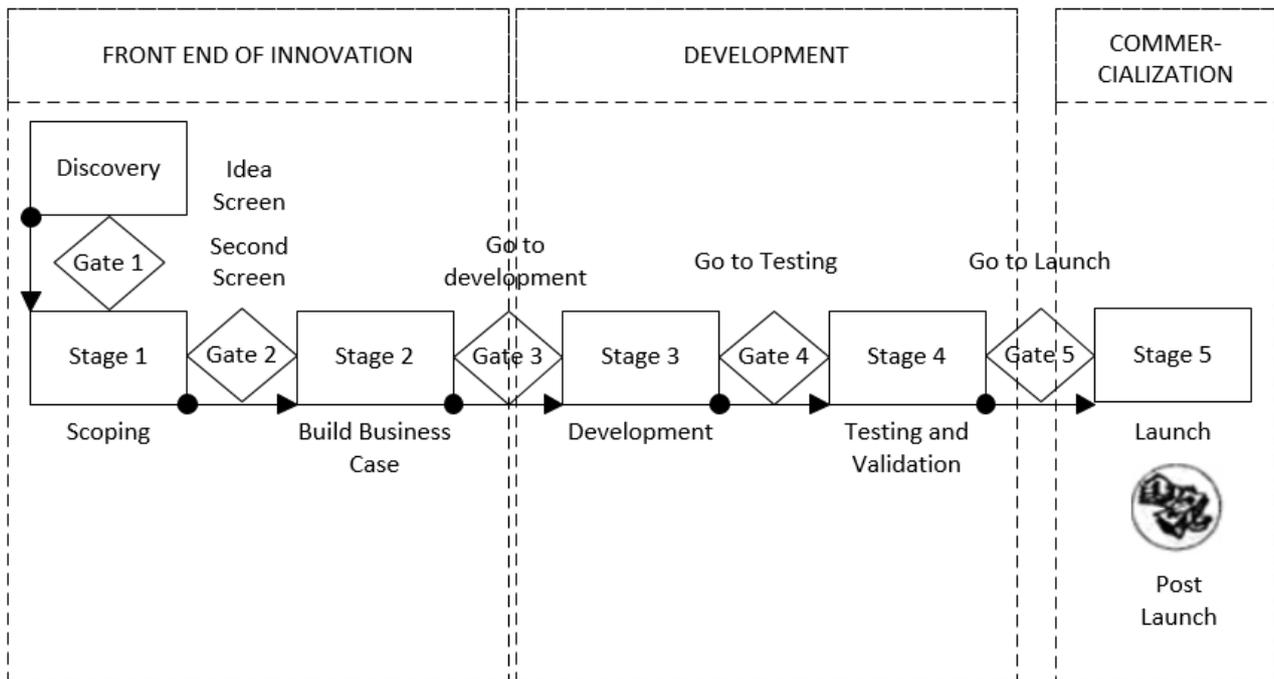


Figure 2.14: Stage-Gate process divided into the front end of innovation, development and commercialization (Cooper, 2008).

For research purpose the name of the new three stages are:

- Ideation stage;
- Development / test stage;
- Launch stage.

During the ideation stage, firms leverage Social Media to increase inputs from consumers, with significantly fewer costs than are enquired by traditional methods (Muninger, Hammedi, & Mahr, 2019). Social Media can facilitate open innovation, in which firms integrate new ideas and feedback from various internal and external sources (Muninger, Hammedi, & Mahr, 2019). For example, IBM Innovation Jam is a form of crowdsourcing organized in Social Media to gathering new innovative ideas. During the development stage, project management platforms are used to schedule the work and shared collaboration spaces are used to facilitate communication across teams. Some companies create customization portal in their own web-site to involve customers in the development stage. For example, Nike has created the online space Nike By You, in which customers can modify some parts of the product to personalize it for their tastes. However, the results of the study conduct by (Marion, Barczak, & Hultink, 2014) show that Social Media are not helpful to the New Product Development team and may, in fact, be distracting to innovation management during the development phase. Instead, during the launch stage, advertising in Social Media is more effective the traditional one to create awareness and to engage customers. Kim and

Literature review

Hanssens (2017) find that blog postings have permanent, trend-setting effects on pre-launch consumer interest in a new product, while advertising has only temporary effects.

Thus, these authors have identified different stages in which Social Media are present during the innovation process. However, organizations need to increase their capabilities to manage these tools. This could be a crucial factor when companies are working in a turbulent market.

2.5.3. Capabilities for Social Media use in the innovation process

Modern organizations today face rapid changes so as not to lag behind competitors. Managers know that paying attention to what capabilities to focus on is critical in a turbulent environment. If they intend to use Social Media in the innovation process they must understand what it means and what it implies at the organization level, at the staff structure level, at the level of capabilities that must be acquired.

According to Muninger, Hammedi, & Mahr (2019), various capabilities may apply to the use of Social Media to support innovation processes. The authors realized a framework (Figure 2.15 and Figure 2.16) able to give a deeper understanding of which capabilities organizations have to focus on. They found that Social Media teams are key resources, at both operational level and strategic level. The Social Media Manager is the key figure who coordinates communication across different teams. Teams, to be able to perform their work, need digital infrastructure, considered as material resources. Regarding competences, they entail a series of interrelated skills, like knowledge management, top management understanding, and networking and collaboration. At the end of the framework, the authors underlined the concept that innovation is a complex process and for this reason, it requires both flexible and structured processes. Being able to get all these skills is not a fast process, it takes time and money. But it allows companies to live in a constantly changing turbulent market.

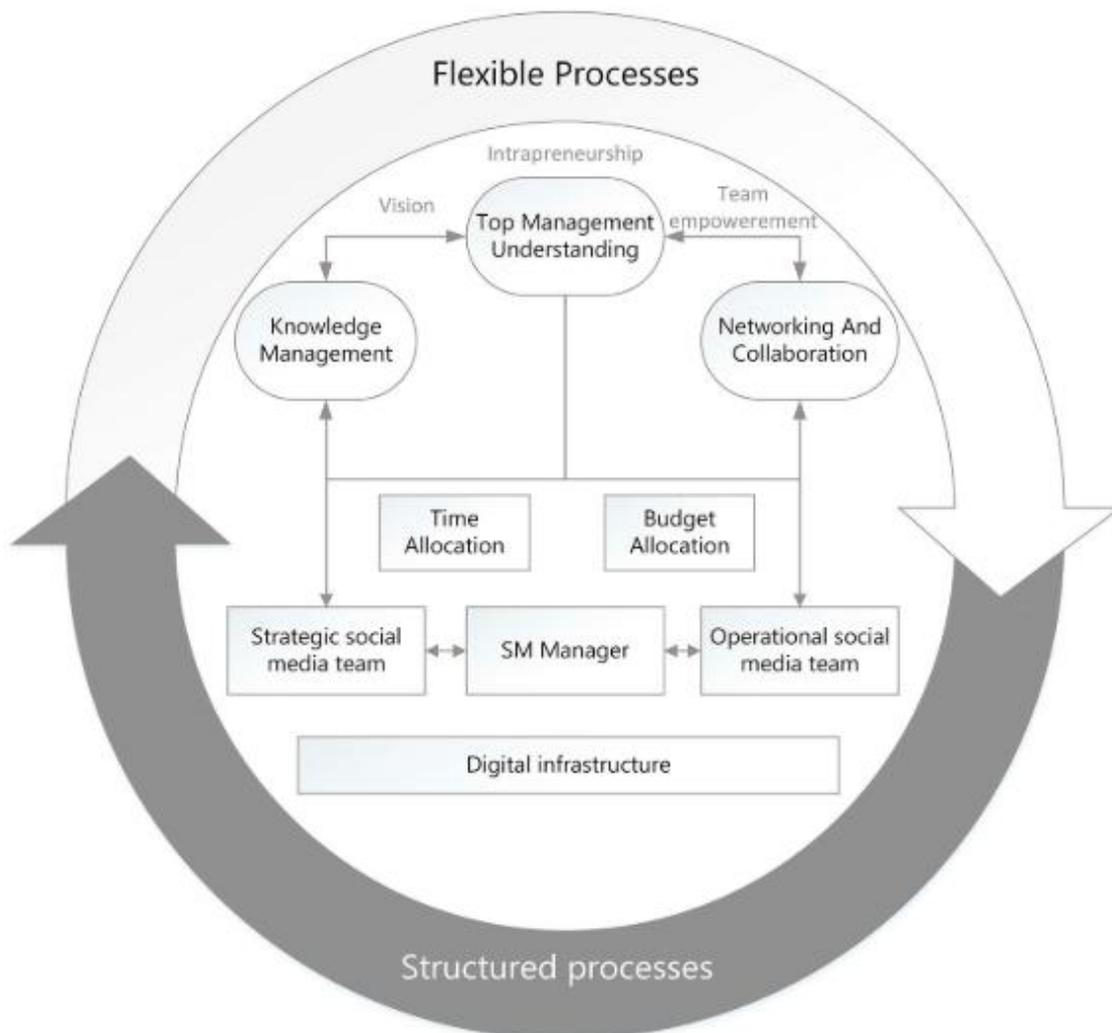


Figure 2.15: Framework of key capabilities for Social Media use in the innovation process (Muninger, Hammedi, & Mahr, 2019).



Figure 2.16: Legend of the framework of key capabilities for Social Media use in the innovation process (Muninger, Hammedi, & Mahr, 2019).

2.6. Enterprise Social Platform

The aim of this paragraph is to introduce Enterprise Social Platform, focusing on innovation purposes. The first step is to define Enterprise Social Platform and to provide a rough historical account of the various avenues through which technologies have entered. The second step consists of a mapping of what the market offers, not to analyze the differences between the different platforms but to understand which are the main players present in it. The purpose of this research is to generalize the results obtained to the Enterprise Social Platform category, not to describe the contents offered by the various market resellers. The third one explains the benefits that it brings in the company, with particular attention to how the impact of the platform on the innovation process. Finally, the last part is about the challenges and barriers encountered in the adoption of Enterprise Social Media in general and in deeper detail in innovation management.

2.6.1. Definition of Enterprise Social Platform

In the literature, Enterprise Social Platforms are also referred to as Social Media at Work, Enterprise Social Media or Enterprise Social Network. The most reported definition is that given by Leonardi, Huysman, and Steinfield (2013) (Figure 2.17). Following it, Enterprise Social Platforms are defined as:

“Web-based platforms that allow workers to (1) communicate messages with specific coworkers or broadcast messages to everyone in the organization; (2) explicitly indicate or implicitly reveal particular coworkers as communication partners; (3) post, edit, and sort text and files linked to themselves or others; and (4) view the messages, connections, text, and files communicated, posted, edited and sorted by anyone else in the organization at any time of their choosing” (Leonardi, Huysman, & Steinfield, 2013).

Most Enterprise Social Platforms mimic the functionality of popular social networking sites such as Facebook. But it is possible to find often blogs and wikis within the platform, as well as features through which social tagging and document sharing. Thus, when talking about social technologies used for communication within the organization, it makes less sense to distinguish between tools such as social networking, microblogging, and social tagging, and more sense to treat these individual tools as part of an integrated Enterprise Social Platform.

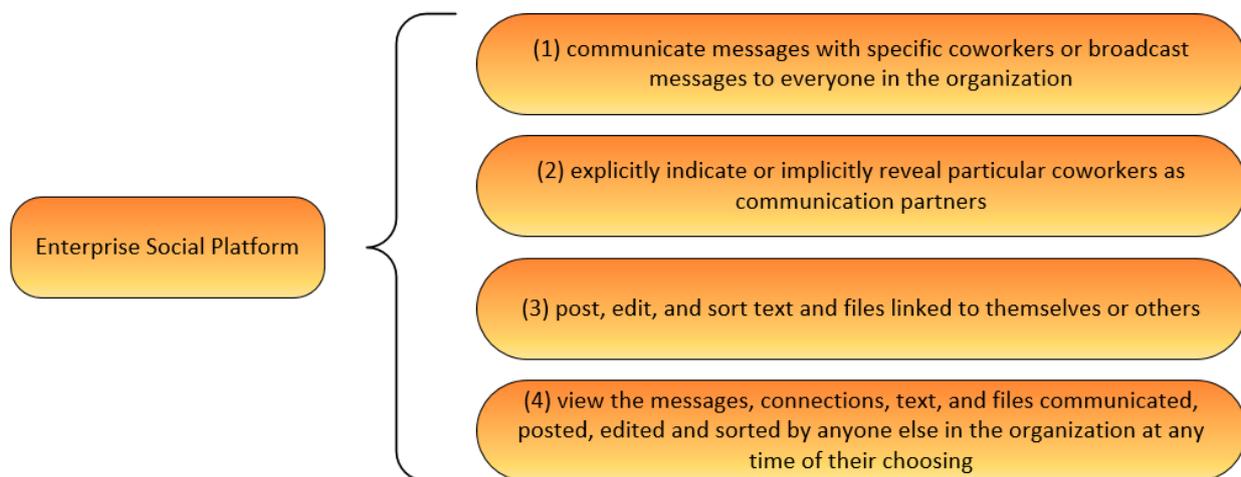


Figure 2.17: Definition of Enterprise Social Platform (Leonardi, Huysman, & Steinfield, 2013).

