



UNIVERSIDAD DE MURCIA
FACULTAD DE ECONOMÍA Y EMPRESA

The Involvement of Frontline Employees and
Customers in Service Innovation:
Antecedents and Results

La Implicación de los Empleados de
Primera Línea y de los Clientes en la
Innovación de Servicios:
Antecedentes y Resultados

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“He gives power to the weak, and to those who have no strength He increases might. Even the youths shall faint and be weary, and young men shall utterly fall. But those who wait on the Lord shall renew their strength; they shall mount up with wings like eagles, they shall run and not be weary, they shall walk and not faint.”

(Isaiah 40:29-31)

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“Knowledge in itself is not enough to create ideas, the social interaction on the other hand can help and ensure individual to meet, share knowledge and by that gain new knowledge and from that spark new ideas.”

A bee

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INTRODUCTION

Innovation is the driving force behind superior business performance, with innovative firms reaping the benefits of increasing growth and customer satisfaction and customers enjoying the higher value of new products and services. Firms like 3M and DSM have proven track records in innovation, launching 1000–1700 new products per year. Apple became the most profitable firm in history through a string of successes that have changed the nature of the music, telecommunications, and consumer electronics industries. New product development (NPD) has been studied for several decades by academic researchers, resulting in a large and well-documented body of knowledge about the NPD process and its key success factors (Brown and Eisenhardt 1995; Hauser, Tellis, and Griffin 2006; Henard and Szymanski 2001). However, the innovation literature is strongly biased toward products; so, what about services?

The world's most advanced economies are dominated by services, which often generate more than 80% of their gross domestic product (Ostrom et al. 2010; Gustafsson, Brax, and Witell 2010; Gustafsson et al. 2015). Consumers in these countries spend around 60% of their share of wallet on services and service provision in 2015 (bea.gov – Bureau of Economic Analysis). The service sector also employs the largest number of individuals, and it is the fastest growing sector both in terms of the number of companies and employees. Even goods manufacturers have come to realize that they may better differentiate themselves from competitors by adding services to their core products, transitioning from product manufacturers to service or solution providers (Oliva and Kallenberg 2003; Gebauer, Gustafsson, and Witell 2011; Witell et al. 2011). Clearly, service constitutes a major source of growth, value creation and well being for both businesses and their customers (Anderson and Ostrom 2015). Consequently, service research has great potential to make an impact on society, and it is well equipped to undertake the challenge of conducting research that matters (Biemans, Griffin, and Moenaert 2015).

Academics use the increasing focus on intangibles and customer co-creation to emphasize that customers do not purchase products but hire products and services to get a job done (Christensen, Olesen, and Kjær 2005; Bettencourt 2010). Others go even further and question the distinction between products and services, arguing that marketing has moved to a service-dominant view, in which service provision is fundamental to economic exchange (Vargo and Lusch 2004; Lusch, Vargo, and O'Brien 2007). Also, based on service dominant logic, service innovation is considered a process, which involves different actors. In this sense, it has been considered that one approach on gaining valuable knowledge is the involvement of the employees and

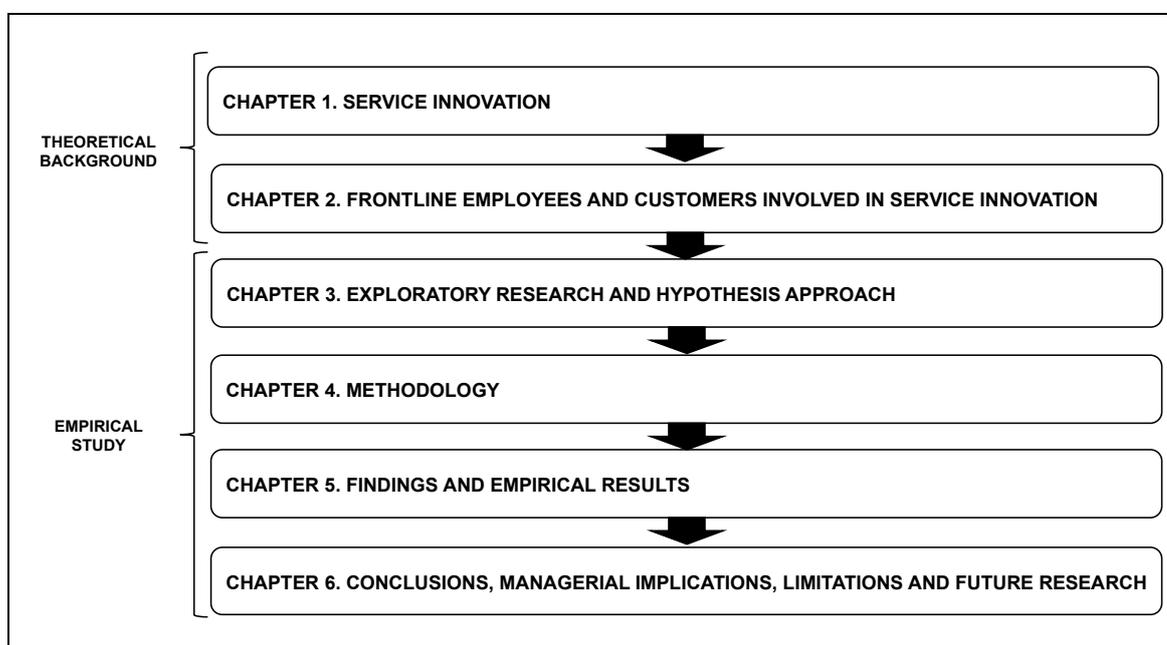
customers in the service innovation process. On the one hand, the frontline employees hold a unique position in the organization in that they continually observe customer reaction to the firm's service product and prescribed delivery process. Their constant interaction with customers should give them over time a strong sense of what customers like and don't like about the firm's core product attributes and support services. As a result, frontline employees should be a good source of ideas for service innovations (Melton and Hartline 2010). Schneider and Bowen (1984) view frontline employees as a valuable source of new service ideas and a resource in planning how to successfully deliver and implement a package of new core and augmented services. On the other hand, customer involvement has long been considered important for successful service development (Magnusson, Matthing, and Kristensson 2003; Edvardsson et al. 2006; Hoyer et al. 2010). According to the resource dependence theory, information on customer needs and user experiences might be viewed as resources companies depend on for successfully developing new services. From this perspective, cooperation with customers can be seen as a bridging strategy to secure access to the critical resource of information on customer needs (Gruner and Homburg 2000; Salomo, Steinhoff, and Trommsdorff 2003).

But knowledge in itself is not enough to create ideas. Social interaction on the other hand can help to ensure individuals meet, share knowledge, thereby gaining new knowledge and sparking new ideas. So, working together and inspiring each other is another source of innovation. Ideas rarely originate from nothing, and co-creating between employees and customers can spark innovation. For this reason, frontline employees and customers are two of the most important sources from whom to get relevant market information (Melton and Hartline 2015). In addition, Ostrom et al. (2015) mentioned that coordinating the interdependent roles of frontline employees and customers in service innovation is one of the most important topics for this field and had the largest research gap.

In this thesis, we demonstrate the importance of these two sources in service innovation in different conditions and for different purposes. The first purpose is to explore what are the factors that determine the involvement of frontline employees and customers in service innovation. For this, we will examine strategic factors of the firm and personal factors of both actors. The second purpose is to compare the effects of the involvement of frontline employees and customers on the service innovation performance. On this point, it is seen if it is really important to integrate information between them, taking into account the degree of service innovation. And finally, the

third purpose is to analyze the effect of the involvement of frontline employees and customers on the new service development process and the effect that each of them has on the following one. For this purpose we will also examine if the service newness is relevant to the results when frontline employees and customers are involved. Also, from a managerial point of view, we think about how to offer recommendations on how best to match these frontline employees and customers according to their profiles. In addition, we have models that are able to improve firm performance through the involvement of these agents. To achieve these purposes, this work is divided into six chapters, as shown in Figure 1.

Figure 1. Doctoral thesis structure



Chapter 1 highlights the importance and relevance of service innovation. First of all, a literature review of this field is performed to observe the evolution of this discipline and identify the current future priorities. This is followed by a summary of the main research sources that understand service as a step-by-step process. Subsequently, a selection of some studies that measure the different performance dimensions of service innovation are analyzed. This is followed by a general analysis of the actors who are involved in some way in service innovation, highlighting the involvement concept. Finally, the chapter concludes with theories that will serve as a base knowledge for the relations that are proposed in this doctoral thesis.

Once this research is contextualized, the second chapter explores the specific involvement of frontline employees and customers in service innovation. Specifically, in the first part of this chapter deals with the factors that may determine the involvement of these two actors in service innovation projects. In the second and third part of the chapter, the role of frontline employees and customers in service innovation is examined. For this, the main research that has dealt with the involvement of these stakeholders separately is summarized. The fourth, and final section discusses the importance of the stakeholders' interaction and the information integration in a firm environment. It also focuses on the controversial interaction between frontline employees and customers, before presenting the studies that we are building on.

The third chapter begins with an exploratory and qualitative study on the involvement of frontline employees and customers in service innovation projects. The methodology used was in-depth interviews, which are very useful to generate a complete and deep knowledge on a complex phenomenon (Eisenhardt and Graebner 2007) that requires the ability to answer questions related to the "how" and "why" of this phenomenon, and which does not allow the subject research of the environment in which it is immersed to be isolated (Yin 2013). This way, from a series of in-depth interviews with responsible managers of the new services several recommendations were gleaned which have helped to make hypotheses of the planned model. In addition, these hypotheses have been improved. The hypotheses are presented in three parts: the first describes the influence of the different factors that determine the involvement of frontline employees and customers; the second analyzes the effects of the involvement of frontline employees and customers in service innovation performance considering the degree of service innovation and the level of information integration; and finally, the third focus is on the effects of the involvement of these actors on the new service development performance. The influence that each stage has on the following one and the degree of service innovation is also examined.

The fourth chapter describes the methodology used in the empirical study. Firstly, the selection of the population is justified along with the procedure employed both for the collection of the information and as for the design of the survey. Also presented are the scales used in the measurement of the model constructs as well as a summary of the activities carried out for the design of the web platform used for the online survey. Later, the information gathering process is detailed and a description of the 231 innovative firms that responded the questionnaire is included.

The fifth chapter contains the contrasting empirical results. Firstly, there is a descriptive analysis of the scales and the quality of these is evaluated. Secondly, it assesses whether the common method bias may affect the research data. Thirdly, the hypotheses are contrasted using path analysis and hierarchical regressions. Fourthly, we discuss the findings of each of the models analyzed.

Finally, in Chapter 6, the main conclusions and managerial implications arising from this doctoral thesis are outlined, as well as the limitations of the study and possible future research lines. This thesis finishes with the bibliography consulted and the annexes comprising several documents used for the information collection process.

CHAPTER 1

SERVICE INNOVATION

1.1. SERVICE INNOVATION

The increasing importance of services and focus on new services for competitive advantage has fueled a growing literature on service innovation (SI). Some authors make a distinction between SI and new service development (NSD). For instance, Bettencourt (2010) defines SI as the process of devising a new or improved service concept that satisfies the CUS's unmet needs and NSD as all subsequent activities involved in bringing that concept to market. This article follows the more common tradition and considers "SI" and "NSD" as synonyms, defined as the process of devising a new or improved service, from idea or concept generation to market launch.

SI has brought us a broad range of new services, such as car-sharing services (e.g., Zipcar), community-supported agriculture, Twitter, LinkedIn, Pinterest, and Dropbox, which have changed how people live and interact and how companies do business. But what is actually known about NSD? To what extent does the innovation literature offer useful tools and guidance for service innovators?

The NSD literature has evolved over the last 30 years. Early NSD studies used largely qualitative methods to explore the nature and stages of the SI process (Bowers 1989; Easingwood 1986; Johne and Harborne 1985). However, these earliest studies were quickly followed by other researchers applying the quantitative research methods of NPD success/failure studies to identify key NSD success factors (De Brentani 1989; Edgett 1994; Storey and Easingwood 1993). While scholars acknowledge the key differences between products and services, they are not clear on how these impact the NSD process.

The first literature review of the growing body of research about SI (Johne and Storey 1998) concluded that more research was needed in several NSD areas that were well covered in the NPD literature, such as objective procedures for evaluating success, teamwork, NSD across different industries, and international aspects of NSD. This call for more research into NSD was answered with a plethora of studies investigating numerous aspects of NSD, ranging from organizing NSD to the role of frontline employees (FLE), customers (CUS) involvement, and knowledge management.

When it comes to assessing what these three decades of NSD research have amounted to, however, opinions differ. Some scholars conclude that the field has become mature (Bryson and Monnoyer 2004). Cainelli, Evangelista, and Savona

(2004, p. 117) even conclude: “Thank [sic] to this new empirical evidence, we have nowadays a rather detailed picture on the relevance and nature of innovation activities in services.” However, the majority of scholars emphasize that the NSD domain remains underdeveloped and that much additional research is needed (De Jong and Vermeulen 2003; Droege, Hildebrand, and Forcada 2009; Salunke, Weerawardena, and McColl-Kennedy 2011; Toivonen and Tuominen 2009). For example, Storey and Hull (2010, p. 140) state that “NSD remains among the least studied and understood topics in both the service management . . . and the innovation literatures.” And most recently, Kuester et al. (2013, p. 533) conclude that “Although researchers have shown growing interest in NSD issues, this area is still underutilized.”

In contrast to these ad hoc opinions are the more grounded findings of a recent literature review by Papastathopoulou and Hultink (2012). They analyzed 145 conceptual and empirical articles from almost three decades of NSD research and split them into three time periods containing roughly the same number of articles: 1982–1995 (“the early writings”), 1996–2001 (“advancing the literature”), and 2002–2008 (“the recent works”). Of these articles, 90 were empirical NSD studies, which they classified according to research methodology. From their analysis, Papastathopoulou and Hultink (2012) conclude that NSD research methods have matured over the years and that there is an “emergence of a sophisticated NSD discipline.” However, their conclusion is based predominantly on an analysis of the evolution over time of the research methods employed. They do not evaluate the nature and impact of researcher networks or the overall body of knowledge that has been generated. For this reason, Biemans, Griffin, and Moenaert (2015) continue with the analysis undertaken by Papastathopoulou and Hultink (2012). Their classification maintains the logic of the three periods used by Papastathopoulou and Hultink (2012), while the added fourth period provides more recent information. The increasing number of articles per period reflects the growing interest in the domain of SI. Thus, this study extends the Papastathopoulou and Hultink (2012) research with an additional time period and includes more than twice as many empirical studies than they analyzed. In addition, by combining information about articles’ methodologies with information about authors, author networks, and citations and taking a more in-depth look at topics, this study offers a more detailed account of the development and current status of NSD research.

Considering the disagreement about the current state of NSD research, what is needed is not another review of the NSD literature, but a critical in-depth assessment of the

field that addresses the key question: How has the NSD domain evolved over time and what is its current status?

Also, to fill this gap, Carlborg, Kindström, and Kowalkowski (2014) undertook an extensive literature review and synthesis to enable a critical review of extant research on SI and trace its evolution. They divide SI research into three distinct phases and provide a clearer view of how the field has developed (Formation phase: 1986-2000; Maturity phase: 2001-2005 and Multidimensional phase: 2006-2010).

The first, formation phase contains relatively fewer published articles, between 1986 and 2000 ($n = 26$, $n/\text{year} = 1.7$). From a content perspective, the research field is coherent, and most articles focus on offering development. In the 1980s, services marketing expanded quickly as a sub discipline of research in marketing, starting from a relatively low level (Fisk, Brown, and Jo Bitner 1993). The early phase in services marketing research thus was a period of discovery and risk-taking that perceived marketing as a traditional activity, focused on goods rather than services (Fisk, Brown, and Jo Bitner 1993). This description also fits the first phase of SI research, which challenged the prevailing, product-centric view of innovation that regarded it as more or less synonymous with technological innovation, research and development (R&D), and new product development (NPD).

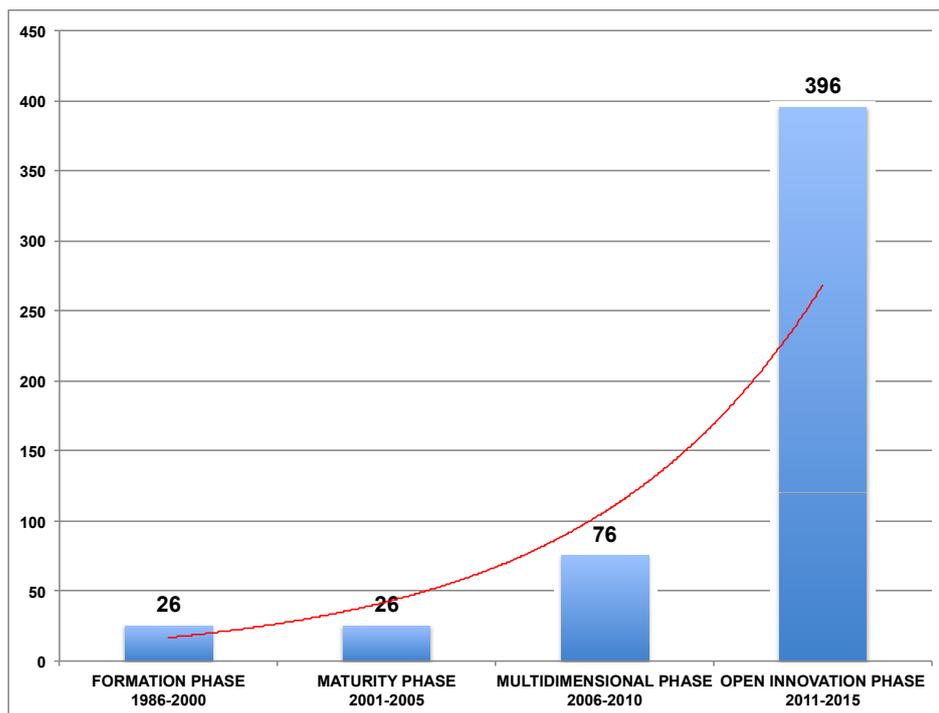
In 2001, the first CUS involvement article appeared (De Brentani 2001), marking the start of the second evolutionary phase, or the maturity phase. A primary focus in this phase was the involvement of CUS, including their intentional or unintentional roles in the innovation process, which previously had been a comparatively less explored aspect. Generally, CUS involvement referred to deliberate and managed user participation (Alam 2002), though later articles also discussed other forms of CUS interaction and learning (Matthing, Sandén, and Edvardsson 2004). During the maturity phase, the number of articles published each year increased by more than a factor of two, though the overall number of publications remained low ($n = 26$, $n/\text{year} = 5.2$). The increasing publication volume resulted from greater overall interest in services, especially evident in the services marketing journals that published more than half of the articles on SI during this phase.

The third phase in the evolution, the multidimensional phase, begins in 2006, with the publication of the first review article on SI (Karniouchina, Victorino, and Verma 2006). These authors called for more multidisciplinary research, reflecting the evolving view of

SI as a multidimensional, all-encompassing concept that also could include products. Also in 2006, the first article about the deployment of services (Barlow, Bayer, and Curry 2006), a new area of interest, was published. The number of published articles increased dramatically during this phase ($n = 76$, $n/\text{year} = 15.2$), primarily appearing in innovation management and services marketing journals, which showed the most visible growth. Virtually no articles appeared in general marketing or B2B marketing journals.

To respond to the question asked above, a literature review of the recent years has been carried out base on the Carlborg, Kindström, and Kowalkowski (2014) study. Using the same methodology, it has been developed the last stage (2010-2015). With this approach, the development in this field of research in the last 5 years, and the current state of the literature, can be identified.

Graphic 1.1. Evolution of articles and phases in Service Innovation literature



Research related to SI displays four distinct phases (the first three belong to Carlborg, Kindström, and Kowalkowski (2014) and the last one is our contribution), separated by content (main topic) and perspective (Annex 1). Each phase reflects an era in the evolution of SI research in which topics and perspectives showed a characteristic

composition. The composition of the four identified phases also suggest specific patterns that characterize dominant views on SI.

In the last decade SI research has been influenced by a new concept on innovation research: **open innovation**. For this reason, this concept names the fourth stage. The number of published articles has been the largest in the history of SI research ($n = 396$, $n/\text{year} = 79.2$).

This phenomenon began to be studied from the viewpoint of manufacturing businesses while services have received much less attention despite the predominant role they play in advanced economies. Recently, Mina, Bascavusoglu-Moreau, and Hughes (2014) evidenced that business services are more active open innovators than manufacturers; they are more engaged in informal relative to formal open innovation practices than manufacturers; and they attach more importance to scientific and technical knowledge than to market knowledge compared to manufacturing firms. In the same vein, the open innovation concept captures the increasing propensity of firms to work across their traditional boundaries of operation. For this reason, the involvement of external and internal actors in innovative projects is also becoming more relevant. So, in addition to CUS involvement, FLE involvement emerges as a new element of study in SI research (Santos-Vijande, López-Sánchez, and Rudd 2015; Hasu et al. 2015).

Moreover, in open innovation phase two new topics of interest to the SI research community have emerged. One of them is related to the digital age. According to Barret et al. (2015), there has been an increasing focus on service across socioeconomic sectors coupled with transformational developments in information and communication technologies (ICTs). The other topic is transformative service research, highlighted by Bitner and Wang (2014) that evidenced that the service area has been very good at delivering company value but we need to be more relevant to society. Interest has substantially increased in examining the relationship between service and well-being, as evidenced by this priority being ranked as the most important in a survey carried out among June 2008 and June 2009 by twenty-seven senior business executives, who were members of the Center for Services Leadership's (CSL) Board of Advisors (18.6% of survey respondents) and being discussed during 15 of the 19 centers'/networks' roundtables, among them were the Center for Excellence in Service at the University of Maryland and the Service Research Center at Karlstad University (Ostrom et al. 2015).

The label “transformative service research” is the overarching term for all service research, regardless of discipline, that has a central goal of investigating the well-being implications of service. It has been more formally defined as service research that aims to “create uplifting changes and improvements” in the well-being of individuals (as consumers and as employees), collectives (e.g., families and communities), and ecosystems (Anderson and Ostrom 2015).

Also, to understand the last trends in this field, Ostrom et al. (2015) in an international and interdisciplinary research effort, identify research priorities that have the potential to advance the service field and benefit CUS, organizations, and society. The priority-setting process was informed by roundtables located around the world and resulted in the following 12 service research priorities. See Table 1.1.

Table 1.1. Priorities in service innovation

<ul style="list-style-type: none"> • Stimulating service innovation, • Facilitating servitization, service infusion, and solutions, • Understanding organization and employee issues relevant to successful service, • Developing service networks and systems, • Leveraging service design, • Using big data to advance service, 	<ul style="list-style-type: none"> • Understanding value creation, • Enhancing the service experience, • Improving well-being through transformative service, • Measuring and optimizing service performance and impact, • Understanding service in a global context, and • Leveraging technology to advance service.
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Source: Ostrom et al. (2015)

Although all the priorities and related topics were deemed important, the results show that topics related to transformative service and measuring and optimizing service performance are particularly important for advancing the service field along with big data, which manifested the largest gap between importance and current knowledge of the field.

1.2. NEW SERVICE DEVELOPMENT PROCESS

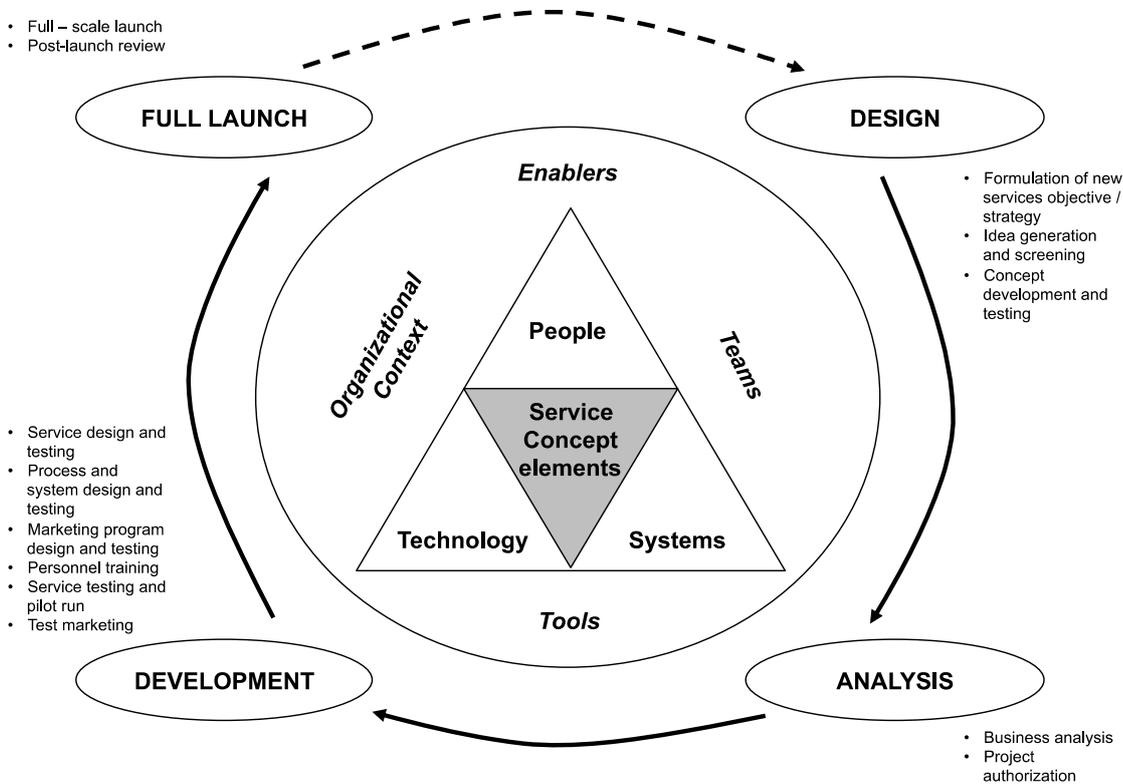
Effective development of new services is vitally important primarily because it influences the success of the resulting service product (De Brentani 1989, 1995; Edgett 1994; Menor and Roth 2007). This influence extends across industries and firm sizes (Reidenbach and Moak 1986) and has obvious and significant implications for organizational performance. Yet many, if not most, service organizations have not adopted formalized or well-structured NSD efforts (Fitzsimmons and Fitzsimmons 2000, Alam 2002; Froehle and Roth 2007). Failure to structure NSD efforts can be seen in haphazard concept generation and evaluation, insufficient testing prior to the final launch of the service, and inadequate knowledge of the market, among many others. To aggravate an already unfavourable situation, many service firms fail to measure what NSD processes they do have (Voss et al. 1992). In general, systematic attention to NSD practices has not been a priority for many service organizations (Droege, Hildebrand, and Heras Forcada 2009; Edvardsson et al. 2012).

Much of the research has been focused on providing a structure to the many activities and concepts associated with the NSD process (Scheuing and Johnson 1989). Most models have employed a temporal or predecessor-based structure that is essentially linear in nature, similar to many project management approaches (Johnson et al. 2000; Bitran and Pedrosa 1998). There are many examples of linear models of NSD. For example, Shostack (1984) developed one of the earliest notable linear models for NSD by deconstructing the process into 10 discrete stages. Reidenbach and Moak (1986) employed a more aggregated six-stage model, which included the phases of idea generation/evaluation, concept development and testing, economic analysis, product testing, market testing, and commercialization. Voss et al. (1992) employ for their analysis a four-stage model consisting of concept development and analysis, prototype service development, prototype service test and debug, and full launch of new service. Bitran and Pedrosa (1998) attempt to bridge the NPD and NSD literature by developing a six-stage model of a generic development process. Their model, like many others, explicitly includes feedback loops that allow knowledge gained later in the process to be fed back into steps typically occurring earlier. Johnson et al. (2000) synthesized past service development research and created a general four-stage NSD process model involving the phases of design, analysis, development, and full launch.

Some researchers have drafted complementary nonlinear frameworks, hoping to attain different perspectives and insights into the development of new services. Edvardsson

and Olsson (1996) abandoned the traditional linear/temporal structure in their quality-based model of NSD. By focusing on design quality, they posited what the goal of any NSD effort should be. Johnson et al. (2000) add nonlinear elements to the NSD model, emphasizing the interdependence on design and development as well as the cyclical aspects of the new service creation process. Their work is among the first to critically examine the nonlinear nature of the new service design process (see Figure 1.1). Also, considering the organizational learning that can occur during the development of new services, a non-linear model was also developed by Stevens and Dimitriadis (2004).

Figure 1.1. Johnson et al. (2000) NSD model



Source: Johnson et al. (2000)

All of these process-based models have their merits because they reflect practices dealing with the sequencing of NSD activities. With few exceptions, one important element that has not been thoroughly developed is the resource base necessary for, and involved in, NSD. Although many researchers have included various resource-oriented elements in their models, these are usually seen as ancillary or secondary to the sequences of steps and activities involved in the NSD process

(Fitzsimmons and Fitzsimmons 2000). A growing emphasis on organizational resources in service operations strategy (Roth and Menor 2003) suggests some unique insights into this issue.

Next, we explore the most thorough models in the SI literature (Bowers 1989; Scheuing and Johnson 1989; Alam 2002). These are the models that better specify the process of developing new services and carry out a more detailed analysis of each step. Also, in chapter two, we will deepen the analysis of NSD models, but this time, it will be more focused on the relevance of the FLE and the CUS.

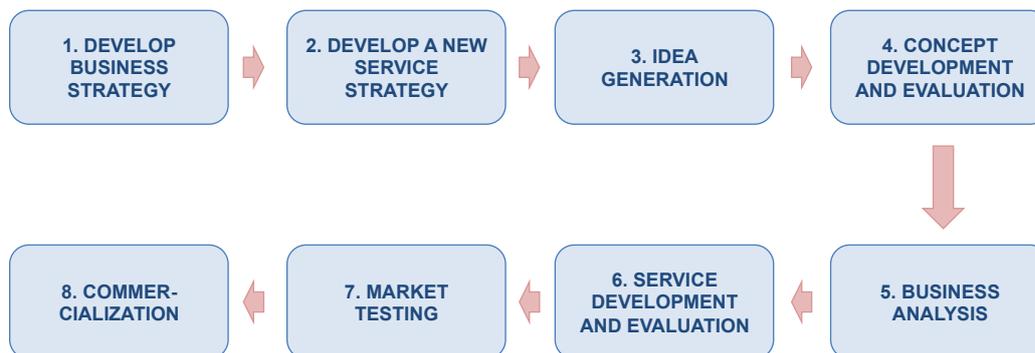
Bowers (1989) NSD model

Bowers (1989) was the first researcher to empirically demonstrate that service industries differ from tangible goods firms in their use of the generic product development steps. He highlighted and criticized the tendency of service firms to skip steps that capture market feedback before service offer launch.

Three service industries were chosen as the sampling frame for the study: banks, hospitals, and insurance companies. A total sample size of 900 was drawn up, 300 randomly selected from each of the three industries. A questionnaire was mailed to specific marketing managers or hospital administrators within each firm. A statistical test of significant differences on the means from the three service industries was carried out.

Bowers (1989) advised greater emphasis on idea generation (i.e., active searching for new ideas, using contact personnel, consumer focus groups and competitive shopping), service development and evaluation (i.e., develop service blue prints and use CUS contact personnel to evaluate them, perhaps finding problems not apparent to the development staff), and market testing (to get reaction to the marketing mix variables and build better forecasts of demand; tests might involve employees only or limited exposure of only parts of the project to select CUS). With the emphasis on CUS contact employees and CUS involvement, Bowers (1989) proposed a normative model of NSD consisting of the following steps. See Figure 1.2.

Figure 1.2. Bowers (1989) NSD MODEL



Source: Bowers (1989)

This author suggests that service organizations employ a process of NSD that is not open to market influences. The path to developing better new products appears to lie in a systematic process of NSD that is sensitive to external change and incorporates consumer reactions and criticisms. Three methods are suggested for carrying out this improvement. First, routinely search for new product ideas outside of the organization. Second, define, develop, and evaluate the service with the assistance of contact personnel and consumers. Third, put the new service in a market test to determine how well the marketing mix will work in the marketplace. If new services are allowed to face the crucible of the market before commercialization, better new products will be introduced.

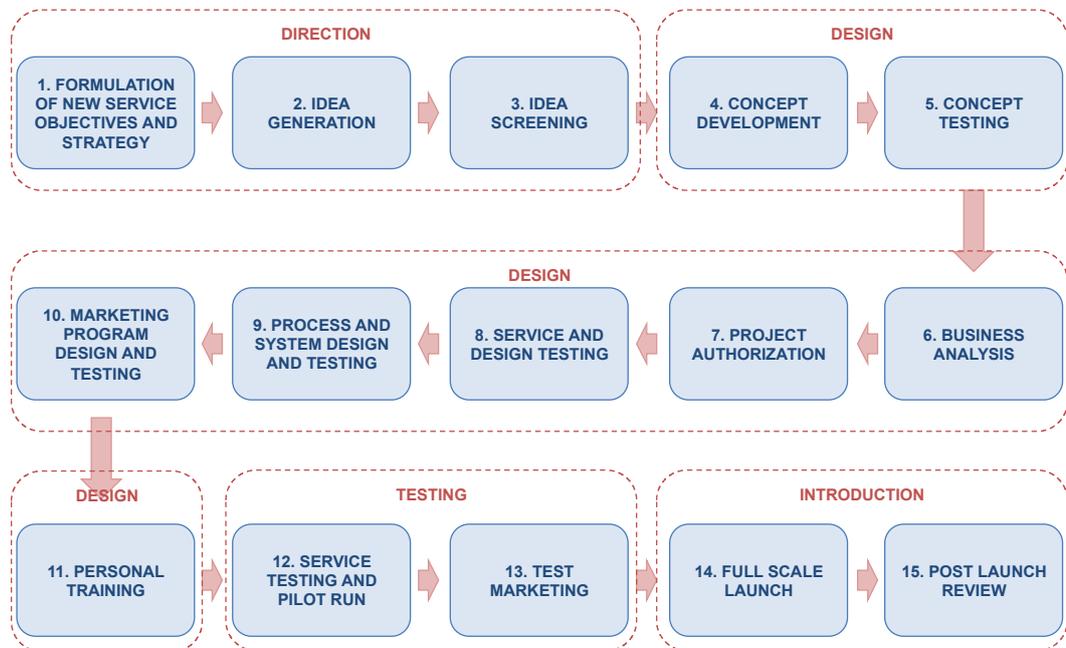
Scheuing and Johnson (1989) NSD model

Scheuing and Johnson (1989) proposed an extensive, 15-step empirically based model of NSD with clearly defined roles for users, CUS contact personnel and other employees.

The authors initially developed the model based on review of the literature and interviews with service managers, and then refined the model using responses from a detailed survey of savings institutions. Out of 400 in-depth surveys sent to members of the Financial Institutions Marketing Association, the authors received 66 replies (16.5% response rate).

In presenting their model (Figure 1.3), Scheuing and Johnson (1989) group the 15 steps into four stages: direction, design, testing, and introduction.

Figure 1.3. Scheuing and Johnson (1989) NSD model



Source: Scheuing and Johnson (1989)

Giving direction to the service initiative includes (1) formulation of new service objectives and strategy, (2) idea generation, and (3) idea screening. The design stage involves mapping out and refining the new service, delivery system and the marketing program. The steps are (1) concept development, (2) concept testing, (3) business analysis, (4) project authorization, (5) service and design testing, (6) process and system design and testing, (7) marketing program design and testing, and (8) personnel training. The testing stage involves (1) service testing and pilot run and (2) test marketing. Both steps involve prospective users. Finally, the introduction stage of this model includes (1) full- scale launch (i.e., rollout of the service to the entire target market) and (2) post-launch review (i.e., project performance evaluation and project modifications).

In our opinion, the key contribution of this model is its attention to internal and environmental influences on the development process; service development is not just a sequence of independent steps separated from other strategies, objectives and

processes within the service firm. However, we have found some limitations. Their study focused only on savings institutions and their findings cannot readily be generalized to other service industries. In addition, as noted previously, their findings are based on a relatively small sample and they provide no data to support the reliability or validity of their findings. Despite its lack of generalization and lack of statistical support, the model has been used fairly extensively to describe and explain the intricacies of the NSD process.

Alam NSD (2002) NSD model

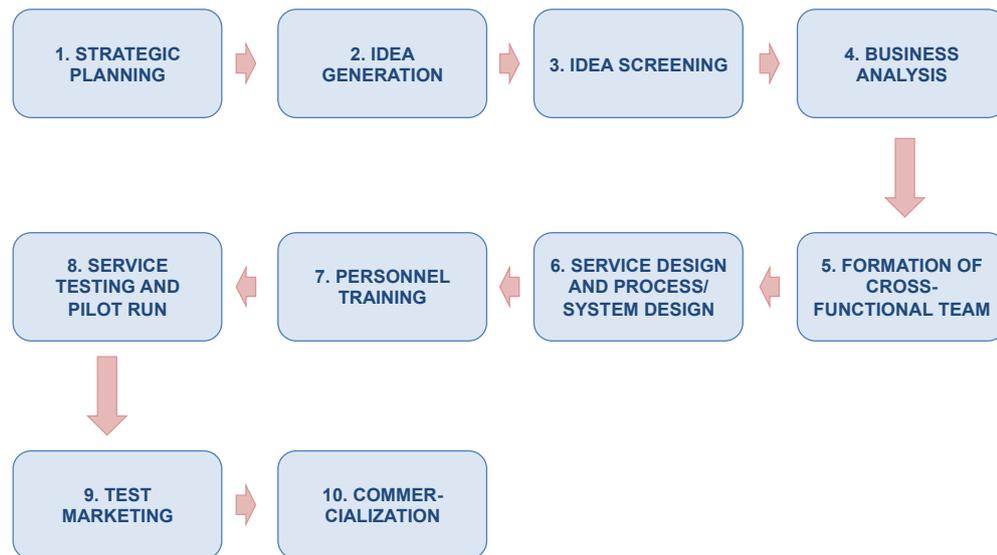
Alam and Perry (2002) do make an effective point that NSD process models did not evolve in sophistication in a manner similar to NPD models in the last decade of the twentieth century. In fact, for over ten years there were no empirically based enhancements of the NSD process model. This work aims to develop a sophisticated model of development of new services.

To that end, Alam performed an exploratory study that consisted of 36 in-depth interviews of managers and CUS at 12 Australian financial services firms (i.e., two managers and one business CUS at each firm). Firms selected for the study had a minimum firm size of at least 50 employees to increase the likelihood of the business having a set NSD process; and average annual revenue was \$500 million in 2000. Respondents were questioned about the firm's overall approach to service development, and not about specific projects, i.e., the research was conducted at the program rather than the project level. Also, the types of new services considered included only new-to-the-world innovations, new service lines and line extensions.

The research objectives stated in Alam and Perry (2002) were (1) to identify the stages of the NSD process for financial service development, and (2) to determine the type of input at different stages of the process. In this section we look only at the process of developing new services and we will leave the incorporation of the CUS to Chapter 2. Significantly, the Alam and Perry (2002) ten step model (1) added formation of the cross-functional team, (2) dropped concept development, concept testing, project authorization, and marketing program design and testing, and (3) combined service and process/system design and consolidated full-scale launch and post-launch review. Their ten step NSD process model consisted (see Figure 1.4) of (1) strategic planning, (2) idea generation, (3) idea screening, (4) business analysis, (5) formation of

cross-functional team, (6) service design and process/system design, (7) personnel training, (8) service testing and pilot run, (9) test marketing, and (10) commercialization.