In recent years, many vendors have entered the Enterprise Social Platform market with proprietary solutions that can be either installed on company servers or hosted in the cloud. Such enterprise social software tools now typically integrate the full variety of Social Media functionality, including blogs, wikis, status updates and microblogs, social analytics, and other collaboration tools (e.g. uploading and sharing files and other digital resources), as well as social network features such as profiles and the ability to connect with or follow someone. For example, companies that offer the Enterprise Social Platform service are Salesforce's Chatter, Microsoft's Sharepoint, Yammer, IBM's Connections, Jive from Jive Software, Oracle's Social Network, Cisco's Webex Social, Facebook's Workplace. Figure 2.18 shows the brand logos of these companies.



Figure 2.18: Companies that offer the Enterprise Social Platform service.

2.6.2. Benefits of Enterprise Social Platform

Enterprise Social Platforms contribute to implementing at least three kinds of knowledge, mentioned above: the “know what”, the “know how” and the “know who”. Enterprise Social Platforms contribute to “know what” because they are a digital instrument to collect files and data, easy to access. They are useful for “know how” because they allow communication among employees. Finally, they contribute to “know who” because people's profiles are present on the platform and it is easy to identify who to ask what (Leonardi, Huysman, & Steinfield, 2013).

As a part of their digital transformation companies are increasingly adopting them to increase communication, collaboration and knowledge sharing within an organization (Kirchner & Razmerita, 2019). The authors classify the business value, derived from the usage of Enterprise Social Platform, along four dimensions:

- Efficiency;
- Transparency;
- Retention;
- Innovation.

They underline the concept that the business value doesn't come from the platform itself but from how the platform is used within the company. Thus, Enterprise Social Platform can leverage both private and public knowledge improving the intelligence and creativity of the workforce. Figure 2.19 shows the Social Media Business Value Compass ideated by (Kirchner & Razmerita, 2019).

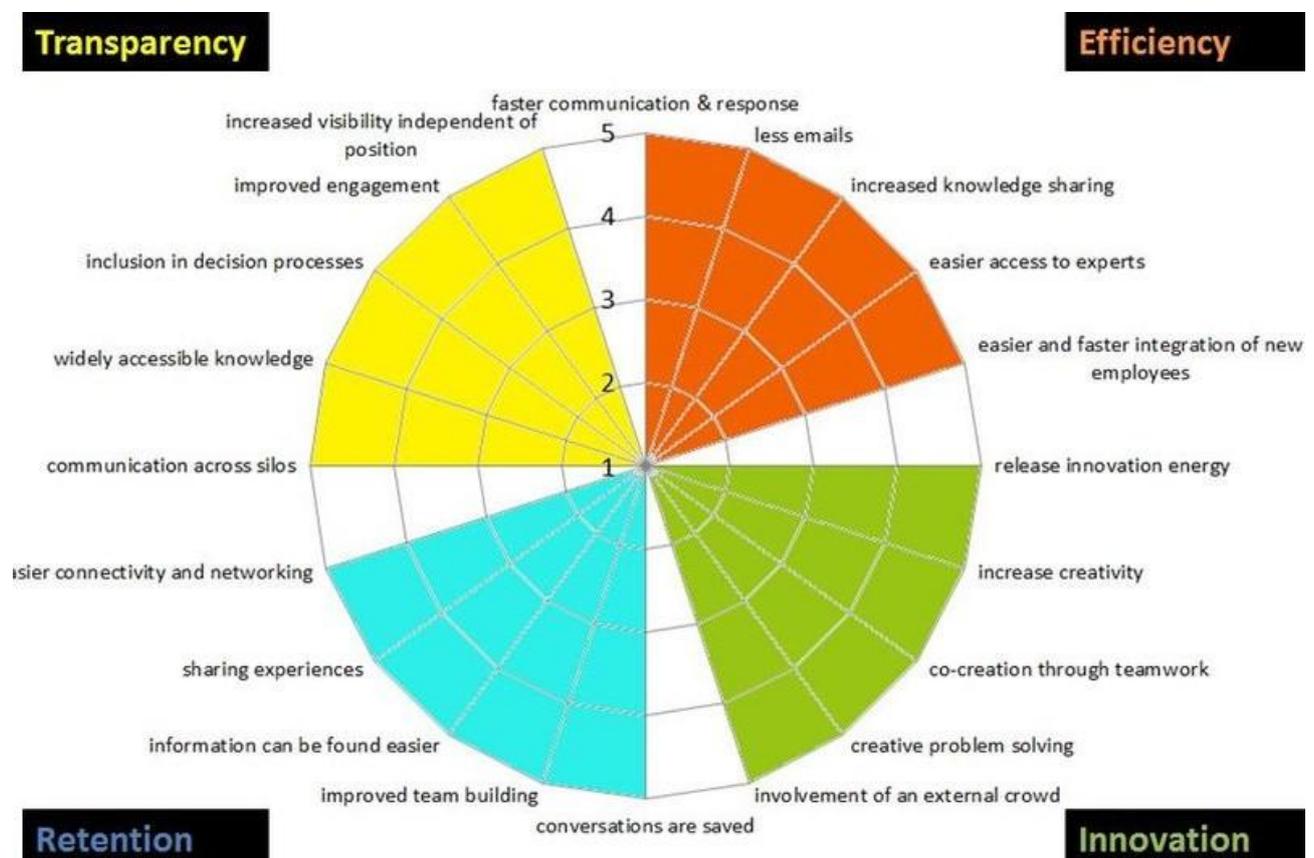


Figure 2.19: Social Media Business Value Compass ideated by (Kirchner & Razmerita, 2019).

As mentioned above innovation is characterized by knowledge sharing, knowledge creation and organizational learning within a company. Qi and Chau (2018) have studied the relationship between Enterprise Social Platform usage and these elements. Their study shows that Enterprise Social Platform usage significantly influences knowledge creation and knowledge sharing. It also has a positive and direct effect on organizational learning. Finally, both knowledge creation and

Literature review

knowledge sharing influence organizational learning. These mean that companies could benefit from an indirect effect from the Enterprise Social Platform to become more innovative. Figure 2.20 shows their research model and Figure 2.21 shows the results of their analysis. Instead, Table 2.3 is a legend to read the results of Figure 2.21.

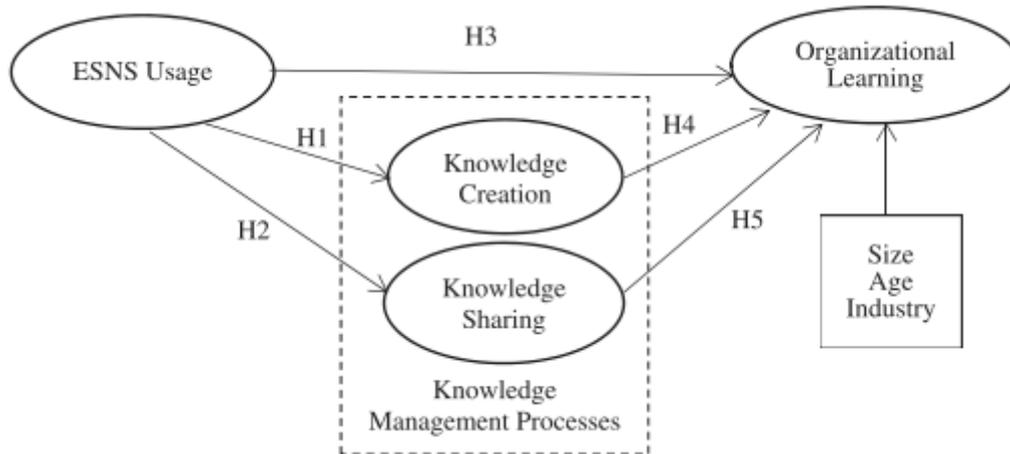


Figure 2.20: Qi and Chau's (2018) research model.

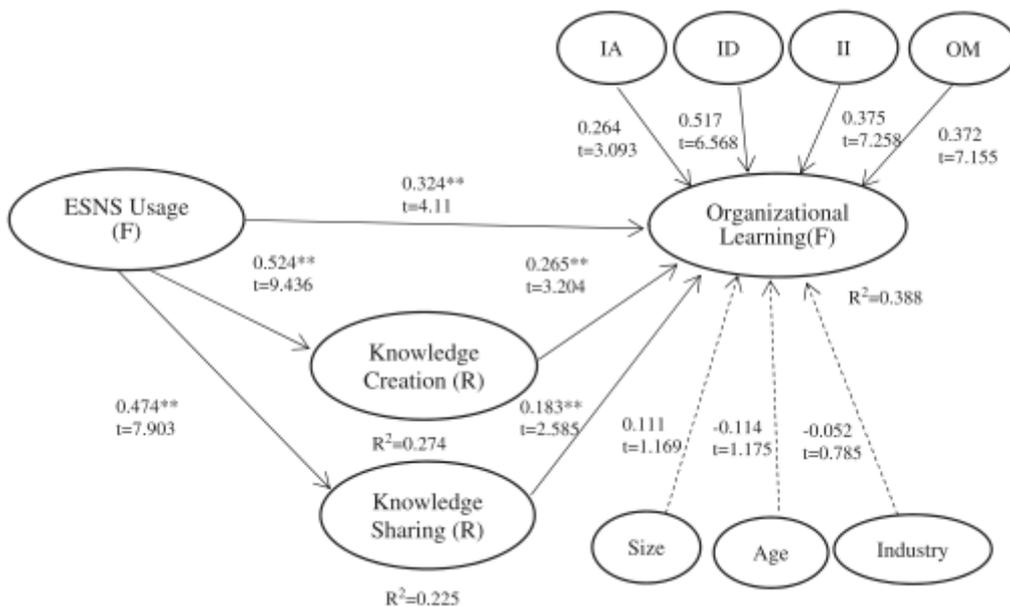


Figure 2.21: Results of the study conducted by Qi and Chau (2018)⁴.

⁴ Notes: (1) Solid lines mean path coefficients are significant; dotted lines mean coefficients are insignificant.(2) R = Reflective; F = Formative; ** p < 0.01(3) (Qi and Chau, 2018).

Table 2.3: Legend of Figure 2.21 (Qi & Chau, 2018).

Organizational learning	
IA	Information acquisition
ID	Information distribution
II	Information interpretation
OM	Organizational memory

The literature offers little support in favor of this thesis until this moment. Patroni, Von Briel and Recker (2016) examine the adoption of Enterprise Social Platform to boost productivity and innovation in a global retailer. They found that the use of Enterprise Social Platform has two aspects:

- the first one consists of a journey of individual and cultural change;
- the second one is digital technology implementation.

The best allies in driving adoption within the organization can be social digital natives because they are quick to adapt their work practice to Enterprise Social Platform communities. They found also that the digital strategy of an organization needs to align with strategic objectives. To close knowledge gaps employees from diverse organizational teams should connect and collaborate and the best way to do it is to create funny and socially engaging innovation initiatives. Instead, to make employees work better routine work initiatives need engagements that are aligned with the organization's current language, narratives, and culture. Enterprise Social Platform implementation is supported by a social digital leadership when senior executives and managers are active and regularly engage with Enterprise Social Platform communities. Collaboration and organizational learning can be developed through social competition and social fast-paced learning supported by Enterprise Social Platform. Recker, Malsbender and Kohlborn (2016) studied the innovation process at a large Australian retailer through Enterprise Social Platform. They focused their studies on the first stage of the innovation process: the ideation stage. They found that the success factors on innovation idea are:

- how powerful the social network participants are in the organization;
- how easily understandable the idea is on the platform;
- how long it has been discussed.

Literature review

Practically, they identified that the network power of the idea generator contributes to the development of the idea. Have sufficiently senior members of the organization participating in the discussions is also a contribution to develop a new and innovative idea. Moreover, they found that bottom-up ideas were more likely to progress. Their results explained that the originality or implementability of an idea is less important than acceptability and explicitness. So, to better manage the innovation process through Enterprise Social Platform companies need to develop standards and to give examples for the presentation of ideas. And finally, they found also that organizations have to consider a specific role and a specific amount of time needed and allocated to the network for innovation scope.

It has been studied how Enterprise Social Platform affects knowledge, in particular on “know what”, “know how” and “know who”. Its use influences knowledge sharing, knowledge creation and organizational learning. The value that Enterprise Social Platform usage generates can be classified into 4 macro categories: efficiency, transparency, retention and innovation. Leaving a question mark on innovation, because the purpose of this research is precisely to evaluate this macro-category. Figure 2.22 shows the benefits which are described above.