Figure 1.4. Alam (2002) NSD model



Source: Alam (2002)

Alam and Perry (2002) measured the frequency of use of each stage among the twelve cases and found highest usage for idea generation and commercialization (all 12 firms), frequent usage for formation of function teams, service/process design and service testing (11 firms), and lowest usage for test marketing (6 firms) and strategic planning (7 firms). Since frequency is only one measure of importance, the respondents were also asked to rate the importance of each step. On a five-point scale with 5 rated most important, the highest mean importance ratings went to idea generation (4.7), idea screening (4.1), and formulation of cross-functional team (3.6). Consistent with the frequency measures, the lowest importance ratings went to test marketing (1.7) and strategic planning (2.1). The test marketing usage/importance pattern matches the results of Bowers (1989) who also found that market testing was the least likely activity to occur among a service firm's NSD activities.

The second contribution of Alam and Perry (2002) was a finding of linear and parallel versions of the 10-step model among firms. Smaller firms ran three pairs of stages in parallel to speed up the development process. Overlapping stages were strategic

planning and idea generation, idea screening and business analysis, and personnel training and service testing. The third contribution of the study was a listing of actual activities CUS performed at each stage of the NSD process. Alam and Perry (2002) found that, overall, CUS were involved in all stages, but the highest frequency of CUS involvement was recorded for idea generation, service design, and service testing and pilot run.

Several limitations deserve attention. First, the study described here focused only on business-to-business financial services. Second, due to the theory-building nature of this research, in-depth field interviews were used in a small number of service firms, therefore, the findings presented here should be considered tentative. Fourth, by the use of retrospective data, it has relied on managerial perceptions of user involvement. Even so, the findings of this study provided a detailed understanding of the process.

1.3. OUTCOMES OF SERVICE INNOVATION

The current study about outcomes of SI or NSD process builds on the research of De Brentani (1989, 1991), Voss et al. (1992) and Johne and Storey (1998) to explore the relation of NSD success factors to two categories of NSD outcomes: financial outcomes (relative sales, i.e., meeting or exceeding targeted new service sales goals; and cost efficiencies, i.e., lowering service production and/or delivery costs for the firm) and process outcomes (speed-to-market and cost of product development). The outcomes measure financial effectiveness of the SI, the efficiency of the development process, and improvement in efficiencies of the business' service operations. For example, the model of Melton and Hartline (2010) considered two success factors identified by De Brentani (1991) and Henard and Szymanski (2001) – service marketability and launch preparation - who defined them (along with other factors) as factors distinguishing between successful and unsuccessful service/product innovation projects. The model of Carbonell, Rodríguez-Escudero, and Pujari (2009) considered the meditative effect of two operational factors – innovation speed and technical quality that have been identified previously by Voss et al. (1992).

De Brentani (1989)

This is the first research study in the field of SI which seeks to analyse the service results. This research is based on new product innovation and services marketing. The author reports how companies measure new service performance, and the factors which are associated with success. This study explores success and failure in the development of new industrial services and its objectives are to discover how new performance is measured in the business services sector, what factors are correlated with success and failure, and how the characteristics that distinguish services from physical products impact on NSD service firms.

In order to look at how industrial service companies measure and generate new product success, 184 firms active in NSD were approached. Personal interviews with managers from about one half of these firms explored topics related to new industrial services. This provided a good basis designing and testing the questionnaire used in the second phase of the research. In phase two, managers selected two new service projects, one success and one failure, which the firm had introduced in the past five years, and replied to statements that described the characteristics of the new service projects as discussed above. Of total of 122 statements, 104 characterized the “product” and service-specific project attributes, while seventeen items gauged the performance of the new service (one global measure and sixteen specific success/failure indicators). In total, 148 managers from 115 companies took part in the survey (company response rate: 62.6%), yielding 276 usable rated projects; 150 were successes, 126 had failed. De Brentani (1989) factored 16 measures into four performance dimensions: sales, competitive, cost and “other booster.” See Table 1.2.

Table 1.2. De Brentani (1989) success factors

SALES AND MARKET SHARE PERFORMANCE
<ul style="list-style-type: none"> • Exceed market share objectives • Exceeded sales/customers use level objectives • Exceeded sales/customers use growth objectives • High relative sales/customers use level • Large relative market share • High overall profitability • Strong positive impact on company image/reputation
COMPETITIVE PERFORMANCE
<ul style="list-style-type: none"> • Superior service “outcome” to competitors (perceived) • Superior service “experience” to competitors (perceived) • Unique benefits: perceived as superior to competitors • Gave firm important competitive advantage
COST PERFORMANCE
<ul style="list-style-type: none"> • Substantial lowered costs for firm • Performed below (-) expected costs • Achieved important cost efficiencies for firm
“OTHER BOOSTER”
<ul style="list-style-type: none"> • Enhanced sales/customers use of other products/services • Enhanced profitability of other products/services

Source: Adopted from De Brentani 1989

Industrial service companies evaluated new service performance in multidimensional terms. Of the four independent performance measures identified in this research, of overwhelming importance in gauging success is the sales and market share achieved by a new service. According to De Brentani (1989), this focus on sales is not surprising considering the ease with which services are developed and imitated. Next in importance for evaluating performance is the competitive superiority a new service has in the marketplace, both in terms of what CUS receive and the company interface that they experience. Boosting sales and profits of existing services or products and Cost Performance are two additional measures shown to be important indicators of new service success.

Treating performance as a multidimensional concept and knowing what measures firms use when evaluating success is important since it tells us what variables to look for when assessing the outcome of a new service project. Moreover, because different

factors are responsible for each form of success, managers can focus more accurately on achieving specific new service goals.

This contribution marked a departure from the limited previous research in service development by focusing on the business-to-business service sector, analysing a broad empirical sample of firms and projects and embodying in the research framework paradigms from both the new product and the services marketing literatures. The findings indicated that new services shared many factors considered relevant for developing physical products. We conclude, therefore, that some of the paradigms derived from studies of new manufactured goods are at least partly relevant for services. Similarities notwithstanding, the investigation also confirms that the characteristics, which distinguish services from physical products, impact on how we measure new service performance and on the factors that influence success. In other words, while new product models are relevant, they need to be adjusted to account for service-specific issues.

De Brentani (1991)

The objective was to investigate success and failure of new services in the business services sector. Prior studies of NPD and services marketing provided a large pool of variables, which could be used not only for measuring new service performance, but also for characterizing the project itself, the nature of the NSD process, the market and the internal corporate NSD environment. Based on De Brentani's (1989) results, the questions singled out for investigation in the analysis include: What underlying composite dimensions or factors describe new service projects?; Which of the descriptive factors are related to each measure of new service success/failure?; How are the findings relevant for managers in successfully developing new business services?

A research population of 184 companies known to be active in NSD and comprising 12 business service sectors. Phase one involved personal interviews with managers in 95 firms exploring such topics as the strategic role of NSD, internal and external factors that drive or hinder NSD, the NSD process and its management, and innovation orientation and the NSD performance of the firm. These interviews provided a basis for designing and testing the questionnaire used in the second phase of the study as she did in 1989. In phase two, the original sample was expanded to 184 companies and the

unit of analysis became the individual new services these firms had introduced in the past five years. The managers each selected two projects - one success and one failure. In total, 148 managers in 115 firms completed the questionnaire (company response of 62.5 per cent), yielding 276 rated projects: 150 were successes; 126 had failed.

After his first study, De Brentani (1991) continued with the four composite measures, labelled as Sales Performance, Competitive Performance, Cost Performance and "Other Booster". But other measures identified for product performance were included in this new research. The analysis of the four measures showed that they were fairly reliable and highly significant, although of variable importance, in describing how firms measure new service success. In the Table 1.3. we present 15 factors that de Brentani found significant in NSD success.

Table 1.3. Significant NSD success factors

SALES AND MARKET SHARE PERFORMANCE
<ul style="list-style-type: none"> • Exceeds market share objective • Exceeds sales/customers use level objectives • Exceeded sales/customers use growth objectives • High relative sales/customers use level • High overall profitability • Positive impact on corporate image/reputation
COMPETITIVE PERFORMANCE
<ul style="list-style-type: none"> • Buyer perceives superior service 'outcome' • Buyer perceives superior service 'experience' • Unique benefits: perceived as superior to competitors • Gives firm important competitive advantage
COST PERFORMANCE
<ul style="list-style-type: none"> • Substantiality lowers costs for the firm • Performs below expected cost • Achieves important cost efficiencies for firm
"OTHER BOOSTER"
<ul style="list-style-type: none"> • Enhances sales/clients use of firm's other products/services • Enhances profitability of firm' s other products/services

Source: Adapted from De Brentani 1991

It can be said that this study revealed that companies create new services to achieve different performance objectives and this performance showed which of these descriptive dimensions were responsible for accomplishing each form of new service success and made several important contributions.

1. It integrated theoretical concepts from various disciplines: new goods development and services marketing in the industrial sector.
2. It moved from the traditional case or small sample and industry-specific approach to empirical research that permitted generalizations about many types of service firms across different service sectors;
3. It provided empirical evidence that substantiates or refutes services marketing concepts.
4. It identified a comprehensive and fairly reliable set of 17 independent factors that described the problems and issues relevant for managers concerned with developing and marketing new business services.

Voss et al. (1992)

Their aim was to articulate a useful distinction between process measures of NSD performance and outcome measures of NSD performance akin to efficiency and effectiveness measures for NSD. In order to do this, they proposed a series of measures of the SI and design process: cost, effectiveness, and speed.

Voss et al. (1992) employ for their analysis a four stage model consisting of concept development and analysis, prototype service development, prototype service test and debug, and full launch of new service.

These authors make a useful distinction between measuring success of the development and measuring the performance of the development process. While success measures are likely to be related to the specific objectives, the performance of the development process is the facilitating mechanism for achieving success. As previous research has found, a well executed development process is likely to allow a firm to attain better results than a poorly executed development process. Clearly both measures are important. Table 1.4. provides examples of measures of the results of the service development process.

TABLA 1.4. NSD process outcomes

NSD OUTCOMES	NSD PROCESS
Financial	Cost
<ul style="list-style-type: none"> • Achieving higher overall profitability 	<ul style="list-style-type: none"> • Average development cost per service product
<ul style="list-style-type: none"> • Substantially lowering costs for the firm 	<ul style="list-style-type: none"> • Development cost of individual service product
<ul style="list-style-type: none"> • Performing below expected costs 	<ul style="list-style-type: none"> • Percentage of turnover spent on developing new services, products and processes
<ul style="list-style-type: none"> • Achieving important cost efficiencies for the firm 	
Competitiveness	Effectiveness
<ul style="list-style-type: none"> • Exceeding market share objectives 	<ul style="list-style-type: none"> • How many new services developed annually
<ul style="list-style-type: none"> • Exceeding sales/customers use level objectives 	<ul style="list-style-type: none"> • Percentage new services that are successful
<ul style="list-style-type: none"> • Exceeding sales/customers growth objectives 	
<ul style="list-style-type: none"> • Achieving high relative market share 	
<ul style="list-style-type: none"> • Having a strong positive impact on company image/reputation 	
<ul style="list-style-type: none"> • Giving the company important competitive advantage 	
<ul style="list-style-type: none"> • Enhanced sales/customers use of other products or services 	
<ul style="list-style-type: none"> • Exceeding sales/customers use level objectives 	
Quality	Speed
<ul style="list-style-type: none"> • Resulting in service “outcome” superior to competitors 	<ul style="list-style-type: none"> • Concept to service launch time
<ul style="list-style-type: none"> • Resulting in service “experience” superior to competitors 	<ul style="list-style-type: none"> • Concept to prototype time
<ul style="list-style-type: none"> • Having unique benefits perceived as superior to competitors 	<ul style="list-style-type: none"> • Prototype to launch time
<ul style="list-style-type: none"> • Great reliability 	<ul style="list-style-type: none"> • Time to adopt new concept from outside the firm
<ul style="list-style-type: none"> • More user friendly 	

Source: Adopted from Voss et al. (1992)

This classification throws light on how to develop a new service, develop more effective NSD methods, make better use of their resources. Also, Voss et al. (1992) suggest that competing in rapidly changing markets often requires the ability to develop and deploy new offerings quickly.

On the other hand, this study is the first work that differentiated the NSD outcomes (external performance) and NSD process (internal outcomes). This was an important contribution, since numerous later works have been based on this division (Tatikonda and Montoya-Weiss 2001; Froehle and Roth 2007; Carbonell, Rodríguez-Escudero, and Pujari 2009).

Johne and Storey (1998)

Several empirical studies of NSD success factors applied the methods used in prior studies. Respondents rated their new service projects on a number of descriptive and performance variables and researchers used correlations and regression analysis to identify relationships between the descriptive factors and project performance variables. Johne and Storey (1998) grouped the research findings into three broad categories of activities and project characteristics that were associated with successful project outcomes: opportunity analysis, project development and offer formulation. It can see in Table 1.5.

TABLA 1.5. Outcomes and success factors

OPPORTUNITY ANALYSIS
OUTCOMES
<ul style="list-style-type: none"> • Competitive advantage • Reputation of the firm • Raise barriers to entry
PROJECT DEVELOPMENT
OUTCOMES
<ul style="list-style-type: none"> • Launch preparation • Well-coordinated • Launch evaluation • Pre-launch preparation • Employee staff satisfaction
OFFER FORMULATION
OUTCOMES
<ul style="list-style-type: none"> • Competitive advantage • Technical quality • Customers satisfaction • Frontline employees enthusiasm

Source: Adapted from Johne and Storey (1998)

The factors in the opportunity analysis category involve the synergy of the new service with the existing capabilities of the organization. The new product fit with current offerings of the organization and with the image and corporate strategy of the firm, and the product serve markets the organization knows and understands. Essentially,

successful new services build on existing competitive advantages of the firm, draw on and add to the reputation of the firm, and lift barriers to entry.

In project development, Johne and Storey (1998) identified effective launch preparation as a critical success factor, and stressed the importance of a well-coordinated, well-targeted launch with appropriate post launch evaluation in order to make appropriate adjustments. Particularly important in pre-launch was the preparation of the CUS contact staff through training (affecting expertise) and internal marketing (affecting employee commitment and enthusiasm).

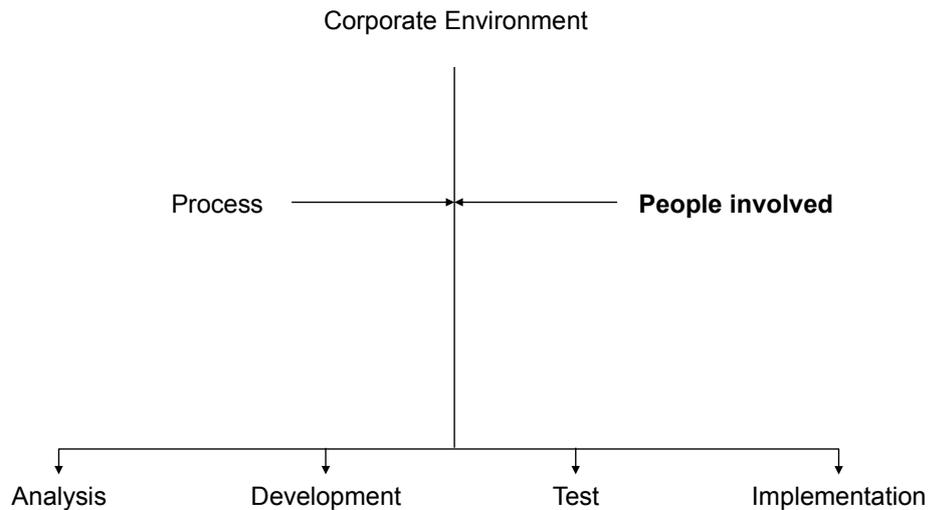
Due to the intangibility of services, CUS place greater emphasis on the quality of interaction with FLE. Since technical quality is hard to assess, CUS rely on the functional aspects (how service was delivered) in assessing the service experience. Therefore, the expertise and enthusiasm of the FLE are major determinants of CUS acceptance of a new service offer. Johne and Storey (1998) concluded that no single measure is adequate, and only a combination of measures (chosen based on the purpose and context of the project) would provide necessary feedback to management on performance and how to improve the service offer and delivery.

1.4. PARTICIPANTS IN SERVICE INNOVATION

In accordance with the initial idea with which the doctoral thesis was begun the knowledge in itself is not enough to create ideas, the social interaction on the other hand can help and ensure individual to meet, share knowledge and by that gain new knowledge and from that spark new ideas. Thus, it is necessary to review who are the key participants that determine the NSD success.

1.4.1. People involved

In reviewing the literature on the NSD process (Johne and Storey 1998; Oliveira and von Hippel 2011; Storey and Perks 2015), six areas emerge. These are: (1) the corporate environment; (2) the process itself; (3) the people involved; (4) analysis of opportunities; (5) development; and (6) implementation (as depicted in Figure 1.5).

Figure 1.5. NSD Themes

Source: Adapted from Johne and Storey (1998)

In this doctoral thesis it is focused on people involved. In this line, numerous researchers have pointed out that people involvement is crucial in NSD (Dolfsma 2004; Rusanen, Halinen, and Jaakkola 2014; Melton and Hartline 2015). According to the literature, there are three groups of individuals that must be managed in an effective development project: (1) the development staff; (2) the CUS-contact staff; and (3) the CUS.

The lack of skilled and experienced development staff (first group) is one of the key barriers to product development in service firms (Drew 1996; Johne and Harborne 1985). It has been stressed that it is important to adequately reward development activities (Atuahene-Gima 1996; Scheuing and Johnson 1989). Many service companies adopt a project team approach and employ product champions. These have been found to be important in pushing the project through the development process (Dover 1987). A greater commitment to teamworking and empowerment has been found to be associated with faster product development (Drew 1996). However, there is still a tendency for teams to be run on a committee basis (Oliveira and von Hippel 2011; Santamaría, Nieto, and Miles 2012). Lovelock (1984) create a “task-force” that is insulated from day-to-day functional pressures.

The second group of people who make a direct contribution to service development are the front-line staff. Schneider and Bowen (1984) identify four distinct benefits of

encouraging employee involvement in NSD: (1) it helps identify CUS requirements; (2) involvement increases the likelihood of positive implementation; (3) it helps stop process efficiency considerations overwhelming the needs of CUS; and (4) it can lead to employees treating CUS better. Employees are, however, often reluctant to get involved in development activities as new products may increase their workload (Davison, Watkins, and Wright 1989; Easingwood 1986; Scheuing and Johnson 1989). Job design, team working, choice of staff, training, and reward systems are all important (Edvardsson and Olson 1996). Related to this is the importance of internal marketing: the need to sell the idea to the internal CUS, as they will be affected by the new service introduction (Langeard, Reffait, and Eiglier 1986; Lovelock 1984).

The final group of people who are important in NSD are the CUS themselves. It is important to involve CUS in the development process and help them articulate their needs. In general, the more involvement by CUS the better, though on the whole CUS involvement in service product development has been found to be relatively low (Martin and Horne 1995). Edvardsson and Olson (1996) make a number of important observations with regard to the CUS's role in development: the service process, involving multiple interactions with CUS – those with other CUS, with staff, with the physical environment, and also with technical systems – needs to be CUS-friendly and adapted to human logic. The best people to judge this are the CUS themselves. The role of the CUS in service production must be made clear to the CUS and, if necessary, the CUS may need to be trained. In this way, as argued by Schneider and Bowen (1984), CUS can become “partial employees”.

1.4.2. Involvement in service innovation

Involvement means that innovators can seek to involve many opinions and ideas during innovation (Fuglsang 2008). Often, for innovation to take place, it is important that employees and users are involved in the exploration of inventions and new “ideas that work” (Melton and Hartline 2010). How this involvement occurs is a complicated issue and a fruitful ground for new research as well as case studies.

Involvement is a mechanism of diversity or variety, but it also requires that management carefully select some of the ideas while others are dismissed. Hence, involvement requires a careful approach to simultaneous variation, selection, reflexivity and strategy making (Sundbo 2003).

Most obviously, employees can be involved in innovation activities (De Jong and Den Hartog 2007), but consumers can also sometimes be involved (Magnusson, Matthing, and Kristensson 2003). For one thing, they can be involved through the employees having many years of experience with consumers. The employees' discovery of consumer needs can sometimes be crucial for improving goods and services. This is true especially in services and public services (Cadwallader et al. 2010).

In some cases, the exploration of consumer needs may be more difficult than in others (Bovaird 2007). For example, in the public sector, a principle of universalism is often important, and employees for good reasons have to think in terms of rules and public law rather than individual needs. Listening more carefully to individual citizens or making use of employees' experiences with them may almost constitute a paradigm shift in the public sector.

Furthermore, while in many settings involvement of employees and consumers may work in an individual case, in the changing context of innovation, the involvement of employees and consumers must, as mentioned, increasingly take place in a systemic way (Melton and Hartline 2013). People must learn to act on behalf of the company system rather than on behalf of themselves and this also requires a careful balancing of strategy and reflexivity (Zomerdijk and Voss 2011).

1.5. THEORIES

Before going into depth with the key concepts of our work, we are going to analyze the theories that will be the basis on which we will build the scientific knowledge of this thesis. Next, we will explain the Resource Dependence Theory (RDT), Absorptive Capacity Theory and Self-determination Theory (SDT).

1.5.1. Resources Dependence Theory

Since its publication, RDT has become one of the most influential theories in organizational theory and strategic management (Hillman, Withers, and Collins 2009; Drees and Heugens 2013; Wagner and Eggert 2015). RDT characterizes the corporation as an open system, dependent on contingencies in the external environment (Pfeffer and Salancik 2003).

This theory, being rooted in the open systems perspective of organization theory (Scott 1992), proposes that a firm's survival is contingent on its ability to gain control over environmental resources. Possible resources include funding, personnel, information, products and services, and authority (Aldrich 1976). The dependence typically results from three factors:

1. The importance of the resource, the extent to which the organization requires it for continued operation and survival.
2. The extent to which the interest group has discretion over the resource allocation and use.
3. The extent to which there are few alternatives (Pfeffer and Salancik 2003).

Thus, according to RDT, one of the fundamental strategies to reduce dependence is coordination with the resource owner. Scott (1992) calls those activities "bridging strategies" that are implemented to secure critical resources. Therefore among the most important actions organizations can take is the modification of their boundaries, more or less drastically and more or less formally. These interactions include boundary-spanning and boundary-shifting strategies that bridge between organizations and their exchange partners.

In the context of our study, information on CUS needs, user experiences and the knowledge shared with FLE might be viewed as resources companies depend upon for successfully developing new services. From the discussion of the three factors determining the dependence of a company on resources, one can conclude a high dependency on FLE and CUS information for three reasons. First, CUS related information are highly important for continued operation in the present context (Gruner and Homburg 2000). Second, the effect of FLE experience through direct contact with the CUS is a determinant factor (Verhoef et al. 2009). Third, information shared between them decreases a possible effect of attribution of any of them, resulting in more valuable information. Cooperation with CUS thus can be viewed, as a bridging strategy to secure access to the critical resource of information relating to CUS needs (Salomo, Steinhoff, and Trommsdorff 2003). According to RDT, this strategy increases organizational effectiveness and thus performance. For our purposes, the main implication of RDT is a theoretical justification for our fundamental hypothesis that FLE and CUS involvement have a positive impact on new service success.

1.5.2. Absorptive Capacity Theory

Cohen and Levinthal (1990) defined absorptive capacity as the ability to recognize the value of new information, to assimilate it, and apply it to commercial ends. They assumed that a firm's absorptive capacity tends to develop cumulatively and also they established that absorptive capacity is more likely to be developed and maintained as a by product of routine activity when the new knowledge domain that the firm wishes to exploit is closely related to its current knowledge base (Liao, Fei, and Chen 2007).

In recent years, studies relating to absorptive capacity have been re-conceptualized, developed or related with other topics. For example, Zahra and George (2002) stressed the error of over-emphasising the abilities that employees should have and neglecting to examine whether employees have the motivation to be committed to their jobs. For the previous authors, commitment is the key to whether the company can succeed. Minbaeva et al. (2003) examine the firm's capacity to utilize and exploit previously acquired knowledge. They identify employees' ability and motivation as the key aspects of the firm's absorptive capacity. The empirical study by Minbaeva et al. (2003) shows that specific human resources management activities have a positive effect on the development of absorptive capacity. The exploratory study on the development of absorptive capacity by Lenox and King (2004) finds that managers can directly affect a firm's absorptive capacity by providing information to potential adopters in the organization.

Having studied in depth the relation of this theory with the employee, we can say that motivated employees want to contribute to organizational effectiveness. Even though the organization may consist of individuals with high learning abilities, its ability to utilize the absorbed knowledge will be low if employees' motivation is low or absent (Baldwin, Magjuka, and Loher 1991). Thus, the definition of employees' motivation is the ability/can do factor, usually denoting a potential for performing some task influenced by the individual's drive. The prior knowledge base (employees' ability) and intensity of effort made by the organization (employees' motivation) are related to the concept of potential and realized absorptive capacity, since potential absorptive capacity is expected to have a high content of employees' ability while realized absorptive capacity is expected to have a high content of employees' motivation (Lewin, Massini, and Peeters 2011). Therefore, the second line of absorptive capacity is the employees' motivation. This theory serves as base for our thesis because it gives sense to the incorporation of different actors in a process of SI, specifically, the FLE.

Absorptive capacity and innovation capability

This theory helps us to understand the commitment of different actors towards the organization, while, in addition, numerous studies relate this theory to the capacity of innovation of the companies. For example, Cohen and Levinthal (1990) propose that the utilization of external knowledge gathered by the organization is a major determinant of innovation capability. Zahra and George (2002) review previous studies related to absorptive capacity, finding a significant positive relationship between absorptive capacity and innovation since these factors work together to establish the organization's competitive advantage. The empirical study by Knudsen and Roman (2004) also suggests that absorptive capacity is an important factor in predicting an organization's innovation capability. On the other hand, Caloghirou, Kastelli, and Tsakanikas (2004) investigate the extent to which the existing internal capabilities of firms and their interaction with external sources of knowledge affect their level of innovativeness. Their research findings show that some capabilities result from a prolonged process of investment and knowledge accumulation within firms and form what has been defined as the absorptive capacity of firms. Also, the results show that both internal capabilities and openness towards knowledge sharing are important for upgrading innovative performance. In addition, Nieto and Quevedo (2005) show that the absorptive capacity variable determines innovative effort. It is also shown that absorptive capacity has a moderating effect on the relationship between technological opportunity and innovative effort. Further, Minbaeva et al. (2003) suggest that absorptive capacity is needed to transfer knowledge from ability and motivation to investigate its influence on organizational performance.

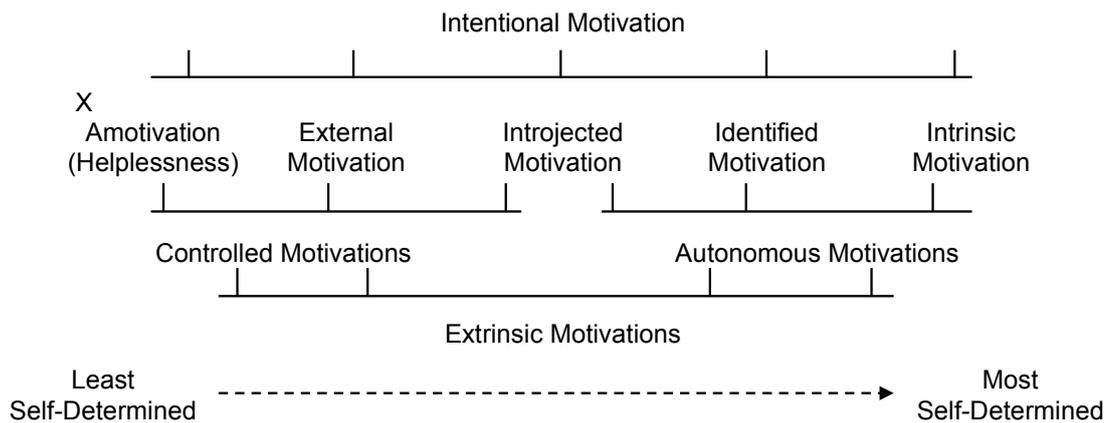
For these reasons we have also considered this theory for the key relationships of innovation generated by FLE and CUS.

1.5.3. Self-determination Theory

SDT was first developed in the late 1960s with the pioneering work of Edward Deci, who explored the conditions that can undermine "intrinsic" motivation (i.e. the desire to engage in an activity because one enjoys, or is interested in, the activity) (Gagné and Deci 2005). These experimental results (and other supporting survey and field data) were summarized in a theory that became known as Cognitive Evaluation Theory (Deci and Ryan 1985). The theory focuses on types, rather than just amount, of motivation,

paying particular attention to autonomous motivation, controlled motivation, and amotivation as predictors of performance, relational, and well-being outcomes (see Figure 1.6).

Figure 1.6. Schematic relation of the five types of motivation

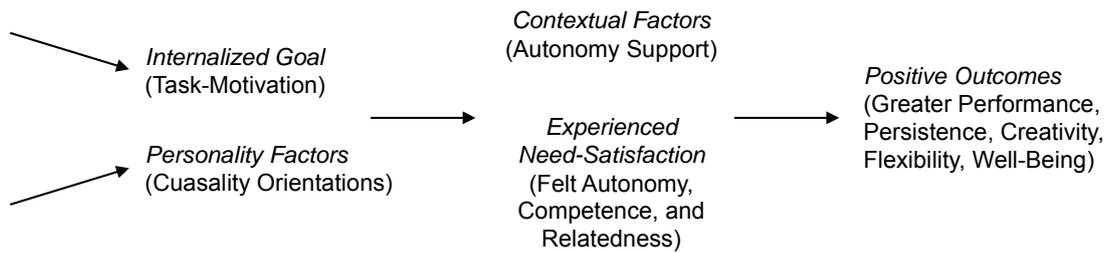


Source: Deci and Ryan (2011)

The contemporary SDT asserts that some forms of extrinsic motivation can indeed be autonomous and “organismically integrated” if the person identifies with them (Greguras and Diefendorff 2009). An example proposed by Sheldon et al. (2003) was ‘an employee may engage in a work behaviour (such as assembling a computer) primarily to earn money or to not be punished by a supervisor (external motivation), primarily to avoid feeling guilty or to avoid being a bad worker (introjected motivation), or primarily because of a genuine identification with her role in the company, and a real concern for the CUS’s need for a quality computer (identified motivation, which has been integrated into the person’s sense of self). In none of these examples would assembling a computer be intrinsically enjoyable, but in the third case, it is at least tolerable and even meaningful’.

Studies have shown that the type of motivation that employees have is more important than the amount of motivation when predicting how they will perform and feel in the workplace (Bitner 1992; Baard, Deci, and Ryan 2004; Lin 2007). One very controversial and important finding of SDT research was that when people are offered contingent monetary rewards for doing activities they already find interesting, they lose intrinsic motivation for those activities (Gagné and Deci 2005). See Figure 1.7.

Figure 1.7. SDT's General Casual-Process Model



Source: Gagné and Deci (2005)

Furthermore, SDT proposes that individuals naturally tend toward internalization of external requirements (Meyer, Becker, and Vandenberghe 2004). The internalization depends upon both intrapersonal factors, such as the person's causality orientation, and contextual factors, such as supervisor autonomy support (Ryan and Deci 2000).

For these reasons, SDT is really important for our research because this theory found that employees are intrinsically motivated to perform work-related tasks efficiently and effectively (Ryan and Deci 2011). Thus, the task of leaders is to create conditions in the work environment that are conducive to optimal employee motivation. To summarize, the key to SDT of the participants who become part of some internal process of the company is to do a job that it is either intrinsically interesting or consistent with the employee's deep and abiding personal values (Cadwallader et al. 2010).

CHAPTER 2
FRONTLINE EMPLOYEES
AND CUSTOMERS IN
SERVICE INNOVATION

As we have seen in the previous chapter, in competitive environments, organizations rely on intangible assets rather than tangible assets (Kaplan and Norton 2004). Indeed, the main capital of organizations is human capital rather than physical capital. In fact, it can be said the cause of some organizations taking the lead over other market competitors and succeeding in the changing market conditions in the world today, is human capital (Thurow 1999). When one considers the important role of human capital in organizations as well as the importance of its application in sensitive and challenging conditions, the vision of FLE and CUS is fundamental. As has been briefly outlined in chapter 1, the participation of employees and CUS is a success factor for the development of new services. For this reason, in the first part of this chapter we will explore the factors that may determine the involvement of these two actors in SI projects. In the second part of the chapter, we will study the FLE and CUS role in the SI process.

2.1. ANTECEDENTS OF THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS

The analysis of the antecedents of the FLE and CUS involved in innovation projects is particularly germane because some reports have concluded that employee engagement in particular appears to be on the decline overall if there is no economic compensation or other incentives from the company a priori (Bates 2004; Gruman and Saks 2011; Strom, Sears, and Kelly 2014). Consequently, it is important to identify, on the one hand, the factors that the firm can promote to facilitate the involvement of FLE and CUS. And, on the other hand, the personal factors that FLE and CUS have, and that lead them, spontaneously, to show interest in innovative projects. In relation to the enterprise factors, we are going to study the role of entrepreneurial orientation (EO) (Anderson et al. 2014) and innovative culture (Wei et al. 2013). With regard to the personal factors, we are going to differentiate between personality factors: individual creativity and openness to experience (Chen 2011) and behavioural factors linked to the company: organizational identification (OID) (Kindström, Kowalkowski, and Sandberg 2013). This differentiation is realized bearing in mind the classification of the personality factors of McCrae and Costa (1987).

2.1.1. Strategic factors of the firm

The literature has related innovative culture and EO, establishing that both are resources that although interrelated are distinct from each other (Deshpande and Webster 1989; Leisen, Lilly, and Winsor 2002; Hult, Hurley, and Knight 2004). Innovative culture differs principally from EO because it does not need a new market entry (Lumpkin and Dess 1996) and acts fundamentally in a new way on the market intelligence. A company that does not develop innovative capacities will not be able to implement the new knowledge (Hult, Hurley, and Knight 2004). Similarly, innovative culture and EO are different because the first is a resource that occurs within the organization (Damanpour 1991), while EO has an external scope (Luo, Zhou, and Liu 2005).

Entrepreneurial Orientation

We may trace research on an entrepreneurial mode of strategic decision making to the works of Mintzberg (1973) and Khandwalla (1977), which argued that firm performance is largely predicated on gestalts comprised of strategic choices, organizational attributes (e.g., structure), and environmental exigencies. One such gestalt is entrepreneurial in nature, typified in part by proactive strategic moves and a willingness to take on projects with uncertain outcomes (Khandwalla 1977). From this early work, Miller (1983) crystalized an entrepreneurial approach to strategy making by suggesting that entrepreneurial firms are those that pursue innovation, aggressively enter new markets, and accept a measure of strategic and financial risk in the pursuit of new opportunities. Notably, Miller (1983) observed that an entrepreneurial firm should exhibit all three strategic components with some degree of simultaneity. They proposed that in general, theorists would not call a firm entrepreneurial if it changed its technology or product-line, simply by directly imitating competitors while refusing to take any risks. Some proactiveness would be essential as well. By the same token, risk-taking firms that are highly leveraged financially are not necessarily entrepreneurial. They must also engage in product-market or technological innovation.

Furthering this line of thinking, Miller (1983) and Covin and Slevin (1989, 1991) posited the existence of a continuum used to plot a firm's strategic behavioural proclivities. The continuum ranges from more conservative to more entrepreneurial, with the

entrepreneurial end of the spectrum evidenced by innovativeness, proactiveness, and risk taking. Covin and Slevin (1991) further suggested that the observation of sustained entrepreneurial behaviours is a necessary condition for being entrepreneurial. They established that the organizations with an entrepreneurial posture are those in which particular behavioural patterns are recurring. Thus, under the Miller (1983) and Covin and Slevin (1989, 1991) conceptualizations, a firm is entrepreneurial because it exhibits entrepreneurial behaviours, and there is an element of temporal consistency in this exhibition.

In the period following the Covin and Slevin (1991) conceptualization, scholars offered alternative perspectives on the conceptual domain of a firm-level strategic orientation towards entrepreneurship (Lumpkin and Dess 1996; Covin and Wales 2012) for a discussion of the differences between the two conceptualizations). Nonetheless, as noted in two recent meta-analyses, the Miller (1983) and Covin and Slevin (1989, 1991) conceptualizations are by far the dominant perspectives of EO in the relevant literature (Rauch et al. 2009; Rosenbusch, Rauch, and Bausch 2013). Miller (1983) and Covin and Slevin (1989, 1991) suggest that entrepreneurial firms are those that exhibit innovativeness (the introduction of new products, processes, and business models); proactiveness (actively entering new product/market spaces and seeking market leadership positions); and risk taking (a willingness among strategic decision makers to contribute resources to projects with uncertain outcomes). Recently, Anderson et al. (2014) defined EO as a second-order, firm-level construct comprised of two lower-order dimensions: entrepreneurial behaviours (encompassing innovativeness and proactiveness), and managerial attitude towards risk (risk taking) that put a new spin on the concept of EO.

Innovative Culture

Generally, innovative culture has been perceived as a desirable facet of organizations that can assume different forms in various organizational contexts (Wang and Ahmed 2004; Siguaw, Simpson, and Enz 2006; Anderson, Potočnik, and Zhou 2014). For example, according to Lumpkin and Dess (1996), “Innovativeness reflects the firm’s tendency to engage in and support new ideas, novelty experimentation and creative processes that may result in new products, services or technological processes” (p. 142). Garcia and Calantone (2002) also stressed the issue of “newness” in the context of innovativeness and claimed that it “is the capacity of a new innovation to influence

the firm's existing marketing resources, technological resources, skills, knowledge, capabilities, or strategy" (p. 113). While diverse definitions have been used, most have operationalized innovative culture as the number of implemented innovations. Thus, theoretically and empirically, organizations that implemented more innovations have been perceived as having higher levels of innovativeness (Salavou 2004; Wang and Ahmed 2004).

However, a few studies have differentiated innovative culture from innovation. Rogers (2010) defined innovative culture as an indication of behavioral change. Subramanian and Nilakanta (1996) highlighted innovative culture's endurance and consistent ability to innovate over a period of time (Siguaw, Simpson, and Enz 2006). Avlonitis, Kouremenos, and Tzokas (1994) stated that "organizational innovativeness represents a latent capability of firms" and that innovative culture "is not associated with the adoption of specific innovations and, therefore, innovativeness alone cannot predict the adoption or rejection of specific innovations" (pp. 9–10).

Hurley, Hult and Knight (2005) distinguished between innovativeness and the capacity to innovate. According to their conceptualization, innovativeness is a part of organizational culture, and innovative capacity is its outcome. In their model, the capacity to innovate results from innovativeness and serves as a mediator between innovativeness and the organization's competitive advantage and performance. The number of innovations an organization successfully adopts or develops this capacity. As such, innovativeness is not coupled with specific product innovations; rather, it reflects a cultural trait of the organization and the willingness to pursue new opportunities.