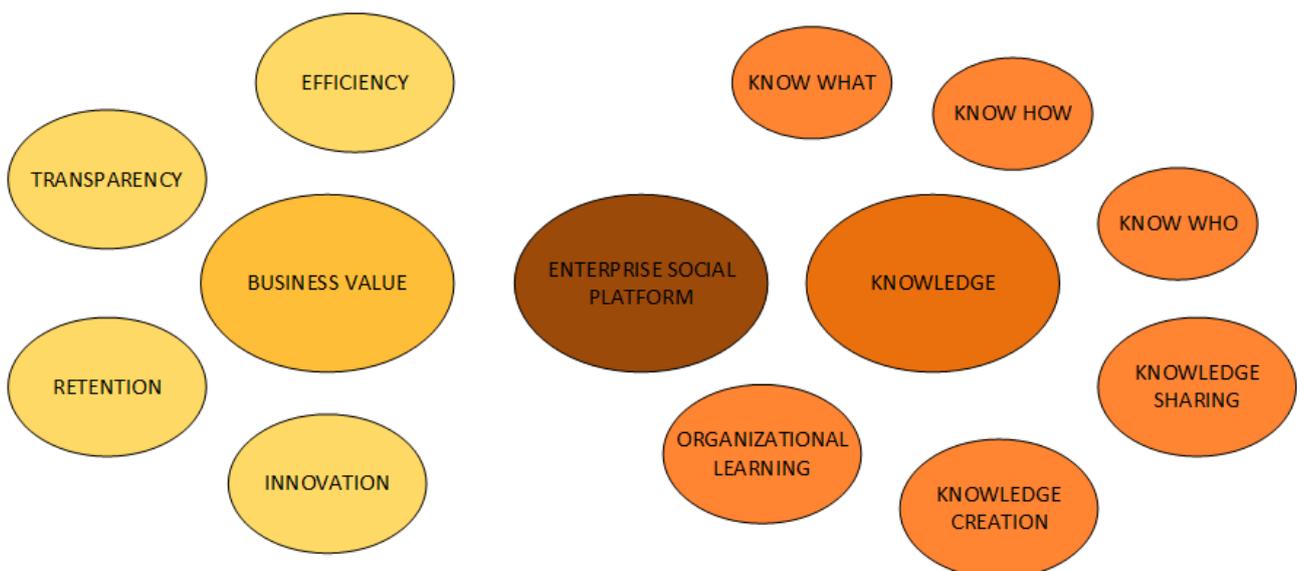


Figure 2.22: Enterprise Social Platform benefits.

2.6.3. Challenges and Barriers

It is crucial for organizations to understand what factors influence the adoption of Enterprise Social Platform if they decided to add them in their daily routine. There are any barriers or challenges to overcome to use the platform, but of which types?

As mentioned before, people within an organization use Enterprise Social Platform, so the software and the technological infrastructure are not the unique barriers during the adoption. Many authors studied the influence of human behavior behind Social Media. Human factors are often the more important factors because they use the platform and they can influence how the platform works. If they use it properly and efficiently the platform creates value, instead if they are not able to use it the platform is something that organizations do not need. Despite its potential for innovation, many organizations do not yet have a specific or adequate approach to the challenges and opportunities offered by Social Media (Roberts, Piller, & Lüttgens, 2016). If Enterprise Social Platform offers potential for innovation, an understanding of the difficulties, obstacles and enablers associated with the effective use of these technological tools for innovation is needed. According to Mergel and Bretschneider (2013) the development of Social Media in innovation management consists of three phases:

- entrepreneurship and experimentation;
- order out of chaos;
- institutionalization.

Within each phase, various obstacles and challenges may occur and adequate support activities for the adoption and implementation of Social Media can be developed. From the study of literature, according to Bhimani, Mention and Barlatier (2019), the main challenges and barriers for the use of Social Media in innovation management are cultural and organizational barriers, organizational strategy, technical barriers and intellectual property rights and privacy (Figure 2.23).

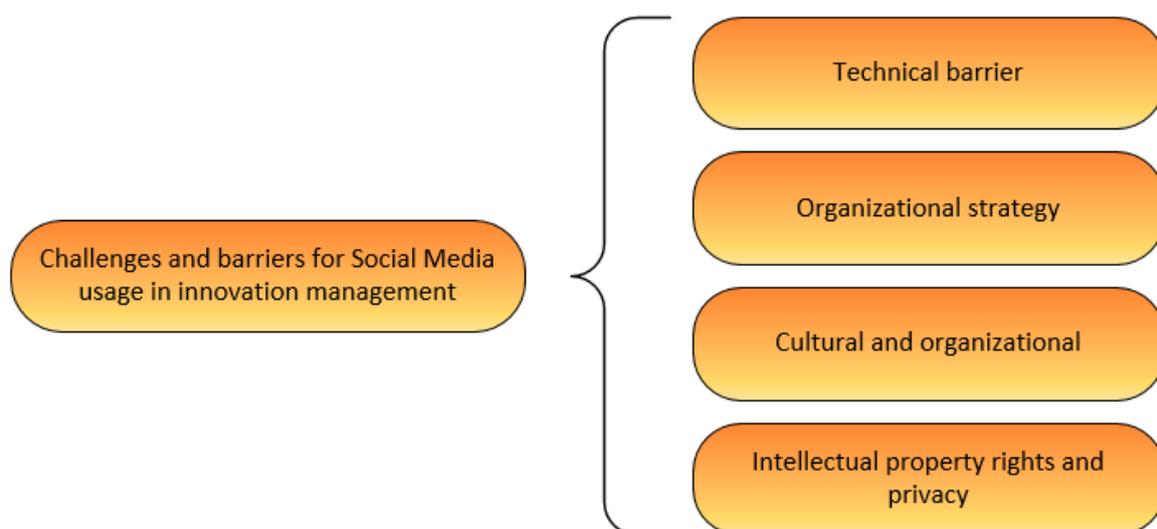


Figure 2.23: The main challenges and barriers for the use of Social Media in innovation management (Bhimani, Mention, & Barlatier, 2019).

Literature review

These macro categories represent an overview of the issues related to the usage of Social Media in general in innovation management. However, before tackling which are more in-depth, it is worth pointing out what the challenges and barriers are in adopting Enterprise Social Platform. So, from this point of view, it is possible to consider as a barrier to innovation all the barriers that prevent knowledge sharing using the platform. According to Razmerita, Kirchner and Nielsen (2016), factors, which influence knowledge sharing through Enterprise Social Platform, can be drivers and barriers and can be divided into individual factors, organizational factors and technological factors. These are in line with the categories mentioned above. In addition, there is a demographic factor. According to this study, the main barriers that influence knowledge sharing through Enterprise Social Platform are: “Years of working experience”, “Lack of trust in colleagues and fear knowledge will be misused”, “Lack of time” and “Change of behavior: from hoarding to sharing”. As far as innovation management is concerned, the study conducted by Recker, Malsbender and Kohlborn (2016) identified five main barriers during the ideation stage: “Missing standards or examples for the presentation of an innovative idea”, “Missing standards for the type of an innovation idea”, “Missing structures or processes for feedback”, “Missing presence of leadership on the platform” and “Missing recognition of employees’ innovation efforts”. Thus, managers have to consider all of these factors when they are deciding to use Enterprise Social Platform in innovation management.

To conclude the literature review of this Master Thesis, it is appropriate to summarize the key concepts that link organizations to the innovation process through Social Media, in particular through Enterprise Social Platform. As previously said, the companies present in innovative markets evolve according to the evolutionary theory of the firm. Companies have an amplified absorption capacity thanks to the presence of gatekeepers. By modifying the knowledge base they are able to improve organizational learning paying attention to the competency trap. Innovation is a complex process divided into three main phases, in which different actors, both internal and external, are involved. Internal actors are mainly represented by employees of the R&Dt and Marketing departments and gatekeepers. Instead, the external actors can be manifold, from customers to suppliers, up to strategic partners and universities. All of these collaborate in the three different phases, summarized mainly in ideation, development and launch. Social Media, in general, helps this process, for example, Facebook allows companies to have direct contact with customers to analyze their feedback and to promote a new product. To make the best use of Social Media, it is necessary to improve capabilities by acquiring expert staff or through refresher courses for internal employees. This process is expensive in terms of money and time but it is useful if you want to have a presence on Social Media, both for Social Media for internal use and Social Media for communication with external actors. Moreover, analyzing the Enterprise Social Platforms (Qi & Chau, 2018) it is possible to affirm that positively influence both knowledge creation, both knowledge sharing and both organizational learning. Therefore, in some way they influence the innovation process. The purpose of this Master Thesis is to understand how this influence occurs and whether it is present. If it is present, it is good to dwell on the problems that companies may encounter in adopting Enterprise Social Platform in innovation management. The

digital transformation that many companies are doing is also to digitize internal communication through these platforms, to be smarter and faster. But it is not always easy to get the expected results if managers do not pay attention to all the variables and take adequate precautions.

3. The Research

The third part of the Master Thesis consists of describing how the research is conducted. The first paragraph of this chapter is about the research question and sub-research questions, in particular, it describes the reason behind each question. Moreover, the second paragraph focuses on the methodology used for the research and underline the various step followed to gathering useful information for the research purpose. Finally, it shows the analysis of the results collected.

3.1. Research Question and Sub-Research Questions

The research is conducted to gathering information about companies that, in addition to using Enterprise Social Platforms, have a significant innovative spirit. First of all, it is necessary to underline the research question:

RQ: "How do companies become more innovative using the Enterprise Social Platform?"

In fact, the aim of this research is to evaluate the impact of Enterprise Social Platform on innovation. The research question is refined in sub-research questions to structure and guide the data collection and analysis. The first sub-research question is about the context on which companies produce innovation and become innovative. As mentioned before there are a lot of different actors who participate in the innovation process, both internal and external. The aim of this question is to confirm the theory present in the literature. Knowledge sharing among different actors could improve innovation differently because innovation can be viewed as a resultant from a bundle of ideas. This implies that it generally arises from a network of actors and relationships. Thus, the first sub-research question is:

SRQ1: "Do companies include employees, customers, suppliers, brand ambassadors, competitors and business partners in the innovation process?"

The second sub-research question is about innovation and Social Media in general. Social Media help innovation as a lot of authors said, because improve communication among people, create a network and stimulate knowledge sharing. But what types of innovation are more influenced by these digital platforms is not completely clear in the literature. Thus, the second sub-research question is:

SRQ2: "What are the types of innovation that Social Media influence?"

According to the research conducted by Bhimani, Mention and Barlatier (2019) is it possible to identify four macro-categories of platforms that influence the innovation process, as Figure 3.1 shows. The first is Public Social Media which includes the most famous platforms as Facebook,

The Research

Twitter, YouTube and LinkedIn for example. The aim of this category is to create a network between the company and consumers. Such connections may be used to leverage customer and user feedback for product experience and refinement, as well as idea contests. Organizations use these to create deeper relationships with their customers, mostly for marketing purposes. But, as mentioned before, innovation sometimes starts from the customers' point of view, following the market driven theory. The second category is Company-built Social Media. This one is characterized by the social networking functionalities developed in-house by organizations. The most important and famous is IBM Innovation Jam which is the pioneer of these kinds of platforms. The main aim of this is to acquire stakeholder ideas through crowdsourcing. Another famous platform developed in-house is NASA@work used by the company to leverage interactions internally. Basically to improve internal communication as an Enterprise Social Platform and it is also useful because it is able to build engagement with stakeholders through games and contests thanks to its double value. The third category is Company-licenced Social Media. This is the typical Enterprise Social Platform such as Slack, Yammer, Workplace to mention a few. The use of these solutions enables internal employees to communicate and collaborate on work projects, to locate subject-matter experts, and to capture and share unstructured content in addition to formal documents. Instead, the last one is Innovation Intermediary Social Media and it represents the recourse for organizations to specialized innovation intermediaries. The most famous are Innocentive and Get Satisfaction. The sub-research question would confirm these categories and would consider others if were present.

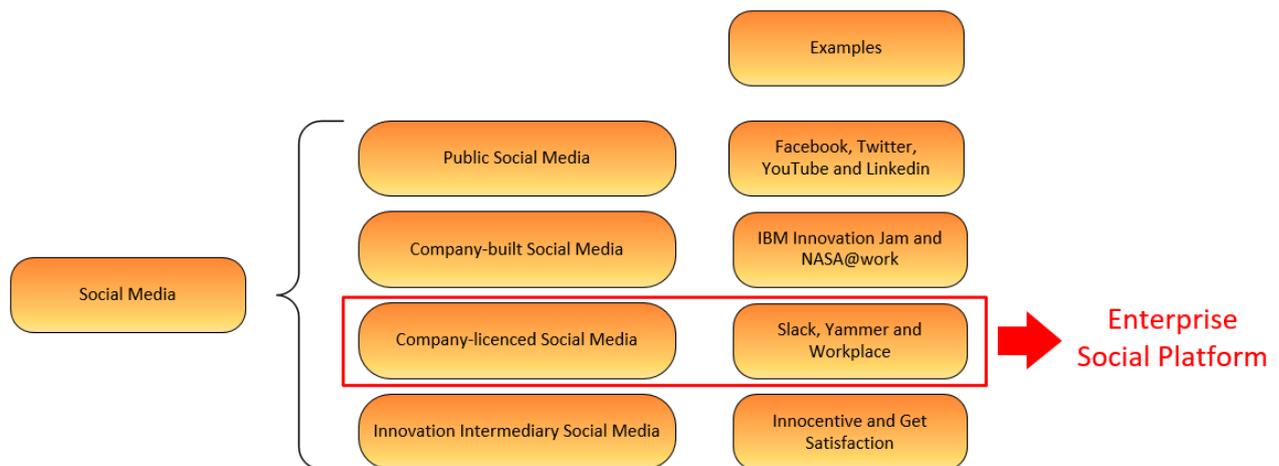


Figure 3.1: Four macro-categories of platforms that influence the innovation process (Bhimani, Mention, & Barlatier, 2019).

Thus, the third sub-research question is:

SRQ3: "What are tools used by companies to improve innovation?"