Hurley, Hult and Knight (2005) view and argues that innovative culture is the surface-level manifestation of the organization's culture, namely its climate. In other words, innovative culture reflects the organizational activities that produce visible and tangible innovative outcomes (Baer and Frese 2003; Denison 1996). However, while these studies conceptualized innovative culture as different from innovations, their primary goal was not scale development. As such, they often used ad hoc one-dimensional measures of innovative culture that were not validated systematically (Wang and Ahmed 2004).

Recently, researchers have called for the development of a multidimensional measure that captures the complex nature of innovative culture, provides a more comprehensive

theoretical understanding of this concept and its dimensions, and advances scholarly investigation into the organizational activities associated with innovative culture both as predictors and as consequences (Moos et al. 2010; Wang and Ahmed 2004). Nevertheless, only two such approaches appear in the literature. Wang and Ahmed (2004) conceive innovativeness as “an organization’s overall innovative capability” to produce innovative outcomes (p. 304). They identify five areas of such innovative outcomes: product, market, process, behaviour, and strategic innovation. This argument echoes Hurley, Hult, and Knight (2005) argument that an organization’s innovative capacity should be regarded as an outcome of innovative culture, defined as organizational culture. Moos et al. (2010) take a different view of innovative culture and focus on the direction of innovativeness. They propose a two-dimensional, directional perspective on innovative culture that differentiates input-oriented from output-oriented directions. While their view of innovative culture provides further support for the multifaceted nature of innovative culture, their perception of innovative culture, based on their extensive literature review, remains a theoretical proposal in that they do not validate it empirically. Finally, Ruvio et al. (2013) conceptualizes innovative culture as a multidimensional construct reflecting an organizational climate that facilitates innovative outcomes over time. They identified five innovative culture dimensions: creativity, openness, future orientation, risk-taking, and proactiveness.

2.1.2. Personal Factors

Empirical studies have examined the personal and contextual factors that enhance or restrict an innovative behaviour (Zhang and Bartol 2010). In this section, we focus on the personal and behavioral factors. These factors include personality and behavioural type dimensions and have received substantial attention in the creativity literature. Both sets of characteristics could affect individuals and might facilitate creative ideas (Tierney and Farmer 2002). For example, individuals with certain personality characteristics may be especially effective at recognizing problems or at combining new information, which may enable them to produce more creative work (Sternberg and Lubart 1995). On the other hand, drawing on Ryan and Deci (2000), we posit that these factors affect intrinsic motivation. Intrinsic motivation refers to the extent to which an individual is excited about a work activity and engages in it for the sake of the activity itself (Andriopoulos and Lewis 2009). Scholars have long argued that individuals are likely to be most creative when they experience high levels of intrinsic motivation (Shalley, Zhou, and Oldham 2004). As such motivation increases their

tendency to be curious, cognitively flexible, risk taking, and persistent in the face of barriers should facilitate the development of creative ideas. The expected effects of personal (OID, individual creativity and openness to experience) on intrinsic motivation can be explained using Cognitive Evaluation Theory, SDT and Social Identity Theory (Ryan and Deci 2000; Bhattacharya and Sen 2003).

Organizational Identification

OID is a specific form of social identification. Freud (1922) coined the first meaning of identification as 'an emotional tie with another person'. Later on, the term was adapted for OID (Patchen 1970). Patchen's identification theory consisted of three components: similarity, membership, and loyalty, which led to the development of Cheney's (1983) Organizational Identification Questionnaire (OIQ). According to Tompkins and Cheney (1983, p. 144), OID occurs 'when, in making a decision, the person in one or more of his or her organizational roles perceives that unit's values or interests as relevant in evaluating the alternatives of choice'. Following Patchen's (1970) conceptualization, Cheney (1983) composed his OIQ using items to measure the following dimensions: (i) feelings of attachment, belonging, and pride in being a member of the organization; (ii) loyalty to the organization and support of the organization's goals; and (iii) perceived similarity between employees and the organization in terms of shared values and goals. However, after the advent of Social Identity Theory (Tajfel and Turner 1986) and Self-Categorization Theory (Turner et al. 1987), new theoretical arguments have been developed (Ashforth and Mael 1989; van Knippenberg and Schie 2000; Van Dick 2001) that specified the conceptualization of social identification.

Tajfel (1978) defines social identity as 'that part of an individual's self-concept which derives from his knowledge of his or her membership of a social group (or groups) together with the value and emotional significance attached to that membership' (p. 63). Accordingly, three dimensions of social identity can be distinguished: (1) a cognitive component, which is the knowledge of being a member of a certain group; (2) an affective dimension, which is the emotional attachment to that group; and (3) an evaluative aspect, which describes the value connotation assigned to that group from outside. Other researchers have added a fourth component, which represents the behavioral aspect of identification (Phinney 1991; Jackson 2002; Van Dick et al. 2004). Van Dick et al. (2004) provided evidence for the usefulness of the consideration of these dimensions of identification in organizational contexts. Ashforth and Mael (1989)

did some pioneering work on transferring the ideas of Social Identity Theory into OID, suggesting that an organization, team or work group can represent a social category with which individuals can identify themselves. According to Hogg and Terry (2000), an organization is one of the most important social categories for an individual (Bergami and Bagozzi 2000). Employees who identify with their organization have self-images that are reconstituted in the organization's image and values (Cheney 1983). O'Reilly and Chatman (1986) characterized identification as involvement based on the desire for affiliation. Ashforth and Mael's (1989) approach to OID deals with the perceived oneness of an employee with his or her organization. The more individuals identify themselves with their organization, the more they think and act from an organization's perspective (Dutton, Dukerich, and Harquail 1994). Albert, Ashforth, and Dutton (2000) summarized why identity and identification are timely and important aspects of organizational life. Although rapid changes - both on a macro and micro level - such as downsizing, change from long-term contracts to shorter transactions, outsourcing and so forth, suggest a decrease in the relevance of identity matters, Albert and colleagues provide several arguments for the powerfulness of OID. Part of this powerfulness stems from an inherent need for a situated sense of an entity. 'Whether an organization, a group, or a person, each entity needs at least a preliminary answer to the question "Who we are?" or "Who am I" in order to interact effectively with other entities' (Albert, Ashforth, and Dutton 2000; p. 13). In a similar vein, Gioia, Schultz, and Corley (2000) argue that it is the flexibility and instability of the representations of the organization's identity in the employees' minds which contributes to accomplishing rapid organizational change.

As we have mentioned above, OID has garnered consensus on its conceptualization. The treatment in this study of OID follows the mainstream conceptualization of OID from the social identity perspective (Ashforth and Mael 1989; Haslam 2004). An individual's social identity is the "knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel 1978, p.63). The organization acts as a potentially salient social category with which people can develop identification (Ashforth and Mael 1989; Hogg and Terry 2000).

Individual Creativity

Following Amabile's (1983, 1996) componential framework of creativity, the production of creative work requires three types of antecedents, these being domain-relevant skills, creativity relevant skills, and task motivation. Domain-relevant skills involve the skills to perform competently in a specific domain, including factual knowledge about the domain, special domain-relevant talents, and technical skills. Creativity-relevant skills contribute to creativity across domains (Amabile 1996) and include an appropriate cognitive style, a conducive work style, and implicit or explicit knowledge of heuristics for generating novel ideas. Woodman, Sawyer, and Griffin (1993) defined organizational-level creativity as the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system. This definition frames creativity as a subset of the broader domain of innovation (Madjar, Greenberg, and Chen (2011); Perry-Smith and Shalley 2014). Indeed, creativity and innovation have often been regarded as overlapping constructs, although the former focuses on the generation of new ideas, while the latter focuses on implementing and transforming new ideas into products, technologies or processes (Amabile 1997). The concept of newness as reflected in creativity is essential to the definition of innovativeness because it distinguishes innovation from change (Bharadwaj and Menon 2000). The literature on creativity has followed two major streams.

One focuses on the personal characteristics that influence creativity, investigating in particular the determining role of personality and cognitive style. The other focuses on contextual factors, defined as dimensions of the work environment that potentially influence an employee's creativity but that are not part of the individual (Shalley, Zhou, and Oldham 2004).

Furthermore, research concerning products/services that are perceived as being creative reveals that they elicit a distinct set of aesthetic responses from observers, such as surprise, satisfaction, stimulation and savouring (Shalley, Zhou, and Oldham 2004). Early findings (Guilford 1950; Barron 1955) concluded that originality was an important dimension of a creative new product/service. Creativity results in the production of some novel output that is satisfying and represents a real leap forward from the current state of the art (Martin and Wilson 2014; Moreno-Moya and Munuera-Alemán 2014). The originality of a product/service is explained by its uncommonness in a particular situation and its applicability to a given problem (Cohen and Ferrari 2010).

Research has identified some explicit product/service characteristics (dimensions) as discriminating signs of a creative product/service (Amabile 1996; Matthing, Sandén, and Edvardsson 2004). The employment of dimensions in order to assess creative products/services is ultimately considered as the most useful procedure for creativity research in general (Zhang and Bartol, 2010). According to Besemer and O'Quin (1987), dimensions that capture a new product/service, product/service idea, or creativity in general, are characterized by novelty, resolution, and elaboration. The degree of originality is implied by the dimension novelty (Ang, Lee, and Leong 2007). In the literature (Sundgren et al. 2005) novelty is commonly and frequently referred to as the most obvious attribute of creativity in products/services. The extensive interest in the novelty dimension is perhaps explained by the fact that uniqueness of ideas is being held as an important criterion for product/service success (Lin and Hsieh 2014). In other words, the future of a company today is, to a great extent, determined by the potential of their product or service portfolio under development (Yeniyurt, Henke, and Yalcinkaya 2014). Consequently, an important objective for an organization is to have the capability to present unique, and thus innovative, products/services (Kang and Kang 2014). As many companies have the ambition to be innovative, originality is the concept that enfolds the innovative dimension (Kristensson, Magnusson, and Matthing 2002).

Openness to experience

One of the most widely used taxonomies in personality research is the five-factor model, which are: agreeableness, neuroticism, extraversion, conscientiousness, and openness to experience (McCrae and Costa 1987). In addition to appearing prominently in a impressive body of research in individual psychology, the five-factor model has been widely used in studies on the personality composition of teams (Barrick and Mount 1991). According to McCrae and Costa (1987) openness to experience refers to an individual's willingness to explore, tolerate, and consider new and unfamiliar ideas and experiences. Furthermore, openness can be manifest in fantasy, aesthetics, feelings, actions, ideas, and values (Costa and McCrae 1978, 1980), but only ideas and values are well represented in the factor. Perhaps the most important distinction that these authors make is between openness and intelligence. They demonstrated that intelligence may in some degree predispose the individual to openness, or openness may help develop intelligence, but the two seem best construed as separate dimensions of individual differences.

Later, Costa and McCrae (1992) suggest that openness to experience (which has often been labeled as intellect) is related to active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, intellectual curiosity, and independence of judgement (Costa and McCrae 1992). Furthermore, they distinguish six facets of openness: Fantasy (have a vivid imagination and fantasy life which they believe enhances life); Aesthetics (highly esteem and can be moved by art, music, poetry and beauty); Feelings (are receptive to inner feelings, deeply experience emotions and see them as important); Ideas (open-minded and willing to consider new ideas and pursue intellectual interest); Actions (being adaptable and having a willingness to experience new activities, foods, place and prefer novelty routine); and Values (willingness to re-examine social, political and religious values) (Griffin and Hesketh 2004). People who score high on openness to experience tend to be less dogmatic in their ideas, more open to considering different opinions, more accepting of all kinds of situations, and less likely to deny conflicts than people who score low on openness to experience (Costa and McCrae 1992; Le Pine 2003; McCrae and Costa 1987). Individuals with high scores on openness are curious about both inner and outer worlds, and they are willing to entertain novel ideas and unconventional values, and they experience both positive and negative emotions more keenly than do closed individuals (Costa and McCrae 1992). Highly open people display intellectual curiosity, creativity, flexible thinking, and culture (Digman 1990).

As soon as there were defined the antecedents of the involvement of FLE and CUS in SI projects, it goes to study in depth the two key stakeholders of the doctoral thesis: the FLE and CUS. It is begun by the FLE.

2.2. FRONTLINE EMPLOYEES' INVOLVEMENT IN SERVICE INNOVATION

Kesting and Uihøi (2010) emphasize that all employees, in any organization, have hidden abilities for innovation and therefore typically constitute an underutilized innovation resource. These abilities are also reinforced by the fact that employees, during their daily activities, acquire exclusive and highly context-dependent knowledge, which managers often do not possess, and that can be exploited for the benefit of the firm in innovation processes. Innovations, accordingly, can emerge from any "ordinary" employee (Santos-Vijande, López-Sánchez, and Rudd 2015). However, the literature on SI also argues that in service organizations, as a logical consequence of how services are produced, delivered, and consumed, FLE interact with the firm's CUS on a

regular basis and, in this way, they are in a privileged position to collect, filter, and translate useful CUS information to identify uncovered market needs and anticipate future market trends (Schneider and Bowen 1984; Bateson 2002; Lages and Piercy 2012; Melton and Hartline 2010, 2013, 2015; van der Heijden et al. 2013). In this respect, Sørensen, Sundbo, and Mattsson (2013) define service encounter-based innovation as innovation that develops from ideas, knowledge, or practices derived (one way or another) from frontline service employees meetings with users in the service delivery process. Thus, FLE through service encounters can proactively ask consumers about their service experience and practices (Ye, Marinova, and Singh 2012; van der Heijden et al. 2013) and obtain valuable insights from CUS preferences and relating to future service improvement. Similarly, FLE are, in many cases, the first to identify and repair service failures, actions that may also constitute the cornerstone of future required SI (Jayasimha, Nargundkar, and Murugaiah 2007; Santos-Vijande, González-Mieres, and Sánchez 2013; van der Heijden et al. 2013).

FLE thus constitute a key mechanism for accumulating experience and knowledge about CUS, as well as becoming a key source of creative ideas for steering the design of future SI (Melton and Hartline 2010, 2013, 2015). Moreover, FLE also accumulate supply-side knowledge (Magnusson 2009), that is, knowledge relative to their work domain and procedures that is extremely valuable for understanding how new service ideas can be implemented in practice. FLE, therefore, are capable of looking at the new service idea from the company's perspective in terms of feasibility, including both technical and organizational issues (Engen and Magnusson 2015), which enriches their contribution to the SI process. In sum, FLE constitute an essential source of information needed to direct the design and implementation of new core and augmented services, and in this way have a key role in SI success.

In the discussion of FLE' roles in SI, Sørensen, Sundbo, and Mattsson (2013) propose a categorization of service "encounter-based" innovation processes that involves two broad approaches: (1) a top-down push approach, wherein the NSD is intentionally initiated by senior management, marketing, and/or R&D departments, building from FLE' ideas but maintaining consistency with the organization's strategic concerns, and (2) a bottom-up pull approach, which means that the new service arises from FLE' creative practices in a problem-solving context. The latter involves practice-based adjustments, which mostly require small changes that need to be recognized and accepted at the organizational level (which usually takes place retrospectively) to develop them further and to reproduce them as innovations in new situations.

FLE' input is relevant for SI in both "encounter-based" processes (Sørensen, Sundbo, and Mattsson 2013). Thus, a new service strategically initiated and controlled by managers in back offices (top-down push approach) is developed because users ask FLE for new or improved services and/or because FLE detect a new demand or identify a new potential service idea. Similarly, service practice-based innovations clearly depend on FLE' creativity. Engen and Magnusson (2015) contribute to the categorization of service encounter-based innovation processes by observing that service "ad hoc innovations", defined as "a solution to a particular problem posed by a given client" (Gallouj and Weinstein 1997), are not the result of a top-down planned strategic process, but may involve the commitment of a significant amount of organizational resources. In these cases, ad hoc innovations must be accepted by managers in back offices, as they are in control of the organizational resources to implement these ideas and can evaluate their compliance with the firm's strategic objectives. Accordingly, SI derived from service encounters may be planned and structured, non-intentional or non-systematized, or both (Engen and Magnusson 2015).

On the other hand, according to recent Service-Dominant Logic (S-D Logic) research, service providers co-create value with CUS through direct interaction and may benefit from using the knowledge about the CUS obtained in the SI efforts (Vargo and Lusch 2008; Grönroos and Voima 2013). SI may therefore be facilitated by the FLE' input and commitment to innovation (Sundbo 2008). Specifically, Ordanini and Parasuraman (2011) argue that FLE contribute to the SI process through their proximity to and frequent interactions with service CUS, coupled with their latent knowledge (gained through experience) about how things could/should be done differently to improve CUS service. This statement is consistent with extensive service research suggesting that innovation activities take place throughout an organization by empowered employees (Sundbo 1996), not only in the research & development department (Fuglsang 2008; Bessant and Maher 2009; Toivonen 2010). Further, research under the rubric of employee-driven innovation argues that the involvement of FLE in innovation decision making is associated with decreases in incorrect innovation decisions due to the FLE' knowledge and skills regarding their CUS' value creation practices (Kesting and Uihøi 2010).

S-D Logic may be used to understand FLE' involvement in SI and is therefore adopted here. Vargo and Lusch (2008) argue that innovation is not defined by what firms produce as output but how firms can better serve. This stance is contingent on the S-D Logic view on value that argues that CUS determine the value of service during use:

value is created in use, not embedded in goods or services. Therefore, firms can only offer value propositions. Value propositions are configurations of resources aiming to support CUS' value creation in use and have been described as a firm's value creation promises to CUS. Value propositions are the outcome of a firm's internal resource integration process, which quite often includes FLE (Vargo and Lusch 2008; Grönroos and Voima 2013). SI has to do with the firms' development of attractive value propositions that support CUS creating value-in-use. Adopting a S-D Logic position, we conceptualize SI as a firm's process of developing new, or modifying existing, value propositions through resource integration (Skålén and Edvardsson 2015).

According to a S-D Logic understanding of SI, the FLE thus contribute to SI by being involved in the resource integration process leading up to the formulation of attractive value propositions. Specifically, Melton and Hartline (2013) and Ordanini and Parasuraman (2011) suggest that FLE may contribute positively to the integration of resources into attractive value propositions based on their CUS knowledge obtained through the co-creation of value with CUS. Melton and Hartline (2013) state as resource integrators, they [FLE] are key to enabling the firm to gather, assimilate, interpret, disseminate and act on relevant knowledge from outside and within the firm to develop and deliver new services that build competitive advantage for the firm in the marketplace. Sundbo and Gallouj (2000) suggest that FLE are an important internal driving force of the SI process due to their ability to function as entrepreneurs. Further, Toivonen and Touminen (2009) argue that FLE collect pieces of information from different sources, among them CUS, and compare these with the actual situation, which results in ideas for SI.

In brief, when front-line employees are empowered in their role as value co-creators, they become a prime source of innovation, contributing to the integration of resources into value propositions that firms offer their CUS (Lusch, Vargo, and O'Brien 2007). However, Michel, Brown, and Gallan (2008) argue that further research is needed to understand how SI is conducted by combining resources into value propositions. In particular, front-line employees' contributions to the resource integration process of innovating new value propositions have not been systematically studied in previous research. Karlsson and Skålén (2015) explore more specific gaps in the research on FLE involvement in SI and about what FLE contribute to SI, when during the SI process FLE are involved and how FLE contribute to SI. In sum, their review of previous research suggests that a systematic and comprehensive empirical study of FLE involvement in SI is needed.

2.2.1. Frontline Employees in the New Service Development Process

There has been no research on FLE involvement in NSD comparable to the study of CUS involvement undertaken by Alam (2002). In fact Schneider and Bowen (1984) is the only major paper published on FLE involvement in service development, and two empirical papers since then have briefly included the topic as part of a larger study. More recently, however, a few studies have seen the effects of the employee in the process of developing new services with CUS together (Melton and Hartline, 2010, 2013, 2015). What follows is a review of the literature on the most relevant works in this specific area.