Enterprise Social Platforms influence indirectly productivity and innovation through a changing of employee's individual behavior and organizational culture (Patroni, Von Briel, & Recker, 2016). As employees are part of the day-to-day business, they are able to provide expert knowledge of products and services. The firm's knowledge base provided by its employees can thus improve an organization's performance in innovation efforts. By including employees directly in the innovation activities of an organization, the organizational innovative potential can be increased. This is because aside from generating innovative ideas, employees can also provide several innovation support services, including, for instance, searching out new technologies, suggesting new ways to achieve objectives, applying new work methods, and investigating and securing resources to implement new ideas (Recker, Malsbender, & Kohlborn, 2016). Enterprise Social Platforms differ from traditional communication platforms (like telephone or even face-to-face communication) in how idea development and innovation can be supported. First, on an Enterprise Social Platform, idea developers are able to reach an unknown audience beyond the network of people they know themselves. They can thereby communicate their ideas to a wider part of the organization. For example, idea originators can reach domain experts and include expert knowledge within the development. Second, they can call attention to their ideas by a potential decision maker, for example, senior managers, which is often elusive in traditional settings. Third, as the information on Enterprise Social Platform is persistent over time, existing discussions can be used as impulses for the development of new ideas and other parties can join the development process independent of time and space (Recker, Malsbender, & Kohlborn, 2016). According to Kirchner and Razmerita (2019) facilitating innovation is one of the four parts of the value created by the Enterprise Social Platform. The platform creates value for innovation because it releases energy for innovation, it increases creativity, allows co-creation through teamwork, allows you to find creative solutions and increases the people involved. Thus, the fourth sub-research question is:

SRQ4: "How can Enterprise Social Platform facilitate innovation?"

As mentioned above, the innovation process is divided into three different main stages: (1) ideation stage, (2) development/test stage and (3) launch stage. The literature of Social Media usage does not focus on Enterprise Social Platforms in these different phases, however many authors ((Bhimani, Mention, & Barlatier, 2019) and (Muninger, Hammedi, & Mahr, 2019)) describe the importance of Social Media in various steps. The aim of the fifth sub-research question is to gathering information about the use of this particular Social Media to position it across the innovation process. Thus, the fifth sub-research question is:

SRQ5: "At what stage of the innovation process is the Enterprise Social Platform positioned?"

Managers have to consider a lot of different factors when they are deciding to use Enterprise Social Platforms in innovation management. As mentioned in the first part of this research it is possible to classify these challenges and barriers in four categories: cultural and organizational

The Research

barriers, organizational strategy, technical barriers and intellectual property rights and privacy. Each of the categories has important issues related to the usage of Enterprise Social Platforms in innovation management. In addition, there are also barriers that prevent knowledge sharing using the platform within a company. This sub-research question is asked to reflect on the importance that managers give to each barrier, so it will be possible to outline a framework that could be useful to them. Thus, the sixth sub-research question is:

SRQ6: “What are the challenges and barriers in adopting Enterprise Social Platforms in innovation management?”

To best manage Enterprise Social Platforms for the innovation process, the relationship between knowledge managers and innovation managers is important. Because companies use a platform, designed primarily for knowledge sharing, for a specific purpose: innovation. So companies need to understand what its real potential is for this purpose and who should manage the flow of information. The seventh sub-research question is:

SRQ7: “How can managers best manage Enterprise Social Platform for innovation process?”

Following these sub-research questions, it was possible to conduct the research going in deeper detail for the usage of Enterprise Social Platforms for innovation purposes. The next paragraph describes the methodology followed to collect the necessary data to answer these questions.

3.2. Research Method

The aim of the research is to evaluate the impact of Enterprise Social Platforms on innovation. This paragraph describes the methodology followed to collect the necessary data to answer the research question and sub-research questions mentioned above.

First, the research method used to gather the information is described. For exploratory research with open sub-research questions, a qualitative method is preferred to a quantitative one precisely because of its freedom to find more information. Second, the type of interview is described. For the same reason, a semi-structured interview can guarantee depth information, as it is necessary to investigate the use of platforms by companies during the innovation process, a niche among the various benefits that they bring. Third, the data collection method is described, from the creation of a database useful to contact the right companies to the contact method. Fourth, the reason behind each of the interview question links to the sub-research questions is described in order to be able to answer the research question. In the end, this paragraph is characterized by the qualitative data analysis of the answers collected.

3.2.1. Research Method: a Qualitative Research

To achieve the aim of the Master Thesis a qualitative research approach is chosen, which is often associated with an interpretive philosophy. This type of research is useful for researchers that need to make sense of the subjective and socially constructed meanings expressed about the phenomenon being studied. Many varieties of qualitative research commence with an inductive approach to theory development, where a naturalistic and emergent research design is used to build a theory or to develop a richer theoretical perspective than already exists in the literature. Instead, others start with a deductive approach, to test an existing theory using qualitative procedures. During this research, both of these methods were used in order to be able to answer each sub-research questions. Data collection is non-standardized so that questions and procedures may alter and emerge during a research process that is both naturalistic and interactive. The success of the researcher's role is dependent not only on gaining physical access to participants but also on building rapport and demonstrating sensitivity to gain cognitive access to their data (Saunders, Lewis, & Thornhill, 2007).

3.2.2. Type of interview

As qualitative research, the type of interview can influence the result of the data collection. Interviews may be highly formalized and structured, using standardized questions for each research participant or they may be informal and unstructured conversations. In between, there are intermediate positions depending on the level of formality and structure use. Semi-structured and in-depth interviews are not standardized. These are often referred to as qualitative research interviews. In semi-structured interviews, the researcher has a list of themes and possibly some key questions to be covered, although their use may vary from interview to interview. The order of the questions may also be varied depending on the flow of the conversation and on the other hand, additional questions may be required to explore the research question and objectives given the nature of events within particular organizations. The nature of the questions and the ensuing discussion need that data have to be captured by audio-recording the conversation.

This type of interview fits very well for the research purpose of this research because of the exploratory nature of this study. The intention to understand the reasons for the decisions that the research participants have taken or for their attitudes and opinions needs a semi-structured interview. Interviewees may use words or ideas in a particular way, and the opportunity to probe these meanings will add significance and depth to the data collected. They may lead the discussion into areas not previously considered but which are significant for the understanding and which help to address the research question and objectives, or indeed help to formulate such a question. Interviews also afford each interviewee an opportunity to hear herself or himself thinking aloud

The Research

about things she or he may not have previously thought about. An in-depth or semi-structured interview is likely to be the most advantageous approach to attempt to collect data in different circumstances. Another reason because it fits very well for this research is the complexity and the open ended nature of the questions and the logic of questioning may need to be varied sometimes (Saunders, Lewis, & Thornhill, 2007).

3.2.3. Identify companies, database creation and first contact

In order to have useful sources for research, the companies which use Enterprise Social Platforms were first identified. In order to do this, six of the main platforms were identified according to reports conducted by MarketWatch, Global Industry Analysis Inc., Persistence Market Research, IDC, Credence Research and Markets and Markets.

The platforms are:

- Slack;
- Workplace by Facebook;
- Yammer;
- Jive;
- Webex by Cisco;
- Google Suite.

On the websites of these digital companies, there are Customer Stories or Case Studies in which the organizations that are taking advantage of these platforms have told their approach to technology, their experience and the benefits obtained. For research purposes, a database has been created, made up of companies whose Customer Stories and Case Studies are present on the websites of the companies offering the platforms. The number of companies in the database is 331 (three hundred and thirty-one companies). Table 2.1 shows an example of the database.

Table 3.1: Example of the database of companies that use Enterprise Social Platform.

Company Name	Platform	Market	Web Site Link	Innovation ⁵	Contact Name
Company A	Slack	Transportation and storage	www.companyA.com	1	Manager A

⁵ Innovation: 1 means that the company has an innovative spirit, 0 means that the company has not an innovative spirit.

Company B	Workplace	Real estate activities	www.companyB.com	0	-
...

The database includes the company name, the platform used by the company, the market/sector to which it belongs and the website link. Then the innovative spirit of the companies in the database was analyzed, based on the sector and the intrinsic characteristics of the company. Thus, 264 (two hundred sixty-four) organizations were identified. Of these innovative companies, 236 (two hundred and thirty-six) were contacted, due to technical problems related mostly to finding access to an internal contact in the company. The companies were contacted by email. Mostly through general information contact, press media office contact, customer service and direct employee contacts. In addition, some employees were contacted on LinkedIn. Thus, it was possible to complete the database with the name of the contact with which to plan and conduct the interview.

3.3. Interview Questions

This paragraph focuses on the reason behind the interview questions. To conduct a semi-structured interview, it is necessary to have a body of questions to follow to gathering information about the research topic from various points of view.

First, identify the person to be interviewed is the initial key. For this research, based on the concept of studying the behavior of a company during the innovation process through an Enterprise Social Platform, it was not easy. Different companies have different organization charts and structures. By size, by geographic location and also by market. Starting from this premise, the introduction letter asked to be able to interview a person within the company who would manage the innovation process, therefore, if present, the innovation manager. However, as mentioned above, the presence of Enterprise Social Platform in the research purpose made it possible to take into consideration other reference persons within the company to be interviewed. In fact, who better than the managers who strongly wanted to implement this solution in the company may be able to understand how this tool works. In addition, in large companies, there is a person that deals with managing knowledge. And in large companies, where Enterprise Social Platforms are used, this same person is at the forefront of managing the platform, a tool used in fact for sharing knowledge within the company. Therefore, following an email conversation, it was decided to

The Research

agree to interview these two types of different people, both able to provide an adequate overview of the use of Enterprise Social Platform in the innovation process. Then, each interview question was created in order to be able to answer to the sub-research questions. However, to start the conversation, the first question of the interview was asked to introduce the company, to understand its size and market positioning. These variables and the number of employees could help to classify the companies that participated in the interview in different categories. So the first interview question is:

IQ1: "Please give a short overview of your company in terms of main fields of business, products, size..."

Second, in order to be able to answer at the first sub-research question:

SRQ1: "Do companies include employees, customers, suppliers, brand ambassadors, competitors and business partners in the innovation process?"

The second interview question aims at understanding the general innovation process in the interviewed companies. It was asked to divide the innovation process into phases and to position the different actors involved, both internal and external, in every single phase. Thus, the second interview question is:

IQ2: "In according to the literature the innovation process is defined by three main phases: ideation, development/testing and launch. Which actors are involved in the innovation process and which phases in your company?"

Third, to understand the different types of innovation that Social Media can influence it is necessary to analyze the answer of two different interview questions because each company influences the answer to this question through the market in which it works. So, in order to be able to answer at the second sub-research question:

SRQ2: "What are the types of innovation that Social Media influence?"

The third interview question is asked:

IQ3: "Can Social Media influence the innovation process?"

In fact, IQ3 is a general question about the relationship between Social Media and innovation. Linked with the IQ1, is it possible to define the types of innovation influence by them.

Fourth, to answer to the third sub-research question which consists to understand the different tools of Social Media used by companies during the innovation process:

SRQ3: "What are tools used by companies to improve innovation?"

The fourth interview question was asked to managers, which is:

IQ4: “Which tools do you use in your company during the path of innovation? At what stage of the process do they take part? “

The second part of the question will be analyzed later.

Fifth, the research focuses on Enterprise Social Platform. Since the fourth question of sub-research was very generic, it was decided to use the same generic form for the interview question, so that we could give space to the conversation to make the right sense, case by case. So, to answer to the fourth sub-research question:

SRQ4: “How can Enterprise Social Platform facilitate innovation?”

The interview question asked is:

IQ5: “How do the Enterprise Social Platforms facilitate innovation in general? And in your company? You could give me some examples ...”

The presence of examples explained provides a valid point of view to actually understand in which contexts the platform is applied when we are talking about innovation.

Sixth, as mentioned before, Enterprise Social Platform is a particular type of Social Media, so the research needs to understand in which stage of innovation process it is positioned, to be able to better manage this tool. To answer to the fifth sub-research question:

SRQ5: “At what stage of the innovation process is the Enterprise Social Platform positioned?”

The interview question asked is the second part of IQ4:

IQ4: “Which tools do you use in your company during the path of innovation? At what stage of the process do they take part? “

This question provides a range of generic Social Media during the innovation process but knowing that the companies interviewed use Enterprise Social Platform is possible to reach the aim of the sub-research question.

Seventh, once become aware of the use of the platform during the innovation process, it is interesting to understand what are the obstacles that its diffusion and use meets along the way. So, to be able to answer the sixth sub-research question:

SRQ6: “What are the challenges and barriers in adopting Enterprise Social Platforms in innovation management?”

The Research

The interview question asked is:

IQ6: "What are the challenges and barriers encountered in the adoption of the Enterprise Social Platform in innovation management?"

As mentioned above, according to the literature, there are different challenges and barriers to overcome to reach and to obtain a great result through the use of the platform for this specific purpose. However, some coincide with the same challenges that hinder the use of the platform itself and for the sharing of knowledge within the company.

Eighth, in the end, the research conducted wants to explain how to better manage Enterprise Social Platform in innovation management, through overcoming the obstacles or through different use that nobody before had thought. Thus, to answer to the seventh sub-research question:

SRQ7: "How can managers best manage Enterprise Social Platform for innovation process?"

The interview question asked is:

IQ7: "How can the platform be better managed in the innovation process?"

Once collected the answers to all these interview questions from managers of companies that have a strong innovative spirit and use Enterprise Social Platform it will be possible to answer the research question:

RQ: "How do companies become more innovative using the Enterprise Social Platform?"