Schneider and Bowen (1984)

Schneider and Bowen (1984) are specific when they discuss outcomes of employee involvement in the development and implementation stages of NSD. In preparation for the roll-out of a new service, employees can (1) define employee training needs; (2) predict CUS reaction to ads and promotions; (3) suggest ways of altering computer support to increase efficiency; and (4) advise how best to sequence introduction of various aspects of the new service. Employee involvement helps firms avoid insensitivity to CUS and set the most appropriate style and pace of new service delivery. Also, empathetic FLE involvement in development and implementation may help prevent productivity. In the same line, they improve the efficiency goals of the firm from overwhelming the objective of meeting CUS needs in the new service. In sum, they argue that participative decision-making (involving employees in the design, development and implementation of new services) increases employee acceptance of decisions and facilitates implementation of those decisions.

Scheuing and Johnson (1989)

Since Scheuing and Johnson's (1989) model were explained in Chapter 1, in this section we focus directly on the effects of the FLE involvement on NSD process. They provide somewhat modest empirical evidence that contact employees are involved in the development process. In their normative model of NSD, Scheuing and Johnson (1989) involve CUS contact employees at the stages of concept development, service design and testing, personnel training, and test marketing. Their rationale and expected

outcomes are very similar to those articulated by Schneider and Bowen (1984). Input from CUS contact personnel helps to expand promising ideas into fully-fledged concepts with details on new service features, benefits, proposed CUS experience and reason for purchase. The outcome for involvement in the other stages is less clearly stated, but it is implied that employee involvement with service design and testing, personnel training and test marketing reduces the risk of service delivery process failure (i.e., due to lack of employee familiarity with the content and activities associated with the new service).

Bowers (1989)

As in the case of Scheuing and Johnson (1989), in this section we focus directly on the effects of the FLE involvement on NSD process.

They found that service firms were less likely to engage in idea generation and market testing than in most other stages of the development process. In recommending reform of service industry development practices, Bowers (1989) specifically urged firms to use contact personnel as a valuable internal source of new ideas because they are familiar with CUS needs. Potential outcomes of employee involvement in idea generation may facilitate suggestions for realigning or augmenting present services to match consumer needs more closely. Since market testing exposes the new service to the competition prior to full-launch, Bowers (1989) suggests offering the new service to employees only for a short time, to gauge reaction to price, promotion and other marketing variables.

Ottenbacher, Gnoth, and Jones (2006)

This work offers a basis for distinguishing between the categories of high and low contact services, conceptualizes a comprehensive approach to NSD in hotel services, and tests this approach in the field. It contributes to the research by highlighting this need for new knowledge, insights and models by gathering information on, and exploring the factors that contribute to, success in high contact NSD projects.

The conceptual model for this study was developed using items generated from an extensive review of the NPD and NSD literature, as well as from extensive personal

interviews with eight hotel managers from differently sized and rated properties. Data were collected via questionnaires from hospitality managers knowledgeable about NSD in their organization (sample size = 183; response rate 38. %). Discriminant analysis was used to identify the factors that are responsible for successful high contact NSD projects in the hospitality industry.

Of the 23 factors that had been identified as potentially determining NSD success, seven were found to distinguish between successful versus less successful new services. Among market-related dimensions, market attractiveness and market responsiveness are most closely related to high contact innovation success. Four organization-related factors made the difference between successful and less successful NSD: strategic human resource management; empowerment; training of employees; and marketing synergy. Furthermore, employee commitment during the development process also impacts new high contact service development performance. However, they found that involving FLE in idea generation, planning, or design of the service was not a significant predictive factor when distinguishing successful from unsuccessful projects.

Sundbo (2008)

The Sundbo's book "Innovation and the Creative Process" explains the tensions between engaging people's opinions and ideas on the one hand, and the overall strategy of a company or an organization on the other. Specifically, Sundbo examines tensions in organizations between the involvement of employees in innovation, and care for the overall strategy process of a company or an organization. Sundbo pays particular attention to innovation in services, and includes a review of the literature on SI with respect to the involvement of employees. Sundbo also draws on a multiple case approach to service firms.

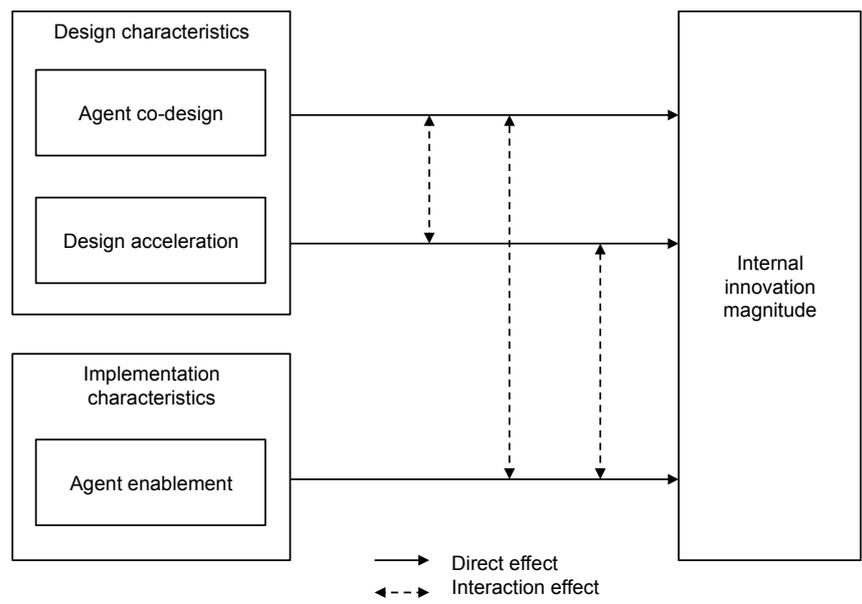
Supplementing the theoretical discussions that have been presented in the chapter, the author gives a deeper understanding of the SI process with several practical examples. The different cases present different ways in which the firms take care of the innovation and involve different actors (primarily the employees) in the process. Also examined were the roles in innovation processes in an insurance and payment company, CUS orientation and employee empowerment in a bank and the change of employee behaviour in a hotel.

The author distinguished between the idea, development and implementation phases and found that the FLE are involved during all phases but not as much during the development phase. He argues that it is important that the FLE are involved to some extent during the implementation phase so that they understand and accept the service and make it a natural part of their practices. And finally, he suggests that innovation-with-care does not necessarily lead to radical innovations, but may be a good approach to developing incremental innovations and improvements of existing products and routines.

Umashankar, Srinivasan, and Hindman (2011)

Umashankar's study examines how design and implementation characteristics influence the outcome of internal CUS SI for CUS service agents. Internal CUS SI refers to changes in practices that help CUS service agents deliver CUS service. Specifically, this study addresses the research question: How do NSD factors influence outcomes of internal CUS SI for CUS service agents? They examine two NSD factors: (1) design characteristics and (2) implementation characteristics or the support resources used in the adoption and use of internal CUS SI (see Figure 2.1).

Figure 2.1. Theoretical model



Source: Umashankar, Srinivasan, and Hindman (2011)

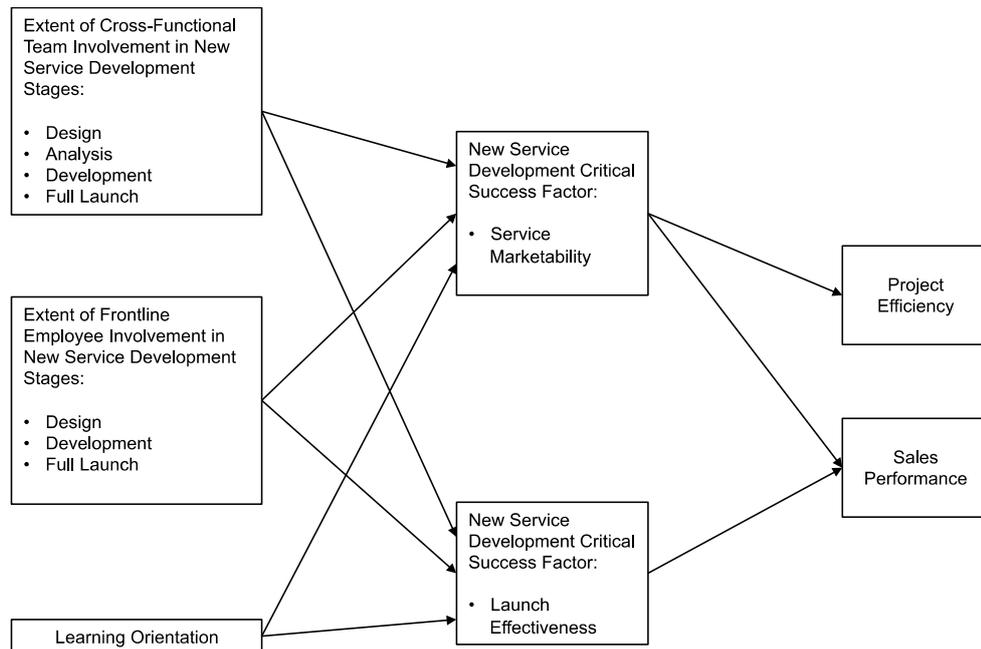
To test the hypothesized relationships, Umashakar and his team gathered survey data during individual interviews with project managers responsible for overseeing the development of internal CUS SI. A list of 38 internal CUS SI was produced, detailing innovations developed between 1999 and 2007. Following that, the senior managers identified project managers who were responsible for overseeing the development of the 38 internal innovations, had direct contact with CUS service agents, and had knowledge of innovation outcomes. Finally, they used the survey ratings from the 34 project managers on 38 internal CUS SI to empirically test the hypotheses in a regression model.

This study contributes to the research in internal marketing that examines employee-level outcomes (Ahmed, Rafiq, and Saad 2003; Weiseke et al. 2009). The findings show that involving CUS service agents in service design not only strengthens the positive effect of design acceleration on internal innovation magnitude but also strengthens the positive effect of agent enablement. This research suggests that innovation outcomes improve when firms integrate service employees' feedback during the design process. On the other hand, the finding that agent enablement has a positive effect on internal innovation magnitude suggests that enabling CUS service agents with resources during the implementation of internal innovations increases the innovation's benefits.

Melton and Hartline (2013)

The aim of this study is to demonstrate empirically in an integrated model that merely having cross-functional teams (CFTs) and FLE involvement and individual participant-level learning orientation as aspects of the NSD process is not sufficient. They suggest that these variables must have a positive effect on service marketability and launch effectiveness in order to significantly influence performance outcomes such as sales performance and project cost efficiency. Their highlight was to contribute to the SI literature by demonstrating the mediating mechanism by which three key operant resources taken together can consistently influence performance outcomes (see Figure 2.2).

Figure 2.2. Theoretical model



Source: Melton and Hartline (2013)

Data were collected from a diverse sample of firms in the financial, health care, education, technology, legal, transportation, government, agricultural, public records research, and entertainment service sectors. The organization president, marketing vice president, planning officer, college dean, or medical practice executive received a survey with cover letter asking them to choose a new service developed and introduced by their organization within the preceding three years. Personalized e-mails with links to an online survey or printed cover letters and surveys were distributed to 3,773 service executives; 244 were completed and returned. The sample of usable surveys was reduced to 160 due to incompleteness of some of the surveys received (4.2% response rate). They used SEM (AMOS) to test the model relationships.

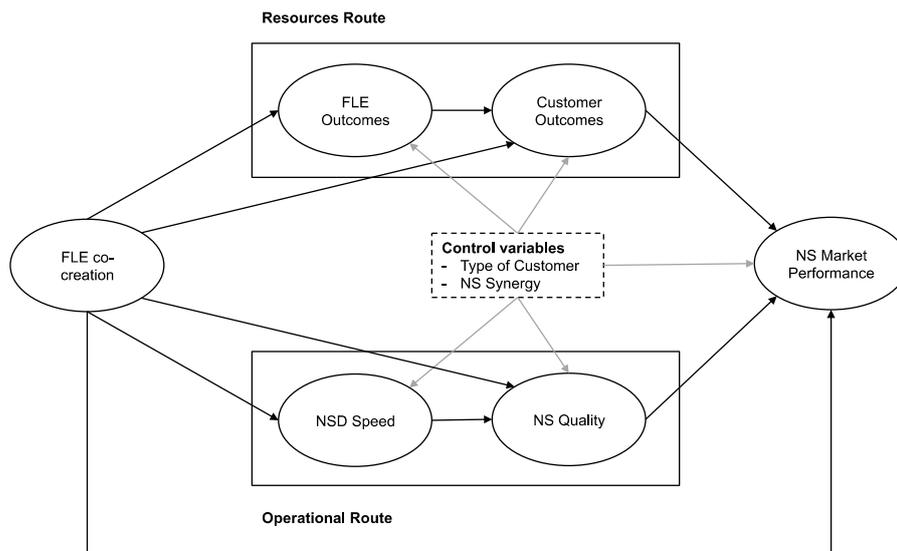
The results show that FLE make their greatest contribution by enhancing the product's service marketability. Consistent with Umashankar, Srinivasan, and Hindman (2011), they find that innovation outcomes are enhanced when firms involve FLE in the NSD process. Total effects for all three antecedents are greater in the mediated model than in the direct, non-mediated model. The post hoc correlational analysis provides some evidence of the impact of cross-functional team involvement at specific NSD stages. Most of the effect of CFT impact on service marketability and launch effectiveness comes from cross-functional coordinative participation in the development and launch

stages, rather than from their contribution to innovative idea generation and screening in the design and analysis stages.

Santos-Vijande, López-Sánchez, and Rudd (2015)

Using a sample of knowledge intensive business services firms, this study examines how the collaboration with FLE along the NSD process, namely FLE co-creation, impacts on SI performance. To achieve this objective, they develop and test a theoretical model in a business service context that includes different new service performance criteria, as well as the relationships among these variables along two different routes of effects (Resources route and Operational route). See Figure 2.3.

Figure 2.3. Theoretical model



Source: Santos-Vijande, López-Sánchez, and Rudd (2015). Key: NS = new service

Key informants were asked to provide detailed information about a relevant or significant NSD project undertaken by their firm in the preceding 3 years. The questionnaires were sent by e-mail, fax, or ordinary mail according to each respondent's preference. A total of 246 valid responses were obtained, equivalent to a response rate of 19.9% (of the 1236 questionnaires sent out). The firms in the sample were distributed by different sectors (IT services, management; legal, or accounting consultancies; engineering, architecture, and environmental consultancies; market research, advertising, and personnel recruitment and training consultancies;

miscellaneous business activities). Among the 246 KIBS firms participating in this study, 101 firms reported to have developed a new service project that involved the active collaboration of FLE with the firm's internal development team along the different stages of the NSDP. In this study, they employed the partial least squares (PLS) approach for structural equation modelling (SEM), using the statistical package SmartPLS 3 to test the relationships.

This study contributes to the SI and S-D Logic literatures by empirically demonstrating that FLE co-creation, understood as NSD with the collaboration of FLE across all the stages of the innovation process (idea generation, idea selection, business analysis, service and process development, market test, and market launch), contribute to SI performance from an internal and external perspective. In particular, results indicate that FLE co-creation benefits the new service success among FLE and the firm's CUS, the constituents of the resources route (FLE outcomes and CUS outcomes). FLE co-creation also has a positive effect on the NSD speed, which in turn enhances the new service quality. NSD speed and new service quality integrate the operational route, which proves to be the most effective path to impact new service market performance.

2.3. CUSTOMERS INVOLVEMENT IN SERVICE INNOVATION

As we discussed in the introduction, companies are increasingly rethinking the fundamental ways in which they generate ideas and bring them to market (Chesbrough and Bogers, 2014). For this reason, CUS involvement is considered important for service development successful (Edvardsson et al. 2012). Their involvement in SI refers to the extent to which service producers interact with current (or potential) representatives of one or more CUS (Alam 2006).

The idea of collaboration with CUS during the innovation process is not new. It was highlighted in the CUS Active Paradigm (von Hippel, 1988) and the open-innovation literature (Chesbrough, 2013). According to the RDT, information on CUS needs and user experiences might be viewed as resources which companies depend on for successfully developing new services. From this perspective, cooperation with CUS can be seen as a bridging strategy to secure access to the critical resource of information on CUS needs (Gruner and Homburg, 2000; Salomo, Steinhoff, and Trommsdorff 2003). Besides, the RDT (Pfeffer and Salancik, 2003), based on the open systems perspective of organization theory (Scott and Davis 2007) emphasized the

role of CUS knowledge as a vital resource helping a firm to compete in the market. Information on CUS needs and user experiences can be seen as “a resource companies depend upon for successfully developing new products” (Gruner and Homburg, 2000).

The CUS presents an operant resource, which a company can use to facilitate innovation and boost competitiveness (Vargo and Lusch 2004). The service core is the role of CUS as actors and part-time employees in value-creating processes (Grönroos and Voima, 2013). The process nature of services suggests interaction with CUS before the service is complete. CUS evaluation of the service is therefore done both regarding the service process and the service outcome (Gustafsson, Kristensson, and Witell 2012). As the service process is important, the CUS cannot be excluded from the NSD process. New service introduction must be done with consideration of changed actions by CUS during the delivery process and CUS perception of the process (Edvardsson, Gustafsson, and Roos 2005).

Cooperation with CUS allows for gathering important user knowledge (Blazevic and Lievens, 2008) and aligning CUS needs with the developed market offerings, which increases chances for market success (Lusch, Vargo, and O'Brien 2007). Melton and Hartline (2010) highlighted that CUS contributions to new service content and delivery mechanisms help differentiate the product, can keep the offer simple enough to be readily understood by the target market, and contribute to product innovativeness and service quality.

CUS involvement in services innovation projects is sometimes recognized as the main difference between SI in general and service development processes (Alam and Perry, 2002; Coelho and Henseler 2012). CUS input and involvement in the SI process is suggested as being even more useful for services than for tangible products (Vermillion and Sagardoy 1999; Grönroos, 2011).

In general, strong CUS orientation is recognized as an important contribution element for “superior new service performance” (Atuahene-Gima, 1996; Cooper, 2001). The “superior” service is achieved due to a more accurate and complete assessment of users' needs and wants during interaction with CUS (Alam, 2002), avoiding the development of unacceptable or unimportant features, and better understanding by users of the new service.

Through involvement in different stages of the NSD process CUS can supply information on their experiences and share their knowledge on how performance of the service may be improved, participating in extensive consultation with users by means of interviews, focus group and team discussion (Alam, 2002).

2.3.1. Customers involvement in the new service development process

Despite the widely recognized role of CUS in the NSD process and the benefits resulting from their involvement (Magnusson, Matthing, and Kristensson 2003; Smith, Fischbacher, and Wilson 2007; Teixeira et al. 2012) there are very few studies regarding CUS involvement in NSD (Matthing, Sandén, and Edvardsson 2004; Gustafsson, Kristensson, and Witell 2012; Biemans, Griffin, and Moenaert 2015). There are even fewer studies examining the impact of CUS participation in different stages of NSD process on its outcomes. So far, according to current sources, there are just a few models studying the mediated effect of CUS involvement in the NSD process on its outcomes that have been tested empirically. Therefore, we present the conceptual models and the empirical results of their testing to better understand the current state of the issue.

The first sources

The first works in the literature from Scheuing and Johnson (1989) and Bowers (1989), address the general benefits of CUS involvement, but do not define a role for CUS at specific steps of the NSD process.

Scheuing and Johnson (1989) recommend prospect or user involvement in concept development, service design and testing, marketing program design and testing, service testing and pilot run, and test marketing. The authors do little more than state that users should be involved at those stages, and do not discuss why, how, or what is the specific expected outcome of their involvement.

Bowers (1989) does elaborate on the role of CUS in the idea generation stage of NSD. Drawing on the experience of the tangible goods industries, he recommends that service providers use consumer focus groups to gather new service ideas. For the firm, the outcome would be to understand CUS perceptions of how current products can be

improved and how their needs might be better satisfied with new products. Bowers (1989) also argues that CUS feedback helps firms create the most effective promotional message during the market-testing phase (in those relatively rare instances when market testing does occur in NSD.)