This chapter explained the reasons behind the interview questions and it linked them to the sub-research questions. The next step is about the analysis of the data collected through qualitative interviews, and it tries to explain the complexity of the Enterprise Social Platform in a turbulent environment as the innovation process.

3.4. Qualitative Data Analysis

According to Morse (1994), the cognitive processes involved in qualitative research is divided into four steps to help researchers to better understand how the qualitative data bring findings and generate new knowledge.

- Comprehending the phenomenon under study;
- Synthesizing a portrait of the phenomenon that accounts for relations and linkages within its aspects;
- Theorizing about how and why these relations appear as they do;

- Recontextualising, or putting the new knowledge about phenomena and relations back into the context of how others have articulated the evolving knowledge.

To achieve the Recontextualisation all of the previous steps are necessary. The first step, the Comprehension, is the beginning of the research. Through an analytical literature review, it was possible to outline the current state of the art in this field. Then the next step is to collect the data and begin to understand it, in order to know the phenomenon under study. Then, it is necessary to synthesize a portrait of the phenomenon by linking the aspects that characterize it. Only in this way can new knowledge be added to the phenomenon studied. This chapter focuses on the second and third steps of this definition given by Morse (1994). Before synthesizing the portrait of the use of Enterprise Social Platform through the innovation process, it can be useful to analyze the sample of companies used to gathering information, to give an overview of the characteristics of them in terms of business, size, market, number of employees, etc.

As mentioned before, 236 (two hundred and thirty-six) companies on the database created were contacted. Of this number, 9 (nine) companies have participated in the research. Table 3.2 shows the characteristics of these companies.

Table 3.2: Characteristics of interviewed companies.

Company	# of employees	Size	Market
Company A	6700	Large	Insurance
Company B	20	Small	Advertising
Company C	152	Medium	Food Retail
Company D	1600	Large	Telecommunication
Company E	500	Large	Technology
Company F	4000	Large	Technology
Company G	<50	Medium	Fashion Manufacturing
Company H	150	Medium	Food Manufacturing

Company I	>40000	Large	Market Research
------------------	--------	-------	-----------------

These firms operate in different fields of business, like Insurance, Advertising, Market Research, Food Retail, Telecommunication, Food and Fashion Manufacturing and Technology. Five of these companies are large companies, only one small and three of them are medium-sized companies. The number of employees varies from a minimum of twenty to a maximum of about forty thousand. Three of these nine interviews were conducted via internet call, instead, the other six were conducted by answering the interview questions, mentioned above, by email. Obviously, it was possible to gather more information through the interviews conducted in a semi-structured way via internet call, because if something interesting appeared during the conversation it was possible to focus on that.

3.4.1. Actors in the innovation process

By analyzing the answers to the second interview question (IQ2), it was possible to identify some key aspects that have appeared more than once. First of all, to be able to answer:

SRQ1: “Do companies include employees, customers, suppliers, brand ambassadors, competitors and business partners in the innovation process?”

It is necessary to verify through the study the findings in the literature review. As mentioned in the paragraph “Actors in the innovation process” in the second part of the Master Thesis, several participants are included in the innovation process. The first distinction is between internal and external actors. The study can confirm this theory because it is possible to outline the presence of both of them. In particular, a key aspect appeared is the possibility to have both formal and informal teams as internal actors. The informal team can contribute to the innovation process thanks to its possibility “to operate outside the traditional barriers of a structured company, with a degree of freedom that allows them to experiment and implement with a timeframe that cannot be achieved by their standard operating model. It works as an R&D department both from a technological standpoint and from a product innovation standpoint” (from company A). As a formal team instead it is possible to refer to the R&D and Marketing departments. As mentioned in the literature review, their collaboration, characterized by two complementary roles, ensures that the company is able to advance in the innovation process. Marketing has the role of achieving a deep understanding of customer needs and direct R&D efforts accordingly. R&D must identify promising technology, then marketing will have the responsibility of turning back to customers and convincing them that the features of the chosen technology meet their needs, in the case of product innovation. From the interviews appear also “Product Teams”, with more focus on the

development of the product than directly to the research of new technologies or market research. These tasks are however done by other internal departments or left in outsourcing. Another key aspect appears from the interviews is the presence of the gatekeeper (Figure 3.2). Taking up the definition of gatekeeper it is interesting to compare it with a description of one manager did to his colleagues:

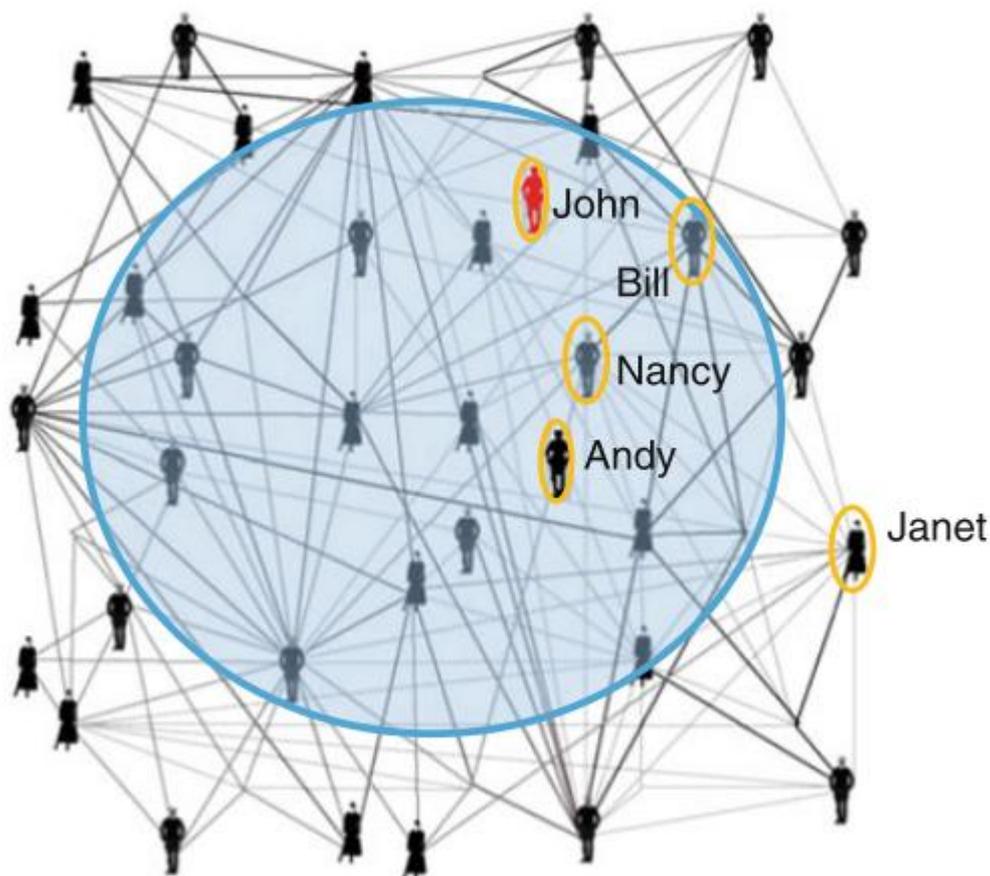


Figure 3.2: Gatekeepers' role in technical problem solving (Cantamessa & Montagna, 2016).

“Gatekeepers are employees who are particularly apt in accessing knowledge that exists outside the firm and in interpreting it in a way that is of practical use” (Cantamessa & Montagna, 2016).

“Gatekeepers are people who realized and fell in love with the changes taking place in the company and had already understood them naturally, became bearers of the advantages that these changes can bring. They are persons who were spokesmen for the change to calm people” (from company G).

It appears that these people, with technical and managerial competences, are very important for innovation management within the company. In fact, the presence of gatekeepers can influence

The Research

the absorptive capacity, which is the ability of the firm to gain external knowledge (Cohen & Levinthal, 1990). In turn, they influence organizational learning, which is the change in the knowledge base of a firm. Analyzing the answer from the interview conducted with company H appears that a key actor in some situations is the entrepreneur. "I would make a distinction here between a multinational and family-run company. In a multinational, the actors involved are mainly R&D, research and partially Marketing. While as far as a family business is concerned, we have to put the entrepreneur in the first person. And then next to these figures here who are in any case geniuses with regards to the product, I would attack R&D and Marketing. R&D that always has a proactive approach in recreating products that are in any case channeled towards the single entrepreneur's vision and Marketing helps to outline and consolidate the offer" (from company H). So, this means that in some family-run companies most of the innovation work is led by the entrepreneur, who is a genius in his field of business. Still analyzing internal actors, from the interviews appears that all employees can contribute to the innovation process in a very informal way. As reported in an interview: "All employees can collaborate during the ideation stage through Enterprise Social Platform" (from company I). This means that Enterprise Social Platforms help companies during the initial phase of the innovation process: the ideation stage.

As external actors, it is possible to identify customers. One of the interviewed companies does the design phase with its customers through co-design. According to Lau, Tang and Yam (2010), in a manufacturing sector product co-development with customers directly improves product performance. In the end, this sentence can give another perspective of additional actors positioned along the innovation process: "in innovation, research institutes are usually used, very important for carrying out qualitative and quantitative phases" (from company H). The importance of this institution is explained below in another sentence of the same interview: "therefore, during the development process, we use research institutions and groups in such a way as to remove subjective thinking" (from company H).

Appendices 1 summarizes the answers collected from all the managers.

3.4.2. Types of innovation influenced by Social Media

In order to be able to answer:

SRQ2: "What are the types of innovation that Social Media influence?"

To answer this sub-research question IQ3 is asked to managers. During the analysis, it is necessary to view the answer of IQ1 which gives an overview of interviewed companies to understand in which markets Social Media can influence innovation. Social Media, in general, can help innovation in different ways. Six managers answered that Social Media is very useful during the market analysis. It can help both product innovation and service innovation. Social Media is used

by companies to identify customer needs and to provide valuable insights to forecast future trends. An example is given by the answer of company B which operates as a service company: "Social Media is valuable for research, insights and to be "in the know" (from company B). And by the answer of company C which is a manufacturing firm: "the company needs to be agile to ride the wave of these trends" (from company H). Unfortunately, it was not possible to divide the types of innovation in radical and incremental during the interviews. Moreover, four companies answered the questions giving more importance to the test phase. "Social Media are used to "pilot" and test new ideas" (from company A) or "uptake/testing often occurs on vial Social Media channels" (from company F). It should be noted that the four companies that paid attention to the use of Social Media in the testing phase operate in service sectors. In the end, three companies use Social Media after the launch phase, for example "at the company level we shared content on company channels with video, file, image or link to the Social Media channels of other companies to explain for example the use of the products and the benefits they could give" (from company G). Two of these three companies are manufacturing companies, and they use Social media for product innovation.

3.4.3. Social Media tools for innovation

In order to be able to answer:

SQ3: "What are tools used by companies to improve innovation?"

The first part of IQ4 was asked to managers. The answers collected results on the use of Enterprise Social Platforms during the process of innovation. For example, company A uses collaborative platforms to allow employees to collaborate in a better and faster way during all the phases of a project. Or to give one another example, company B uses an Enterprise Social Platform to build divided project groups in different chats where employees can share insights, give updates on projects, etc. It uses the platform also to eliminate long and annoying email as it was mentioned in the interview with company G.

Appendices 4 summarizes the answers collected from all the managers.

3.4.4. Enterprise Social Platform in different stages of the innovation process

The second part of IQ4 helps to outline in which phases companies use the platform more. So, it is possible to answer to:

The Research

SRQ5: "At what stage of the innovation process is the Enterprise Social Platform positioned?"

As mentioned above, the innovation process is divided into three stages: (1) ideation, (2) development/test and (3) launch. Appendices 2 shows the answers collected from all the managers. It shows the flow of the innovation process in their company. The answers collected reflect the use of these platforms among all of these stages. Six of nine companies use Enterprise Social Platforms during all these stages. Managers answered the question underlining the concept of improving project works through innovative tools capable to connect employees in an easier and faster way. According to the innovative spirit of the companies interviewed and according to the answers collected, Enterprise Social Platforms help Project Management in an innovative environment. As an example, the manager of company E said: "We use Enterprise Social Platform to collate evidence - this can be accessed remotely too which enables us to undertake projects with people outside of the main office too. For example, one of my current Lab partners is based in a distant country. We use a specific tool of the platform for note-taking and a separate project management platform for setting weekly priorities." There is another company interviewed that integrates Enterprise Social Platform with Project Management Platform. "Some of our suppliers, who deal much more strongly with us than project management, have adopted an Enterprise Social Platform integrated with a project management program that we use (taking it from us). This integration allows them to follow our projects very well and to communicate with each other in a creative and easy way about their projects without losing track of what they said, but with the freedom that for example an email or documents exchanged can't give." (from company G). In addition, the manager of company F said: "Multiple software packages and internally developed software are both leveraged throughout the process."

Three of the nine interviewed companies focused their answer on the ideation stage. In these cases, analyzing the answers it is possible to identify the concept of how to build a community as a key factor. "Our Enterprise Social Platform discussion is active and links customer contact function to product development function feeding innovation around current services" (from company D). In addition, the manager of the company I said: "There is a couple of communities on our Enterprise Social Platform that has been built and where this is one about anybody interested in innovation topics. They have this community and they are sharing best practices, interesting articles and addressing questions. So there is a lot of interaction between everybody in the company that is interested in the title of innovation. So we'll take from an internal perspective social, Social Media is really connecting people. So increasing I would say the knowledge of the company by putting them together and sharing solutions, sharing best practices, asking questions". Recalling the large size of the company I, it is interesting to underline how important it is to allow employees to connect to each other in an innovative context if the aim of the company, which has thousands of employees in more than one hundred countries, is to increase the base of its knowledge.

Appendices 3 and 4 show the answers collected from all the managers.

3.4.5. Can Enterprise Social Platform facilitate innovation?

In order to be able to answer:

SRQ4: “How can Enterprise Social Platform facilitate innovation?”

In addition to the previous considerations on its use in the different innovation stages, to achieve a better understanding of the value of the platform for this purpose, IQ5 was asked to managers. The answers collected from six of nine interviews focus the attention on the ability of Enterprise Social Platforms to improve communication. From a manager's point of view, communication is a key factor in innovation management. This means that improved internal communication can help the company during the innovation process, even if three of the nine companies do most of the work through face-to-face meetings. “Enterprise Social Platform helps us eliminate emailing. They are an easier way of communicating and share inspiring content like videos, gifs, links and pictures. But they don't replace the magic that can happen when you get a group of people working together solving a task in a room” (from company B).

So it can be said that the presence of Enterprise Social Platforms is not a sufficient and necessary condition for improving innovation in companies. But inevitably its presence affects the behavior of the individuals who use it. “I believe that sharing is a very positive factor and it helps a lot the company in order to collect feedback from all the participating actors. However, within a company, you have to consider that there are people who are introverted and others who are extroverts. However, there are people who feel comfortable presenting a new product or a new idea. While others don't always say 100% of what they think. So in the end, in my opinion, these types of Enterprise Social Platforms still help to collect all the feedback that wouldn't be collected in the classic face-to-face meetings” (from company H). The meaning of the change in social behavior could be seen as decisive in the collection of new ideas by more people through the Enterprise Social Platforms.

Appendices 5 shows the answers collected from all the managers.

3.4.6. Challenges and barriers in adopting ESPs in innovation management

In order to be able to answer:

SRQ6: “What are the challenges and barriers in adopting Enterprise Social Platforms in innovation management?”

The Research

IQ6 was asked to managers. From data collected it is possible to divide the challenges and barriers into three macro-categories: (1) cultural and organizational barriers, (2) organizational strategy and (3) technical barriers.

Within the first category appears how human behavior influences the performance of the platform in general and indirectly for innovation purposes. For example, “many employees don’t use Enterprise Social Platform “fluidly”. They log on now and then as if they were reading a newspaper or something” (from company B) or “the adoption of the tool doesn’t always fit everybody’s perfect working model. Some are more reluctant to change than others” (from company C). For now, two main problems have been listed, the lack of skills in the correct use of the platform and the reluctance to change one's habits, which in other words can be identified as the fear of change, for example, came out of the interview with the company G: “12% of the challenges and barriers in adopting Enterprise Social Platform is the fear of change”. Then, the interview continues: “8% is not feeling fit to face technology and the fear of not knowing how to use it. There are other two fears: the first one is that this new technology is something more than the service offered by classic emails; the second one is the fear of more work to do”. Concerning the fear of more work, a manager of company E answered the question of the challenges and barriers as follow: “Social Media has created a huge culture of being able to 'do an action' really fast, whether it be liking a post, or leaving a comment, that when any further action is required, people often do not want to put in the additional time or effort.” So in itself, the fear of doing more work can be seen in two aspects: the first of not posting or sharing anything because it is not part of the job, while the second is posting and sharing only if they don't cost extra effort. However, these problems indirectly create what emerged from one other interview, namely the inconsistency of employee participation on the platform. “Inconsistent use across participant base” (from company F).

The second macro-category is organizational strategy. Analyzing the responses, it emerged that it would be possible to see the platform as a tool of creativity and not only as a communication tool and how the use of the platform focuses only on operations and not for the strategic corporate vision. “Employees don’t see Enterprise Social Platform as a creative tool, this is mainly the older generation at the agency, just a source of information” (from company B) and “Usage of Enterprise Social Platform is fully organic and do not focus on our strategic programs” (from company D).

In the end, technical barriers are the last macro-category. resuming the interview with the manager of company G, it is indicated that according to his point of view 80% of the challenges to be faced concern the technological infrastructures complementary to the platform: “80% technological barriers and problems related to infrastructure and assets complementary to the platform” (from company G). Instead, from company E: “Because there are so many people on Social Media, it is hard to find the right people to talk to in the first place. You need to filter prospective interviewees/testers before proceeding which adds another blocker in the innovation

process. This means we often find that despite say 100 people wanting to get involved, maybe only 10% of those fill in our filter/screener survey, then only 5% of them actually follow through. There are also some challenges in terms of the software missing some functionality that we feel would be useful in our process - but an element of innovation is making do with fewer resources.” It is interesting to see that the two managers have two opposing points of view both linked to technological problems. The first, from company G, focuses on complementary assets while the second, from company E, focuses on the functionality of the software platform. It is clear that both these aspects are relevant in the implementation phase of the platform.

Appendices 6 shows the answers collected from all the managers.

3.4.7. The manager role

In the end, to answer to the last sub-research question:

SRQ7: “How can managers best manage Enterprise Social Platform for innovation process?”

IQ7 was asked to managers. From the qualitative data collected appears that most of the answers outline importance to empower and inform people to best manage the platform in the innovation process.

From the interview with the manager of the company I, it was possible to realize a framework to better manage the platform in the ideation stage: (1) to create online communities with clear innovation purposes, (2) to motivate employees to join and contribute to a community, (3) to nominate community ambassadors to manage each group and (4) to involve top management in the conversations.

“First of all, people should design the product and have a clear view of what the purpose of that community, a clear boutique. So, the group has a clear purpose and people know what to expect on this space” (from company I). The manager of companies H also focused on this point: “The important thing is to try to empower and inform all the participating actors for the development of innovation in this case through a RACI. which stands for Responsibility, Accountability, Control and Information. Through these 4 pillars, you could really control, empower all the people involved in the process so that they still feel 100% involved in this process” (from company H).

“Second, you need to build up a good marketing plan. That means how are you going to recruit people will build your membership. How are you going to buy promoting it over users by promo, you know, emails and people can click through and come to that community and make themselves a member and then they have alerts coming in when there is relevant stuff coming from that

The Research

community. So you need to have a good marketing strategy to build up that community” (from company I).

“Third, there's a big important role for professional communicators to simply to start the conversation to make sure, you know, at the beginning is the right hook the right content there and people might put themselves in and that the promote two sides. There is a role for professional communicators to play this kind of Ambassador or to committed to the community, like community ambassadors” (from company I). The managers of companies B, E and F also focused on this point. “I think we can be better to introduce new people that join the agency to what it's supposed to be used for. And show how it's used in the best way. I think we take it for granted that people are familiar with these tools but most are not” (from company B). “ESPs, in my opinion, are very difficult to contact and share feedback with because of their size and customer numbers” (from company E). “Cultural efforts to make use of it the norm is paramount” (from company F).

“In the end, if the leader shows the way, automatically, you will have people going there. So I think the activation of the leader is important. What I would say the top management, in this case, is active on these sites and automatically his whole community will engage around that. So there is a big role to play by the leadership” (from company I).

Appendices 7 shows the answers collected from all the managers.

4. Discussion

This part of the Master Thesis compares the results of the research with the literature review conducted in the second chapter.

As previously said, the companies present in innovative markets evolve according to the evolutionary theory of the firm (Nelson and Winter, 2002). According to this theory, organizational learning is one of the changes occurred by path-dependency. It consists of a change in the knowledge base of a firm and managers have to pay attention to the competency trap (Zhou & Wu, 2010). As mentioned in the chapter “the evolutionary theory of the firm” in the literature review, organizational learning depends on the absorptive capacity (Cohen & Levinthal, 1990) which is the ability of the firm to gain external knowledge. Innovation is a complex process divided into three main stages, (1) ideation, (2) development/test and (3) launch stage (Cooper, 2008), in which different actors, both internal and external, are involved. From the literature appears that internal actors are mainly represented by employees of the R&D and Marketing departments and gatekeepers (Cantamessa & Montagna, 2016). The research confirms these findings, in particular appears the possibility to have formal or informal teams in different companies. The informal team can contribute to the innovation process thanks to its possibility “to operate outside the traditional barriers of a structured company, with a degree of freedom that allows them to experiment and implement with a timeframe that cannot be achieved by their standard operating model. It works as an R&D department both from a technological standpoint and from a product innovation standpoint” (from company A). Instead, as a formal team, it is possible to refer to R&D and Marketing departments. As mentioned in the literature review, their collaboration, characterized by two complementary roles, ensures that the company is able to advance in the innovation process. Marketing has the role of achieving a deep understanding of customer needs and directs R&D efforts accordingly. R&D must identify promising technology, then marketing will have the responsibility of turning back to customers and convincing them that the features of the chosen technology meet their needs, in the case of product innovation. As mentioned above, the other internal actor can influence innovation within a company is the gatekeeper. According to Cantamessa and Montagna (2016), gatekeepers can influence organizational learning. As the qualitative data analysis shows, the interviewed companies consider these people, with technical and managerial competences, as very important for innovation management within the company. “Gatekeepers are people who realized and fell in love with the changes taking place in the company and had already understood them naturally, became bearers of the advantages that these changes can bring. They are persons who were spokesmen for the change to calm people” (from company G). From the interviews appears that all employees, as internal actors, can contribute to the innovation process in a very informal way. As reported in an interview: “All employees can collaborate during the ideation stage through Enterprise Social Platform” (from company I). This means that Enterprise Social Platforms help companies during the initial phase of

Discussion

the innovation process: the ideation stage. According to Lau, Tang and Yam (2010), as external actors, it is possible to identify customers through a co-development. The research confirms their presence, in fact, one of the interviewed companies does the design phase with its customer through co-design. In the end, the research confirms the presence of an additional actor: the research institutes. "In innovation, research institutes are usually used, very important for carrying out qualitative and quantitative phases. Therefore, during the development process, we use research institutions and groups in such a way as to remove subjective thinking" (from company H).

So, innovation is a complex process and depends on different actors, which work in different phases. The result of their work could influence a new product or a new service and also could improve the way in which they collaborate with colleagues and external stakeholders. During the last years companies increase this collaboration by adopting new technologies such as Social Media, which provides a channel for the exchange of information and sharing of views through a virtual platform (Asio, 2015). For example, Facebook allows companies to have direct contact with customers to analyze their feedback and to promote a new product. Moreover, as a part of their digital transformation companies are increasingly adopting Enterprise Social Platforms to increase communication, collaboration and knowledge sharing within an organization (Kirchner & Razmerita, 2019). According to Qi and Chau (2018), Enterprise Social Platform usage significantly influences knowledge creation and knowledge sharing and it also has a positive and direct effect on organizational learning. Their study shows that both knowledge creation and knowledge sharing influence organizational learning. In addition, from the assumption that knowledge sharing can be a key driver of innovation (Rahman, Nuwangi, & Singh, 2020), it is possible to support the thesis for which companies could benefit from an indirect effect from the Enterprise Social Platform to become more innovative. To confirm this thesis, the answers collected from six of nine interviews focus the attention on the ability of Enterprise Social Platforms to improve communication and, from a manager's point of view, communication is a key factor in innovation management. This means that improved internal communication can help the company during the innovation process, even if three of the nine companies do most of the work through face-to-face meetings. "Enterprise Social Platform helps us eliminate emailing. They are an easier way of communicating and share inspiring content like videos, gifs, links and pictures. But they don't replace the magic that can happen when you get a group of people working together solving a task in a room" (from company B). Moreover, according to Herzog and Steinhuser (2016), Enterprise Social Platforms have the potential to support the different stages of the innovation process. In particular, their study shows that Enterprise Social Platform usage creates impacts concerning the information processing itself, daily work outputs, and measurable outcomes at the organizational level. Nevertheless, Enterprise Social Platform use improves internal communication within the company and it has an impact mostly in the ideation stage (Recker, Malsbender, & Kohlborn, 2016). The research confirms that, in fact, the qualitative data analysis shows that interviewed companies use the platform during the innovation process. According to (Recker, Malsbender, &

Kohlborn, 2016) interviewed companies use the platform for the ideation stage. This result is in line with the information processing impact of (Herzog & Steinhuser, 2016). And the results of the Master Thesis show also that interviewed companies use the platform to improve project work performances through its tools capable to connect employees in an easier and faster way, so it improves daily work outputs, as it is shown in the research conducted by Herzog and Steinhuser (2016). But, as mentioned above, three of nine companies do most of the work through face-to-face meetings and “Enterprise Social Platforms don’t replace the magic that can happen when you get a group of people working together solving a task in a room” (from company B). So it can be said that the presence of Enterprise Social Platforms is not a sufficient and necessary condition for improving innovation in companies. Nevertheless, its presence influences the behavior of the employees who use it. Because within a company there are introverted people and others who are extroverts. Some people feel comfortable presenting a new product or a new idea, while others do not always say 100% of what they think. Enterprise Social Platforms, thanks to their Social Media features, help to collect all the feedback from introverted people that would not be collected in the classic face-to-face meetings (from company H). Thus, the collection of new ideas by all the employees depends on their social behavior and Enterprise Social Platforms help some of them to be more comfortable sharing their knowledge and their ideas.