Martin and Horne (1993, 1995)

Martin and Horne (1993) examine CUS involvement in NSD as a factor distinguishing between successful and unsuccessful SI. Their studies do not focus on user involvement and outcome at any specific stage of the process, but instead investigate empirically whether CUS input to the overall process makes a significant difference to the outcome. They reported results of a survey of 217 firms (across a variety of service industries) in which executives rated the success ratio of new services implemented in the preceding two years. Firms with a 90% and higher success ratio were labeled successful innovators, and firms with a 49% or lower success rate were deemed unsuccessful innovators. Comparisons were drawn between the 27 successful and 37 unsuccessful innovators. Respondents reported the extent to which their firm used CUS information in concept development, business analysis, pre-launch testing and launch stages (i.e., CUS information input, not necessarily active CUS involvement) using a five point scale, where 5 represented “use in all stages” and 1 meant “no use at all”. Of the total sample of 217 firms, over 80% used CUS information in at least one stage (with 30% in all stages). The average score for successful innovators (2.32) was not significantly different than that for unsuccessful innovators (2.61), meaning that for their sample, use of CUS information did not affect the success of SI. The results are surprising and counter to expectations based on prior experience in NPD, but those results may be discounted due to the small sample size, and the use of a very subjective measure of SI success.

In a later study, Martin and Horne (1995) examined successful versus unsuccessful innovations within the same firm. They hypothesized that overall CUS participation in the NSD process should be higher in more successful SI. From a sample of 88 firms and 176 SI rated as most successful and least successful (based on sales volume and profitability), the authors found that on a seven point scale the most successful projects had a higher level of direct CUS participation (2.95) than did the least successful projects (2.23). In contrast to their previous between-firm study, the within-firm analysis did support the hypothesis that CUS involvement in development does positively affect

the overall outcome of a new service initiative. Perhaps the results of their earlier study are explained by the fact that CUS information use (passive, low intensity CUS involvement) is not as impactful as direct CUS participation in the process (i.e., high intensity involvement).

Edvardsson and Olsson (1996)

Edvardsson and Olsson (1996) discuss service development and recommend CUS involvement in development of the service concept and service process. The authors argue that user involvement is appropriate because CUS interpret the value and the quality in services, and new services sell when users see attractive added value. They contend that, “attractive and CUS-friendly services emerge from a dialogue with competent and demanding CUS... the various value-loaded activities in the service are defined in the dialogue with the CUS. We believe that this CUS-active paradigm, i.e., working interactively with CUS, is to be preferred when formulating and testing the service concept and developing service processes” (p. 142). Edvardsson and Olsson (1996) define service concept as “the description of the CUS’s needs and how they are to be satisfied in the form of the content of the service or the design of the service package... agreement between CUS needs and the service offer is essential” (p. 148). The service processes are those activities “that must function properly if the service is to be produced” (p. 148). Based on their evaluation of a number of empirical studies in Sweden, the authors contend that CUS involvement in concept and process-related stages yields new services that match CUS needs, have added value, and have “CUS-friendly” service processes.

Gustafsson, Ekdahl, and Edvardsson (1999)

The purpose of this paper is to illustrate how Scandinavian Airlines has tried to build its development activities on what is believed to be genuine understanding of the CUS' true needs based on what CUS want to do when they travel. They based the description on the Wilhelmsson and Edvardsson (1994) service model, using their four phases (idea, project formation, design and implementation).

The methodology used to carry out this work was through CUS survey and video recordings. The video recordings allowed study of CUS behaviour at an extraordinary

level of detail, over and over again, without running the risk of losing any vital information along the way. The video recordings included sequences where the passengers solved their own problems, and this information could prove vital and very useful when developers sit down to design new services, especially if the person being recorded could be involved in the interpretation of the sequence.

One of the primary outcomes of this study was a deeper understanding of passengers' needs and concerns throughout the service process, which would lead to the implementation of new and innovative services. Perhaps most important of all was to find a new approach in developing services, clearly focused on the CUS' perception of the service process. This is in line with what Edvardsson (1997) found to be crucial for success when developing new services or redesigning existing service offerings.

Alam (2002)

As already stated in Chapter 1, this study is the most detailed research study on CUS involvement in the various stages of NSD. Alam (2002) investigated the process of user involvement in new business-to-business service development in the financial services industry in each of ten sequential stages of process. Also, the author sought to identify four key elements of user involvement, including objectives, stages, intensity, and modes of involvement.

Case research was the main methodology used by Alam (2002). The population of interest was financial services organizations operating in Australia. A sample of 12 cases was determined using the purposive sampling method. These included both Australian and multinational firms. Firms with at least 50 employees were selected because exploratory interviews had shown that this minimum firm size was necessary to ensure an established NSD process in a company. This research is about NSD at the program rather than the project level. Within 12 case programs, a total of 48 new service projects were studied. That is, for each of the 12 cases, 4 recent new service projects were selected. The respondents for each case included two managers of the participating organizations and one business CUS/ user. The key-informant method was used for data collection. That is, all the respondents had two key characteristics. First, they were experienced practising managers in service development or a related position; second, they were closely involved in the development activities and had an understanding of the entire development process and user involvement.

The results show that users could be involved at all 10 stages of the development process, including strategic planning, idea generation, idea screening, business analysis, formation of the cross-functional team, service and process design, personnel training, service testing and pilot run, test marketing, and commercialization. However, user input into the three stages of idea generation, service design, and service testing and pilot run may be more important than other stages. One explanation for this difference in importance may be that a large number of powerful new service ideas need to be generated with user contacts and interaction. Similarly, user input and interaction in the service design process are important for designing a differentiated and unique service. Finally, an efficient service testing and pilot run may be conducted more effectively with user interaction and inputs (see Table 2.1).

Table 2.1. Activities at various stages of the development process

DEVELOPMENT STAGE	ACTIVITY PERFORMED BY THE USERS
1. Strategic planning	Limited feedback on proposed plan for new service development.
2. Idea generation	State needs, problems, and their solution; criticize existing service; identify gaps in the market; provide a wish list (service requirements); state new service adoption criteria.
3. Idea screening	Suggest rough grade to sales and market size; suggest desired features, benefits, and attributes; provide reactions to the concepts; liking, preference, and purchase intent of all the concepts. Help the producer in go/no-go decision.
4. Business analysis	Limited feedback on financial data, including profitability of the concepts, competitors' data.
5. Formation of cross-functional team	Join top management in selecting team members.
6. Service design and process/system design	Review and jointly develop the blueprints; suggest improvements by identifying fail points; observe the service delivery trial by the firm personnel. Compare their wish list with the proposed blueprints of the service.
7. Personnel training	Observe and participate in mock service delivery process; suggest improvements.
8. Service testing and pilot run	Participate in a simulated service delivery processes; suggest final improvements and design change.
9. Test marketing	Comments and feedback on various aspects of the marketing plan; detail comments about their satisfaction with marketing mixes; suggest desired improvements.
10. Commercialization	Adopt the service as a trial; feedback about overall performance of the service along with desired improvements, if any; word-of-mouth communications to other potential users.

Source: Alam (2002)

Finally, Alam (2002) demonstrated that although the users are involved in all the stages of the NSD, the intensity of their involvement varies across different stages. For instance, user involvement was more intense at initial stages of idea generation and screening and at the later stages of test marketing and commercialization of the development process. More specifically, the highest intensity of user involvement was at the stages of idea generation and idea screening, with somewhat less intensity at the last two stages of test marketing and commercialization.

Magnusson, Matthing, and Kristensson (2003)

This work focuses on the idea generation stage and conducts an experiment that demonstrates users' new service ideas can be as good or better than ideas produced by professional service designers. Three groups were given 12 days to come up with new uses for text messaging with mobile phones. One group consisted of professional developers from the R&D unit of a Swedish mobile phone company; the other two groups were made up of university student volunteers. One student group consulted briefly with professional developers who gave feedback on the technical feasibility of their ideas, and the other group received no assistance. Ideas submitted by all teams were assessed by experts for originality, user value and producibility. Ideas from both student groups were rated higher on user value than were ideas from professionals; ideas from students who did not consult were rated as more original than ideas from professionals or students who did consult. Professionals and consulting students had the most producible ideas.

The experiment showed that users can generate service ideas as potentially beneficial to a firm as those of in-house professional developers, and the potential producibility and profitability of those ideas improves when users are given the right amount of training/consultation as to what is or isn't technically feasible. When users get too much help, they begin to think more like unimaginative internal developers rather than representatives of the buying public; when they get too little help, their ideas are less producible. The study demonstrates that CUS involvement in idea generation improves the product-market fit (i.e., service marketability) of a SI.

Matthing, Sandén, and Edvardsson (2004)

The aim of Matthing's exploratory study was to examine new approaches that facilitate learning from and with the CUS in NSD. This paper draws on theory from market and learning orientation in conjunction with a service-centred model, and reviews the literature on CUS involvement in innovation.

The study was designed as a classical experiment including a control group, treatments, and independent judges to evaluate the outcome, where CUS involvement was compared to the normal working routines. The experiment trials were followed by interviews with all the participants where ideas could be probed and prototypes created, in order to understand in more detail how learning may occur. They focused the study on information-processing activities in the initial phase of the innovation process. The context chosen was an end-user service for mobile telecommunications known as SMS. Altogether 86 persons participated in the experiment. To objectively determine the performance, the evaluation process was based on the Consensual Assessment Technique (CAT).

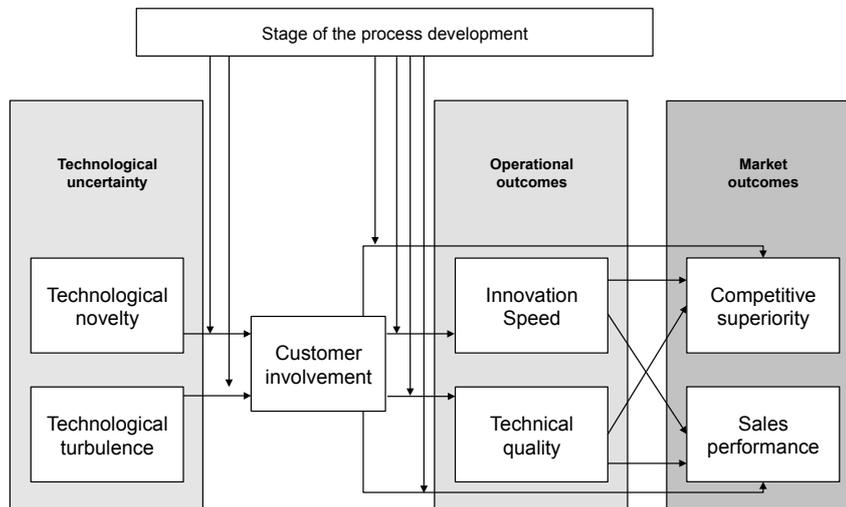
Matthing, Sandén, and Edvardsson (2004) argue more broadly, based on the same study findings, that CUS involvement in service development helps a firm to anticipate CUS' latent needs and develop new services to meet those needs. The experiment reveals that the consumers' service ideas are found to be more innovative, in terms of originality and user value, than those of professional service developers. Overall, this study provides a more convincing understanding of the contribution made by end users in the generation of new ideas.

Carbonell, Rodríguez-Escudero, and Pujari (2009)

Against this backdrop, Carbonell, Rodríguez-Escudero, and Pujari (2009) proposed three objectives: (1) to investigate the effects of CUS involvement on operational dimensions (innovation speed and technical quality) and market dimensions (competitive superiority and sales performance) of new service performance; (2) to examine the effect of technological novelty and technological turbulence on CUS involvement; and (3) to explore the moderating effect of the stage of the development process on the relationships between technological novelty, technological turbulence

and CUS involvement, and CUS involvement and new service performance. The original model is presented in Figure 2.4.

Figure 2.4. Theoretical framework for customers involvement in NSD process



Source: Adapted from Carbonell, Rodríguez-Escudero, and Pujari (2009)

A total of 807 firms with 75 or more employees in a varied set of industries were selected from Dun and Bradstreet's 2004 listing of Spanish service firms. A questionnaire was mailed to the person in charge of NSD at each company. The unit of analysis was the new service project. Respondents were asked to select a new service in whose development potential CUS or users had participated. A total of 102 complete questionnaires were returned, which indicates a response rate of 12.6%. Path analysis (AMOS 5.1.) was used to test the model

Findings revealed that whereas CUS involvement had a positive direct effect on technical quality and innovation speed, it had an indirect effect on competitive superiority and sales performance through both technical quality and innovation speed. The study also found a positive effect of technological novelty as well as technological turbulence on CUS involvement. Contrary to expectations, the study did not find any moderating effects of the stage of the development process but, it obtained a positive relationship between CUS involvement and innovation speed in the idea generation stage. A positive relationship was also identified between CUS involvement and technical quality in idea generation, development and test stages.

2.4. FRONTLINE EMPLOYEES AND CUSTOMERS INVOLVED JOINTLY IN SERVICE INNOVATION

As has already been highlighted, the involvement of the FLE and the CUS are both critical to business services, particularly for SI. But there are very few studies of SI in which these stakeholders have been analysed jointly. For this reason, in this section we will try to shed light on the relationship between them.

2.4.1. Interaction and integration of stakeholders

Interaction is a mutual or reciprocal relationship or influence with stakeholders (Bhattacharya, Korschun, and Sen 2009). As regards the type of relationship, research studies usually distinguish different players forms of interaction and the firm: participation, consultation, cooperation and information (Grafé-Buckens and Hinton, 1998; Green and Hunton-Clarke, 2003). The similarity of these terms means that they are often used interchangeably. The intensity and frequency of communication among actors has often been used to measure the interaction with them (Boiral and Heras-Saizarbitoria, 2015). Communication is an indispensable element in the relationship with these one (Freeman 2010). This communication takes different forms, (unidirectional–bidirectional, formal–informal, regular–occasional, structured or not, oral or written) giving rise, therefore, to different communication strategies (Plaza-Úbeda, Burgos-Jiménez, and Carmona-Moreno 2010). Although communication is fundamentally related to interaction, it also helps to overcome information asymmetry (Kulkarni, 2000) and it can foster other aspects such as integration.

Stakeholder integration is related to the knowledge of these groups or their information requirements (Gebert et al. 2003). When communication is unidirectional and directed from it to firm, it mainly improves the firm's knowledge; in the opposite direction, it helps to satisfy agents' demands (Kern, 2009). Stakeholder integration constitutes a capability that involves the coordination of several intangible assets (e.g. knowledge) (Sirmon, Hitt, and Ireland 2007). The complexity of the processes necessary for player integration and the need to coordinate them mean that they are difficult to imitate and that they may be considered a strategic capability (Grant, 1991). In brief, through stakeholder integration, firms may generate new knowledge and innovative solutions to complex issues (Ayuso, Rodriguez, and Ricart 2006).

Therefore, the information integration that comes from player integration is key to the success of the creative process. For example, the members in a group with high information integration share information more effectively, carefully attend to one another's perspectives, and freely question and challenge these perspectives and their underlying assumptions. Thus, they are more likely to achieve a common understanding among themselves and consistency across various decisions made by the group (Sethi 2000).

2.4.2. The interaction of frontline employees and customers

The development and sustenance of long-term relationships between CUS and FLE has emerged as a major theme in the academic literature on marketing channels as well as in business-to-business marketing (Tzokas and Saren 2004; Windahl and Lakemond, 2006; Ostrom et al. 2010). Even for many companies, the dyadic interaction between FLE and CUS is becoming increasingly important (Liao and Chuang, 2004; Menguc et al., 2013). But despite the growing interest and importance of the issue, previous research connecting CUS and FLE continues to be sparse and offers mixed conclusions.

For example, Bitner, Booms, and Mohr (1994) offered different conclusions in their study about the relationship between FLE and CUS. First, employees often modify their behaviour continuously according to the feedback they receive while serving CUS. Second, because contact personnel meet with CUS quite often, they serve a boundary-spanning role in the firm. As a result, the authors demonstrate that FLE often have a better understanding of CUS needs and problems than other employees in the firm.

In the same vein, Franke and Park (2006) presented the following assertions for these relationships: 1) FLE are interested in developing long-term relationships with their CUS; 2) relationships occur between individuals, thus individual traits are important in developing and maintaining those relationships; 3) relationships are developed over time and over several transactions, therefore interpersonal factors may have a direct effect on individual transactions, and may also have an indirect cumulative effect on the entire relationship through other constructs (such as development of trust and satisfaction with prior purchase experiences); and finally, 4) the quality of the FLE-CUS relationship should be assessed from the CUS's perspective as, in a consumer's

market, purchase decisions are driven by the CUS's perceptions of the transactional environment.

On the other hand, according to Role and Script Theory outlined by Grönroos (2011), Yim, Chan, and Lam (2012), van der Heijden et al. (2013) and Schank and Abelson (2013), it is also clear that different perspectives may arise when roles are less defined. A participant is unfamiliar with expected behaviours, or interferences require the enactment of complex or less routine subscripts. In addition, attribution biases suggest that there will also be significant different viewpoints.

For this reason, given the strategic importance of the relationship between CUS and FLE, it is necessary to explore the extent to which the involvement of these two collectives is beneficial when they are interacting and participating in the same project.

2.4.3. Service Dominant Logic and Value Co-creation

This context of changing roles (as proactive interaction between participants in the service process) and changing perspectives of the CUS (as a valued resource to integrate information) has precipitated the concept of Value Co-Creation. Furthermore, Value Co-Creation has gained considerable prominence through its inclusion within S-D logic, a radical new perspective on marketing (Vargo and Lusch, 2004, 2008, 2011, 2015). For this reason, it is essential to define these two concepts since they are key to understanding this thesis.

Service-Dominant Logic (S-D Logic)

Previous research has analyzed SI mainly from an assimilation approach, assuming that innovation drivers are similar in the product and service contexts and, to a lesser extent, from a demarcation approach, assuming that services are a special type of goods (i.e., intangible goods, with distinctive features), which limits generalization of the results (Ordanini and Parasuraman 2011). Both approaches are inspired by a goods-dominant logic, as the service concept and its innovation process are inherently subordinated to physical goods (Michel, Brown, and Gallan 2008; Ordanini and Parasuraman 2011; Skålén and Edvardsson 2015).

However, the S-D Logic (Vargo and Lusch 2004, 2008) provides a new framework for studying SI that builds from three basic premises: (1) service is the central mechanism for economic exchange, that is, service is exchanged by service; (2) service is based on the joint application of specialized competences (i.e., skills and knowledge) by the firm and any other relevant actors (e.g., CUS, FLE, or business partners), which represents a shift from static resources (such as plants and equipment) to dynamic or operant resources (people's knowledge and skills) (Edvardsson et al. 2012; Lusch, Vargo, and O'Brien 2007); and (3) service is provided directly to other market participants or is provided indirectly through tangible goods (Vargo and Lusch 2004). In brief, the essence of S-D Logic is that: Service provision is the fundamental purpose of economic exchange and marketing – that is, service is exchanged for service. S-D Logic represents an 'evolution, rather than a revolution' of marketing (Gummesson, Vargo, and Lusch 2010) and 'a broader perspective of markets compared with traditional perspectives that focus on the exchange of goods' (Chandler and Vargo 2011). The foundational premises are summarised in Table 2.2.

Accordingly, both services and tangible goods can be understood as a constellation of resources and can therefore be encompassed under S-D Logic principles, which provides a synthesis approach for examining SI (Drejer 2004; Ordanini and Parasuraman 2011; Skálén and Edvardsson 2015). From this perspective, SI is defined as the result of the integration of operant resources in order to provide new or enhanced value propositions from the CUS' viewpoint (Skálén and Edvardsson 2015). Thus, from the S-D Logic perspective, FLE are an important source of competitive advantage (Vargo and Lusch 2004) as they "enable firms to make value propositions" (Karpen, Bove, and Lukas 2012) and, therefore, to innovate providing new service solutions (Edvardsson et al. 2012; Melancon et al. 2010; Melton and Hartline, 2010, 2013; Ordanini and Parasuraman, 2011).