However, according to Razmerita, Kirchner and Nielsen (2016), individual factors as “Lack of trust in colleagues and fear knowledge will be misused” and “Lack of time” are among the main barriers to knowledge sharing within the company. Moreover, according to collected answers, additional effort and fear of change are considered as a barrier for the use of Enterprise Social Platforms. So, on one hand, Enterprise Social Platforms help people to share knowledge, but on the other hand, individual factors of the same people are seen as a principal barrier for the use of the platforms. Managers have to overcome this social conflict if they want the best use of the platform's capabilities to increase their company's knowledge base. They have to consider also other challenges to the innovation process. According to Recker, Malsbender and Kohlborn (2016), “Missing standards or examples for the presentation of an innovative idea”, “Missing standards for the type of an innovation idea”, “Missing structures or processes for feedback”, “Missing presence of leadership on the platform” and “Missing recognition of employees’ innovation efforts” are the main barriers of the use of Enterprise Social Platform during the innovation stage. Instead, from the analysis of data collected, it is possible to divide the challenges and barriers into cultural and organizational barriers, organizational strategy and technical barriers. Compared to the results obtained by Razmerita, Kirchner and Nielsen (2016) and Recker, Malsbender and Kohlborn (2016), some interviewed managers reported that technical problems are very important for them and their organizations. In particular, two managers have two opposing points of view both linked to technological problems. The first, from company G, focuses on complementary assets while the second, from company E, focuses on the functionality of the software platform. It is clear that both these aspects are relevant in the implementation phase of the platform.

Discussion

Moreover, to extract all the surplus from the use of the platform in innovation management, it is necessary to improve capabilities by acquiring expert staff or through refresher courses for internal employees, even if this process is expensive in terms of money and time. So, in order to overcome the cultural and organizational barriers, the research confirms the findings of Muninger, Hammedi, & Mahr (2019). According to their study, various capabilities may apply to the use of Social Media to support innovation processes. As mentioned in the literature review, they found that the Social Media Manager is the key figure who coordinates communication across different teams. In fact, from the qualitative data analysis appears that managers have to follow four steps to manage Enterprise Social Platform in the ideation stage in a company: (1) to create online communities with clear innovation purposes, (2) to motivate employees to join and contribute to a community, (3) to nominate community ambassadors to manage each group and (4) to involve top management in the conversations. The community ambassadors can be represented by the Social Media Manager in the framework realized by Muninger, Hammedi, & Mahr (2019). In a small company, maybe it is too expensive to consider to have a full time community ambassador or Social Media Manager. Its role can be replaced by the gatekeeper

5. Conclusions

The last chapter of the Master Thesis is about the conclusions of the research work. The first paragraph shows a summary of the findings of the qualitative data analysis, mentioned above. The second paragraph explains the research limitation and future work. The last paragraph regards the implications for research and managerial perspective.

5.1. Summary of findings

This paragraph summarizes the findings of the conducted study. As mentioned above, the innovation process is defined in (1) ideation, (2) development/test and (3) launch phase. The qualitative data analysis shows that interviewed companies use the platform during the innovation process. In particular, they use the platform in the ideation stage and to improve project work performances. The actors involved in this process can be internal and external. As internal actors, the research finds that different companies can have informal or formal teams and the principal actors involved are gatekeepers, R&D and Marketing department employees and in general all the employees through Enterprise Social Platforms. As external, the research finds customers, through a co-development, and research institutes, very useful to have an external point of view of a new product or service.

Managers have to face several challenges and barriers if they want to adopt an Enterprise Social Platform in innovation management. From data collected, it is possible to divide them into three macro-categories: (1) cultural and organizational barriers, (2) organizational strategy and (3) technical barriers. The first category is characterized by (1.1) “the lack of skills in the correct use of the platform”, (1.2) “the reluctance to change one's habits” and (1.3) “the fear of more work to do”. The second category consists of how the platform is seen from top management. From the data analysis, it appears that two of nine interviewed companies perceive as challenges and barriers (2.1) the platform usage only to gathering information and not to produce creative content and (2.2) the platform usage only to operations and not to strategic programs. And the last category, the technical barriers, is divided into two parts: (3.1) complementary infrastructures and complementary assets of the platform and (3.2) the functionality of the software platform.

In the end, Enterprise Social Platforms can help companies to build communities around innovation topics. Employees, who join the community, can share best practices, interesting articles and addressing questions. Enterprise Social Platforms allow interactions between colleagues, who are interested in the title of innovation, in the company. Social Media is connecting people and from an internal perspective is important to achieve this aim. So putting people together, let them share solutions, sharing best practices and asking questions is possible to increase the knowledge base of the company.

5.2. Implications

This study discusses the use of Enterprise Social Platforms during the innovation process and proposes a strategy to allow managers to capture the platform value for innovation purposes in the ideation stage of the process. This paragraph describes the implications of the study both for the research and for managers.

5.2.1. Implications for research

By answering the sub-research questions, it was possible to identify the role of Enterprise Social Platforms during the innovation process. From a researcher's point of view, the study implied to consider all of the stages, not only the ideation stage, even if companies are used to focus their attention on that.

Analyzing companies' behaviors throughout the process, the study showed that there are two key aspects to consider in order to boost innovation on Enterprise Social Platforms. (1) The first is the use of Enterprise Social Platform during all the stages to improve project works through innovative tools capable to connect employees in an easier and faster way. (2) The second is the concept of building communities behind Enterprise Social Platform to involve people to share best practices, interesting articles and addressing questions in the title of innovation.

5.2.2. Managerial implications

From the managerial point of view, the research focuses on how to overcome the challenges and barriers that occur in the use of Enterprise Social Platform during the innovation process.

In order to overcome the cultural and organizational barriers, this study proposes four steps to manage the platform in the ideation stage in a company: (1) to create online communities with clear innovation purposes, (2) to motivate employees to join and contribute to a community, (3) to nominate community ambassadors to manage each group and (4) to involve top management in the conversations.

5.3. Research limitations and future work

This paragraph describes the research limitations and future work.

5.3.1. Research limitations

In sharing these findings and recommendations, the study cautions about the limitations. The research is exploratory and consists of semi-structured interviews to gathering information from managers of nine different companies. Only nine companies participated in the interview of two hundred and thirty-six that were contacted. The collection of data through interviews lasted 2 months, November and December 2019 only. A further limitation of the research is that only three out of nine interviews were conducted via web call, while the remaining six were conducted via email. This is a limitation because via a web call is possible to find more details than via an email interview.

5.3.2. Future work

Future work should consider companies' size or fields of business to evaluate the impact of Enterprise Social Platforms on innovation in a specific market. It should also consider the type of innovation that it was not possible to consider in this research: do Enterprise Social Platforms influence more incremental or radical innovations? Then, other future work should consider a quantitative analysis of data collected from this research. A quantitative analysis among employees of innovative companies on the use of Enterprise Social Platform in different stages of the innovation process and on the challenges and barriers that occurred from its usage could give an overview of what employees and managers think about the same topics. It could be interesting to analyze similarities and differences of thought and to propose an appropriate reference model to align the two visions as much as possible.

Appendices

Appendices 1

	Informal Teams	Gatekeepers	Formal Teams	All Employees	Customers	Other External Actors
Company A	Informal team as R&D, both from a technological standpoint and from a product innovation standpoint	The gatekeeper operates outside the traditional barriers of a structured company, with a degree of freedom that allows him to experiment and implement with a timeframe that cannot be achieved by our standard operating model				
Company B			Three full time creative	But everyone pitches in with their special skills during the process of creating a campaign		
Company C						NPI is all done out of our head office. Some fresh product development for shop is done locally
Company D			After the exploration, in the further analysis phase internal SMEs participates the process			
Company E			A member of the Innovation Team working through the project alone; a member of the Innovation Team guides a Lab partner through the process			
Company F			Product Teams			
Company G		Ambassadors: fall in love with new technology and calm other colleagues		More or less all the employees in a very informal way	Co-design with our customers	
Company H		Entrepreneur in first person who are in any case geniuses with regards to the product	R&D and Marketing	In the company internet we have a section called "ideas box", where everyone can insert ideas regarding improvement aspects of work or events that can be organized within the company		In innovation, research institutes are usually used, very important for carrying out qualitative and quantitative phases. Therefore, during the development process, we use research institutions and groups in such a way as to remove subjective

		thinking
Company I	Department of product leadership with input from technology and Engineering Department and Customer Service Department	All employees can collaborate during the ideation stage through Enterprise Social Platform Through the Customer Service Department

Appendices

Appendices 2

	1	2	3	4	5
Company A	Product definition	Implementation with new technologies and with new technological assets (eg. black box, Risk sensors...)	In the end of the chain, with innovative payment systems		
Company B	Create a campaign				
Company C					
Company D	Main focus is on our current business and solutions	The exploration is led by operational organisation	New opportunities are explored in collaboration with external partners		
Company E	Problem Validation	Solution Ideation	Prototyping	MVP	Second Validation of MVP
Company F					
Company G	Research and Development / Co-design	Prototyping and Sampling	Production		
Company H	Ideation	Business case	Development	Testing	Launch
Company I	Ideation	Input from Technological and Engineering Department or from Customer Service Department	Development		

Appendices 3

	Market analysis	Test	After launch
Company A	to identify needs, new or unknown	to "pilot" and test new ideas	
Company B	Social Media is valuable for research, insights and to be "in the know".		
Company C	They can provide hints on trends which can then be bought through our new product development		
Company D	It is used for market analysis	it could be used also for experimenting new services	
Company E	We utilise Social Media to source some of our testers for prototype testing		
Company F		uptake/testing often occurs on vial Social Media channels	uptake/testing often occurs on vial Social Media channels
Company G			at the company level we shared content on company channels with video, file, image or link to the Social Media channels of other companies to explain for example the use of the products and the benefits they could give
Company H	So you need to be agile to ride the wave of these trends		they help speed up the innovation process
Company I	we have using Social Media to build a network, in the company, around content around innovation around needs, identify need for the from the clients.		

Appendices

Appendices 4

	Project Management	Test	Build a community
Company A	We use collaborative private platforms, in the project management phase. Also, we are implementing a collaborative platform B2B2C that integrates in a social-like way the company, the agent and the final customer		
Company B	To help our project teams collaborate better we use Microsoft Teams. We have an agency chat which functions as our “intranet” and separate project based chats to share insights, give updates on projects etc. It helps us eliminate email.		
Company C			
Company D	POC and customer interviews I know are in use		Our Yammer discussion is active and links customer contact function to product development function feeding innovation around current services.
Company E	Google Jamboard (to collate evidence - this can be accessed remotely too which enables us to undertake projects with people outside of the main office too. For example one of my current Lab partners are based in Australia); Google docs for note-taking; Adobe Creative Cloud; Trello - very light touch for setting weekly priorities.	Google Hangouts - video calling, for remote sessions and remote testing; Google forms - for questionnaires; Prototyping tools (currently Marvel Prototyping);	
Company F	Multiple software packages and internally developed software are both leveraged throughout the process.	We rely on Slack for communication relevant to all five stages outlined above. We also have an internally developed platform that tracks projects	We rely on Slack for communication relevant to all five stages outlined above. We also have an internally developed platform that tracks projects

<p>Company G</p>	<p>Some of our suppliers, who deal much more strongly with us than project management, have adopted Webex Teams integrated with Asana, a project management program that we use (taking it from us). This integration allows them to follow our projects very well and to communicate with each other in a creative way of their projects in a very easy way without losing track of what they said, but with the freedom that for example an email or documents exchanged they can't give.</p>
<p>Company H</p>	<p>Google Suite</p>
<p>Company I</p>	<p>There is a couple of communities on our Enterprise Social Platform that have been built and where this is one about anybody that is interested in innovation topics. They have this community and they are sharing best practices, interesting article and addressing questions. So there is a lot of interaction between everybody in the company that is interested in the title of innovation. So we'll take from an internal perspective social, Social Media is really connecting people. So increasing I would say the knowledge of the company by putting them together and sharing solutions, sharing best practices, asking questions.</p>

Appendices

Appendices 5

ESP AND INNOVATION	
Company A	
Company B	It helps us eliminate emailing. They are an easier way of communicating and share inspiring content like videos, gifs, links and pictures. But they don't replace the magic that can happen when you get a group of people working together solving a task in a room.
Company C	Communication speed. The accelerant to 'everything' in the business.
Company D	Our Yammer discussion is active and links customer contact function to product development function feeding innovation around current services.
Company E	The main use of ESPs, in my opinion, is the use of the Google suite and its cloud storage/shared drives. As mentioned above we use the suite of products throughout the innovation process. A shared drive also allows all of the team to easily share resources and information, including gatekeeping functionality for sharing specific permissions with specific people. For our business, ESPs provide easy access to prospective customers. Through those platforms, we can reach out and chat with people who have the problem we're seeking to solve. Those people offer valuable insights that encourages innovation. The platforms are also valuable when recruiting people to test out prototypes and get early feedback.
Company F	We rely on Slack for communication relevant to all five stages outlined above. We also have an internally developed platform that tracks projects.
Company G	
Company H	We, first of all, are a context in which this type of development is evolving, it is becoming like a large multinational, step by step. Currently, however, most of it takes place through face-to-face meetings and then we have a whole network sharing, which is very, very important. Then on Hangouts there are chats dedicated to product development, so that you are always up to date on the latest developments. I believe that sharing is a very positive factor and it helps a lot the company in order to collect feedback from all the participating actors. However, within a company you have to consider that there are people who are introverted and others who are extroverts. However, there are people who feel comfortable presenting a new product or a new idea. While others don't always say 100% of what they think. So in the end in my opinion, these types of Enterprise Social Platforms still help to collect all the feedback that wouldn't be collected in the classic face-to-face meetings.
Company I	There is a couple of communities on our Enterprise Social Platform that have been built and where this is one about anybody that is interested in innovation topics. They have this community and they are sharing best practices. interesting article and addressing questions. So there is a lot of interaction between everybody in the company that is interested in the title of innovation. So we'll take from an internal perspective social, Social Media is really connecting people. So increasing I would say the knowledge of the company by putting them together and sharing solutions, sharing best practices, asking questions. So, we have using Social Media to build a network, in the company, around content around innovation around needs, identify need for the from the clients. So, I think this is the biggest contribution to from Social Media at the internal level.

Appendices 6

	Cultural and Organizational Barriers	Organizational Strategy	Technical Barriers
Company A			
Company B	Many don't use them "fluidly". They log on now and then as if they were reading a newspaper or something.	They don't see it as a creative tool, this is mainly the older generation at the agency, just a source of information.	
Company C	Adoption of the tool - doesn't always fit everybody's perfect working model. Some are more reluctant to change than others		
Company D		Usage of Yammer atm is fully organic and do not focus on our strategic programs	
Company E	Social Media has created a huge culture of being able to 'do an action' really fast, whether it be liking a post, or leaving a comment, that when any further action is required, people often do not want to put in the additional time or effort.	We also find that ESPs are less suitable for our process as it has to be incredibly flexible. Other areas in the business rely heavily on Trello and Jira for their workflow, but this isn't the case for my team.	Because there are so many people on Social Media, it is hard to find the right people to talk to in the first place. You need to filter prospective interviewees/testers before proceeding which adds another blocker in the innovation process. This means we often find that despite say 100 people wanting to get involved, maybe only 10% of those fill in our filter/screener survey, then only 5% of them actually follow through. There are also some challenges in terms of the software missing some functionality that we feel would be useful in our process - but an element of innovation is making do with fewer resources.
Company F	Inconsistent use across participant base.		
Company G	12% is the fear of change and 8% is not feeling fit to face technology and the fear of not knowing how to use it. There are other two fears: The first one is that this new technology is something more than the service offered by classic emails. The second one is the fear of more work to do.		80% technological barriers and problems related to infrastructure and assets complementary to the platform

Appendices

Company H	people must have skills to use these platforms. However, we still talk about realities where training is needed for all company resources. After that, pay attention to fragmented information. In my opinion, fragmented information is a social issue. I would especially like to point out these two problems.		
Company I	the usability	the usability	the usability

Appendices 7

	Strategy communication	Inform people	Marketing plan	Presence of community ambassadors	Presence of leadership
Company A					
Company B		I think we can be better to introduce new people that join the agency to what it's supposed to be used for. And show how it's used in the best way. I think we take it for granted that people are familiar with these tools but most are not			
Company C		We are happy with how our tool is functioning in this space			
Company D		Maybe the same platform could be used for communicating the official strategy work as well. Discussions are not structured atm, maybe a moderator or some automation would be needed to process the vast number of ideas			

Company E	ESPs, in my opinion, are very difficult to contact and share feedback with because of their size and customer numbers
Company F	Cultural efforts to make use of it the norm is paramount
Company G	
Company H	The important thing is to try to empower and inform all the participating actors for the development of innovation in this case through a RACI. which stands for Responsibility, Accountability, Control and Information. Through these 4 pillars you could really control, empower all the people involved in the process so that they still feel 100% involved in this process

Appendices

Company I

First of all, people should design the product and have a clear view of what the purpose of that community, a clear boutique. So, the group has a clear purpose and people know what to expect on this space.

Second, you need to build up a good marketing plan. That means how are you going to recruit people will build your membership. How are you going to buy promoting it over users by promo, you know, emails, and people can click through and come to that community and make themselves a member and then they have alerts coming in when there is relevant stuff coming from that community. So you need to have a good marketing strategy to build up that community.

There's a big important role for professional communicators to simply start the conversation to make sure, you know, at the beginning is the right hook the right content there and people might put themselves in and that the promote two sides. There is a role for professional communicators to play this kind of Ambassador or to committed to the community, like community ambassadors.

If the leader shows the way, automatically, you will have people going there. So I think the activation of the leader is important. What I would say the top management in this case is active on this sites and automatically his whole community will engage around that. So there is a big role to play by the leadership.

Bibliography

Abernathy, W., & Utterback, J. (1975). A dynamic model of process and product innovation. *Omega* , 639–656.

Asio, S. M. (2015). Social media: A platform for innovation. *IIE Annual Conference and Expo 2015* , 1496-1503.

Bengtsson, M., & Kock, S. (2000). "Coopetition" in business networks - To cooperate and compete simultaneously. *Industrial Marketing Management* , 411-426.

Bhimani, H., Mention, A. L., & Barlatier, P. J. (2019). Social media and innovation: A systematic literature review and future research directions. *Technological Forecasting and Social Change* , 251-269.

Cantamessa, M., & Montagna, F. (2016). *Management of Innovation and Product Development*.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly, Johnson Graduate School of Management* , 128-152.

Conway, S., & Steward, F. (1998). MAPPING INNOVATION NETWORKS STEVE CONWAY and FRED STEWARD. *International Journal of Innovation Management* , 223-254.

Cooper, R. G. (2008). Perspective: The Stage-Gate® Idea-to-Launch Process—Update, What's New, and NexGen Systems*. *Journal of Product Innovation Management* , 213-232.

D'Aveni, R. A., Dagnino, G. B., & Smith, K. G. (2010). THE AGE OF TEMPORARY ADVANTAGE. *Strategic Management Journal* , 1371-1385.

Dewing, M. (2010). Social Media: An Introduction. *Library of Parliament* , 1-5.

Halale, S. (2015). Enhancing cocreation using social media. *IT Professional* , 40-45.

Harrysson, M., Schoder, D., & Tavakoli, A. (2016). *The evolution of social technologies*. McKinsey Survey.

Helfat, C. E., & Raubitschek, R. S. (2000). Product sequencing: co-evolution of knowledge, capabilities and products. *Strategic Management Journal* , 10-11.

Bibliography

- Herzog, C., & Steinhuser, M. (2016). The Impacts of Enterprise Social Software on the Innovation Process. *IEEE 20th International Enterprise Distributed Object Computing Conference (EDOC)* , 1-10.
- Huber, G. P. (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organization Science* , 88-115.
- Kim, H., & Hanssens, D. M. (2017). Advertising and Word-of-Mouth Effects on Pre-launch Consumer Interest and Initial Sales of Experience Products. *Journal of Interactive Marketing* , 57-74.
- Kirchner, K., & Razmerita, L. (2019). Managing the Digital Knowledge Work with the Social Media Business Value Compass. *Proceedings of the 52nd Hawaii International Conference on System Sciences* , 6438-6447.
- Kogut, B., & Zander, U. (1992). KNOWLEDGE OF THE FIRM, COMBINATIVE CAPABILITIES, AND THE REPLICATION OF TECHNOLOGY*. *Organization Science* , 383-397.
- Lau, A. K., Tang, E., & Yam, R. C. (2010). Effects of supplier and customer integration on product innovation and performance: Empirical evidence in Hong Kong manufacturers. *Journal of Product Innovation Management* , 761-777.
- Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication* , 1-19.
- Lewrick, M., Raeside, R., & Peisl, T. (2007). The Innovators's Social Network: A cross-sector exploration on the influence of social networks and social capital on innovation and success. *Journal of Technology Management & Innovation* , 38-48.
- Marion, T. J., Barczak, G., & Hultink, E. J. (2014). Do social media tools impact the development phase? An exploratory study. *Journal of Product Innovation Management* , 18-19.
- Matt, C., Hess, T., & Benlian, A. (2015). Digital Transformation Strategies. *Business and Information Systems Engineering* , 339-343.
- Mergel, I., & Bretschneider, S. I. (2013). A Three-Stage Adoption Process for Social Media Use in Government. *Public Administration Review* , 390-400.
- Morse, J. M. (1994). *Critical issues in qualitative research methods*. Sage Publications.

- Muninger, M. I., Hammedi, W., & Mahr, D. (2019). The value of social media for innovation: A capability perspective. *Journal of Business Research* , 116-127.
- Nelson, R. R., & Winter, S. G. (2002). Evolutionary theorizing in economics. *Journal of Economic Perspectives* , 23-46.
- Ofek, E., & Johnson, R. (2013). Nike Football : World Cup 2010 South Africa. *Harvard Business Review* , 1-23.
- Patroni, J., Von Briel, F., & Recker, J. (2016). How Enterprise Social Media Can Facilitate Innovation. *IT Professional* , 34-41.
- Prahalad, C., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review* , 79-91.
- Qi, C., & Chau, P. Y. (2018). Will enterprise social networking systems promote knowledge management and organizational learning? An empirical study. *Journal of Organizational Computing and Electronic Commerce* , 31-57.
- Rahman, N., Nuwangi, S. M., & Singh, H. (2020). Understanding The Impact of Knowledge Sharing through Enterprise Social Networking (ESN) on Service Innovation. *Proceedings of the 53rd Hawaii International Conference on System Sciences* , 4890-4897.
- Razmerita, L., Kirchner, K., & Nielsen, P. (2016). What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication. *Journal of Knowledge Management* , 1225-1246.
- Recker, J., Malsbender, A., & Kohlborn, T. (2016). Using Enterprise Social Networks as Innovation Platforms. *Kohlborn, Thomas* , 42-49.
- Roberts, D. L., Piller, F. T., & Lüttgens, D. (2016). Mapping the Impact of Social Media for Innovation: The Role of Social Media in Explaining Innovation Performance in the PDMA Comparative Performance Assessment Study. *Journal of Product Innovation Management* , 117-135.
- Saunders, M. N., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*. Harlow, England: Financial Times/Prentice Hall.
- Teece, D. J., Pisano, G., & Shuen, A. (2008). Dynamic capabilities and strategic management. *Technological Know-How, Organizational Capabilities, and Strategic Management: Business Strategy and Enterprise Development in Competitive Environments* , 27-52.

Bibliography

Wagner, S. M. (2012). Tapping Supplier Innovation. *Journal of Supply Chain Management* , 37-52.

Zhou, K. Z., & Wu, F. (2010). TECHNOLOGICAL CAPABILITY, STRATEGIC FLEXIBILITY, AND PRODUCT INNOVATION . *Strategic Management Journal* , 547-561.

Acknowledgment

I wish to express my sincere appreciation to my supervisor, Professor Kathrin Kirchner, who allowed me to spend four months in the Management Department of the Technical University of Denmark (DTU). She convincingly guided and encouraged me to be professional and she motivated me in every time of the research. I wish to thank also the DTU that hosted me for the time necessary to write my Master Thesis.

I wish to show my gratitude to all the managers who participated in the interviews in the information gathering phase of the research. Without their contribution, the goal of this project would not have been realized.

Moreover, I wish to acknowledge the support of my supervisor in Politecnico di Torino, Professor Luigi Buzzachi, who has always found the time and the way to offer me valuable advice for my Master Thesis.

A special thanks to Federica Maspoli with whom I shared an important part of my life. She has always been present in victories and difficulties and it is thanks to her that I am the person I am today.

I would also like to thank my closet friends Filippo, Gregorio, Alessandro, Lorenzo, Pietro and Valentina for the special moments shared.

Finally, to my parents Monica and Igor, to my brothers Luca and Lorenzo, to my grandparents Alida and Giancarla, who unconditionally supported me, I would like to say thank you.

Ringraziamenti

Desidero esprimere il mio sincero apprezzamento al mio supervisore, la professoressa Kathrin Kirchner, che mi ha dato l'opportunità di trascorrere quattro mesi nel dipartimento di Management dell'Università Tecnica della Danimarca (DTU). Mi ha guidato in modo convincente, mi ha incoraggiato ad essere professionale e mi ha motivato in ogni momento della ricerca.

Desidero ringraziare anche il DTU che mi ha ospitato per il tempo necessario per scrivere la mia tesi di laurea.

Acknowledgment

Desidero mostrare la mia gratitudine a tutti i manager che hanno partecipato alle interviste nella fase di raccolta delle informazioni della ricerca. Senza il loro contributo, l'obiettivo di questo progetto non sarebbe stato realizzato.

Inoltre, desidero riconoscere il sostegno del mio supervisore al Politecnico di Torino, il professor Luigi Buzzachi, che ha sempre trovato il tempo e il modo di offrirmi preziosi consigli per la mia tesi di laurea.

Un ringraziamento speciale a Federica Maspoli con cui ho condiviso una parte importante della mia vita. È sempre stata presente in vittorie e in difficoltà ed è grazie a lei che sono la persona che sono oggi.

Vorrei anche ringraziare i miei più cari amici, Filippo, Gregorio, Alessandro, Lorenzo, Pietro e Valentina per i momenti speciali condivisi insieme.

Infine, ai miei genitori Monica e Igor, ai miei fratelli Luca e Lorenzo, alle mie nonne Alida e Giancarla, che mi hanno sostenuto incondizionatamente, vorrei ringraziarvi.