Table 2.2. S-D Logic foundational premise modification and additions

FP's	Current Foundational Premise	Comment/explanation
FP1	Service is the fundamental basis of exchange	The application of operant resources (knowledge and skills), 'service,' as defined in S-D logic, is the basis for all exchange. Service is exchanged from service
FP2	Indirect exchange masks the fundamental basis of exchange	Because service is provided through complex combinations of goods, money, and institutions, the service basis of exchange is not always apparent
FP3	Goods are a distribution mechanism for service provision	Goods (both durable and non-durable) derive their value through use – the service they provide
FP4	Operant resources are the fundamental source of competitive advantage	The comparative ability to cause desired change drives competition
FP5	All economies are service economies	Service (singular) is only now becoming more apparent with increased specialisation and outsourcing
FP6	The customers are always a co-creator of value	Implies value creation is interactional
FP7	The enterprise cannot deliver value, but only offer value propositions	Enterprises can offer their applied resources for value creation and collaboratively (interactively) create value following acceptance of value propositions, but cannot create and/or deliver value independently
FP8	A service-centred view is inherently customers oriented and relational	Because service is defined in terms of customers determined benefit and co-created it is inherently customers oriented and relational
FP9	All social and economic actors are resource integrators	Implies the context of value creation is a network of networks (resource integrators)
FP10	Value is always uniquely and phenomenological determined by the beneficiary	Value is idiosyncratic, experiential, contextual, and meaning laden.

Source: Vargo and Lusch, (2004; 2008; 2015)

*FP's = Foundational premises

Value Co-creation

Value co-creation has been variously defined in the literature. The different conceptualizations can be divided broadly into those that are primarily firm focused and those that are CUS focused. Not surprisingly, those articles that focus on the firm are largely from Strategic Management, Strategy and Industrial Marketing. These authors view the CUS as primarily an input into firm processes, such that "CUS are inputs into firm processes aligning them as temporary members of the firms" (Gummesson 1996, p. 35). However, since Prahalad and Ramaswamy's (2004) article, there has been an acknowledgement that value co-creation may extend beyond the boundaries of the firm.

In S-D logic (Vargo and Lusch 2004, 2008), value co-creation is accomplished through resource integration. What have traditionally been referred to as the “firm” and the “CUS” are identified as resource integrators; this suggests that each benefits from the service of the other, and the integration of resources. However, CUS may integrate resources to achieve benefits from sources other than the focal firm, such as from other firms or service providers (Arnould, Price, and Malshe 2006; Baron and Harris 2008), from private sources such as peers, friends, family even other CUS (Vargo and Lusch 2011). McColl-Kennedy et al. (2012) argued that there is another potential source, that is, from the CUS’ self-generated activities (e.g., by accessing their own personal knowledge and skill sets and through their cerebral processes) that contribute to and that ultimately become part of this co-creation. Additionally, the CUS can assist the firm in service-provision processes in various ways, through engaging in CUS-provider processes, traditionally viewed as “firm” activities, such as service design (e.g., NSD) and delivery of service, for example, self-service (Etgar, 2008). These activities may be regarded as “coproduction” activities (Vargo and Lusch, 2011). They may offer intrinsic reward for the CUS, such as enjoyment from the actual experience, and extrinsic rewards, such as being able to customize, time and/or cost reduction and being in control (Bateson 1985; Dabholkar 1996). However, there is likely to be considerable effort and risks, including for instance, possible physical, financial, psychological, performance, social, and time-related risk (Etgar, 2008).

Based on these conceptual issues summarized previously, McColl-Kennedy et al. (2012) defines CUS value co-creation as a benefit realized from integration of resources through activities and interactions with collaborators in the CUS’ service network. That is a multiparty all-encompassing process including the focal firm, and potentially other market-facing and public sources, private sources, as well as CUS activities (personal sources). Activities are defined as “performing” or “doing” (cognitive and behavioural). Interactions are the ways individuals engage with others in their service network to integrate resources. It is important to note that activities are the active doing of things. Activities may range from simple (low level) activities such as compliance with service provider/providers, and collating information to complex (high level) activities such as co-learning, actively searching for information and providing feedback. Regarding interactions, some individuals will choose to, or be able to, interact with many individuals, while others may interact with few.

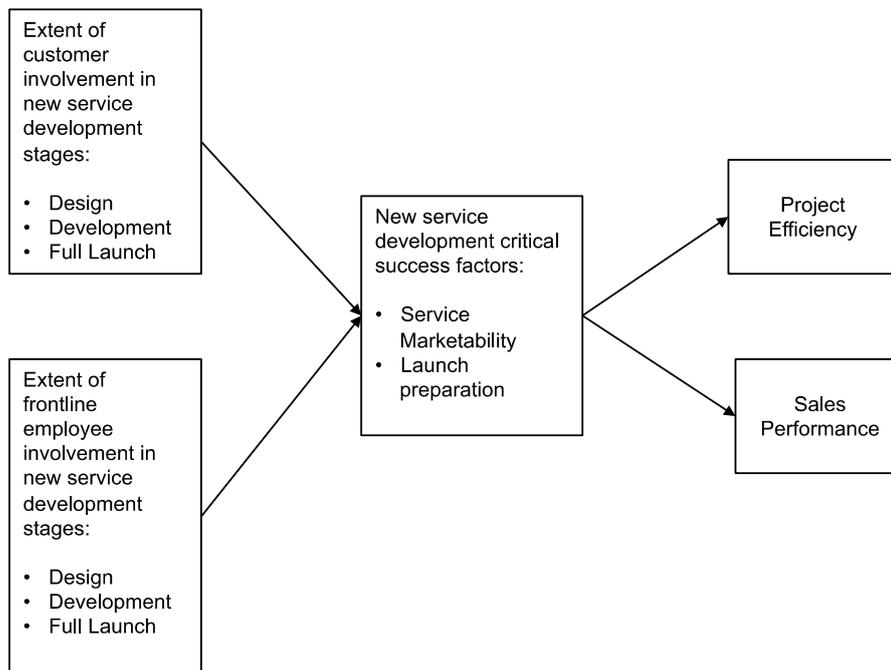
The speed at which academics are advocating a paradigmatic shift within the marketing discipline (Arnould, Price, and Malshe 2006; Gummesson, Vargo, and Lusch 2010; Vargo and Lusch 2015) and the desire to set value co-creation up as a foundation of marketing (Sheth and Uslay, 2007) is somewhat in juxtaposition to the lack of clarity over the concept and how it impacts both firm and CUS (Schau, Muñiz, and Arnould 2009; Hoyer et al. 2010; Ostrom et al. 2010). The need to co-create, refine and advance S-D Logic through empirical study is encouraged (Brown, 2008). Vargo and Lusch (2015) present it as open-source requiring input from a community of scholars to generate, test, transform or, if appropriate, abandon the theory.

2.4.4. Models of frontline employees and customers involved in the New Service Development Process

Melton and Hartline (2010)

Melton and Hartline (2010) were the first researchers to analyse systematically the influence of FLE and CUS on NSD performance in the same service project. The research contributed to the NSD literature by demonstrating that CUS and FLE involvement can improve project outcomes through their positive effects on specific mediating factors. By identifying the effects of participant involvement in specific stages of the NSD process (design, development and full launch), the authors suggested that organizations could determine optimum roles for CUS and FLE in NSD to yield a more efficient use of organization resources and improve project results. See Figure 2.5.

Figure 2.5. Theoretical framework



Source: Melton and Hartline (2010)

Firstly, the authors conducted an exploratory study to better understand the relationship between CUS and FLE involvement in the NSD process and new service performance. In-depth interviews were conducted with managers of nine service firms to learn about their NSD practices. Managers were interviewed in the health care, employee benefits, assessment and placement, public records research, and business telecommunications support sectors. Findings from the exploratory study were used to support the relationships depicted in Figure 2.5 and to generate hypothesized relationships in the empirical study. Subsequently, data for the empirical study were collected from a diverse sample of firms in the financial (banks, insurance companies, and credit unions), health care (hospitals, clinics, medical group practices, and other health care organizations), education (universities and community colleges), technology, legal, transportation, government, agricultural, public records research, and entertainment service sectors. With information gathered from a American list provider and organizations' web sites, a list of key contacts likely to have responsibility for and extensive knowledge of SI activities in their organization was compiled. Each organization's president, marketing vice president, planning officer, college dean, or medical practice executive received a survey with a cover letter asking them to choose a SI project developed and introduced by their organization within the previous three

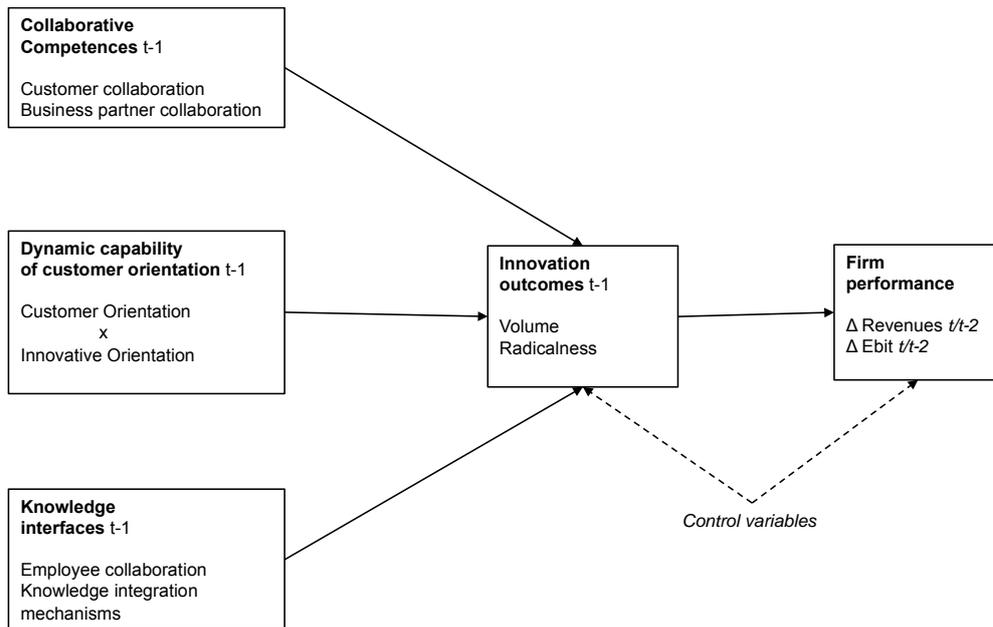
years and answer a series of questions about the project's process, participants, characteristics, and outcomes. Of the 3,773 surveys distributed, 244 were completed and returned. Of the 244 surveys received, 84 were dropped due to incompleteness, leaving a usable sample of 160 respondents (4.2% response rate). Among the usable responses, the largest representation came from the education (50%), health care (30%), and financial services (13%) sectors. To test the relationships, Melton and Hartline (2010) used SEM using multi-item measures for each construct.

Findings are based on in-depth managerial interviews and survey data collected from 160 organizations across a variety of service sectors. The results supported hypotheses that CUS and FLE participation in specific stages of the NSD process indirectly affects sales performance and project development efficiency outcomes. Positive effects were mediated by the new service success factors of service marketability and launch preparation. They suggested that to produce successful new services, firms should involve CUS in the design and development stages to help identify market opportunities, generate and evaluate new service ideas, define desired benefits and features of the potential service, and provide extensive feedback for product and market testing. FLE are less effective than previously thought as a source of new service ideas. They concluded that firms should instead focus on incorporating those personnel in the full launch stage to effectively promote and deliver the new service.

Ordanini and Parasuraman (2011)

The authors invoke insights from the emerging S-D Logic perspective and propose a conceptual framework for investigating the antecedents and consequences of SI. They then develop a set of hypotheses pertaining to potential predictors of two distinct facets of SI (volume and radicalness) and the impact of the latter on two measures of firm performance (revenue growth and profit growth). See the details in Figure 2.6.

Figure 2.6. Theoretical framework



Source: Ordanini and Parasuraman (2011)

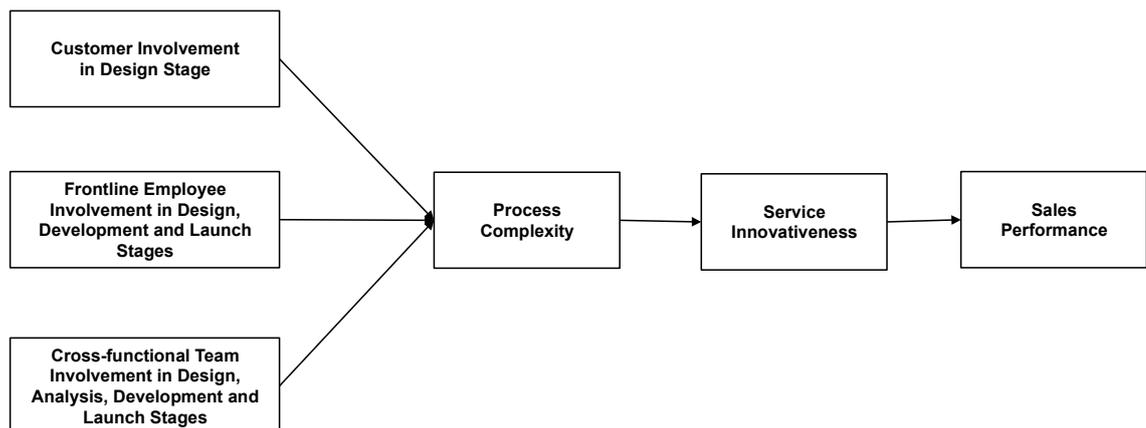
They tested their proposed model using data from a sample of 193 five-star luxury hotels in Italy. Data on the independent variables were collected through a self-reported survey. They sent survey-participation invitations to general managers as the key informant in all hotels in their sampling frame. They collected the data using computer-aided telephone interviewing. Finally, ninety-one hotels participated in the study (47% response rate). Data on the dependent variables (i.e., performance measures), were obtained from the AIDA Bureau Van Djick data-base, which contains income statements and other accounting data for Italian firms with more than 10 employees. Finally, they used three-stage least squares to test the proposed framework.

They found that (a) collaborating with CUS fosters innovation volume but not radicalness (and vice versa for collaborating with business partners); (b) a firm’s CUS orientation—both directly and in interaction with innovative orientation—contributes to innovation radicalness; (c) collaborating with contact employees enhances both innovation volume and radicalness; (d) the use of knowledge integration mechanisms contributes to innovation radicalness (but not volume); and (e) both innovation outcomes have significant but somewhat different effects on the two performance measures.

Melton and Hartline (2015)

Extending the model proposed in 2010, these authors shed light on radically innovative new services. They proposed and tested a model in which the effect of CUS, FLE and cross-functional team (CFT) involvement on service innovativeness was mediated by process complexity. In other words, having CUS and employees as participants in a SI project is necessary, but not sufficient to bring about a radically innovative outcome. Further, they suggested that a radical SI is more likely to arise from deployment of these resources in an elaborate, multi-faceted process with many opportunities for creative interaction of CFT members, FLE and CUS. For a better understanding see the Figure 2.7.

Figure 2.7. Theoretical framework



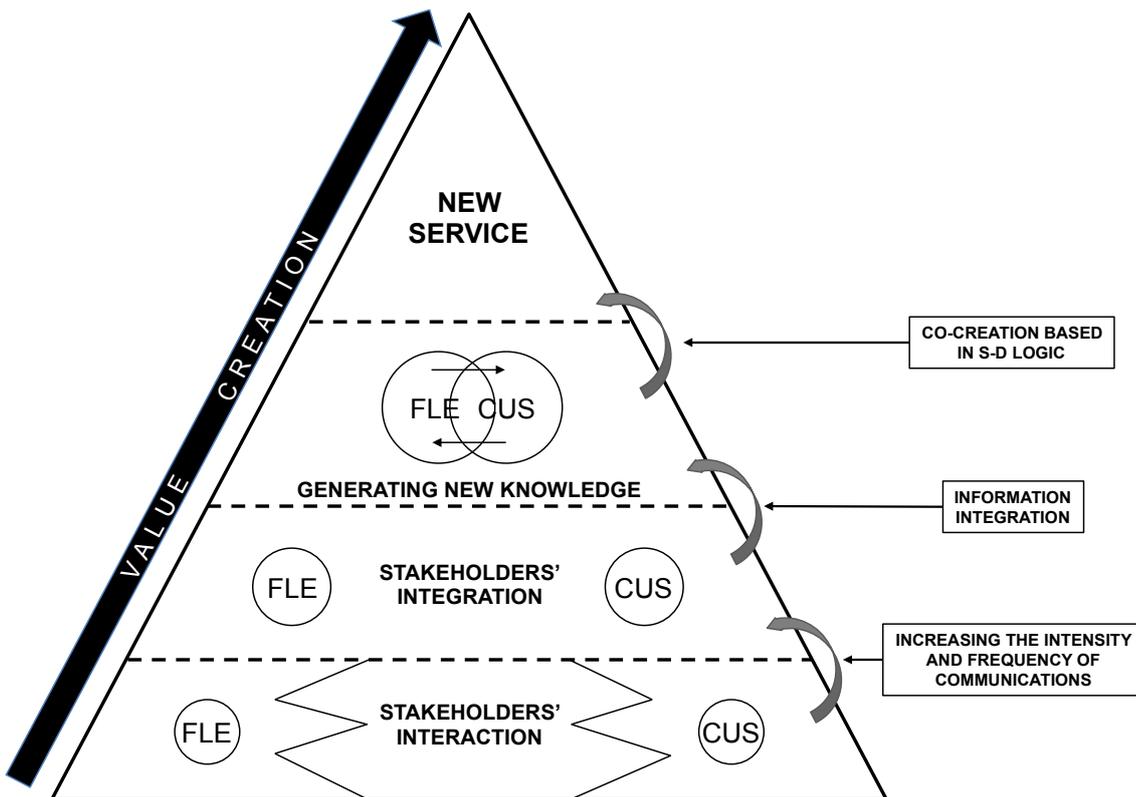
Source: Melton and Hartline (2015)

The methodology used in this work was the same as in the work of 2010. The primary finding of the study was that CUS, FLE and CFTs do have significant indirect positive influences on new service innovativeness. CUS and FLE involvement in the NSD process increases the innovativeness (radicalness) of a new service when their effects are mediated by the complexity of the NSD process. An important contribution to the NSD literature was the finding that CUS involvement in the NSD process only impacts service innovativeness (radicalness) when CUS are involved in the design stage, but not in the development stage. The authors demonstrated that on radical SI projects, service designers should involve CUS extensively in idea generation, concept and early prototype testing, but not press for their ideas on the details of functionality,

features and other specifications. Their study demonstrated the positive influence of all three operant resources on service innovativeness in a single model. CUS and FLE can make significant contributions to radical SI projects in addition to the contributions of CFTs.

Once completed the literature review, in which we have explored the importance of the stakeholders' interaction and integration in a business environment in general, we have focused on the controversial interaction between FLE and CUS. We have shown the influence that the new S-D Logic has in the co-creation concept as regards these two agents, etc. as we want to provide a synthesis of knowledge that it is the essence of our research. It can be seen in the Figure 2.8.

Figure 2.8. Synthesis of knowledge



In this pyramid we want to emphasize the conversion of a commercial relation between FLE and CUS in a value creation relation to obtain a new service. The base of this knowledge pyramid shows the initial situation between these actors. This is merely commercial interaction between both. In it, we can see the traditional vision of these

actors, where each one works according to its individual targets or motivations. But this situation has been changing since firms have increased the intensity and frequency of communication with these agents. That is, these actors have been used as information sources separately for the firms. This mentality change has been reflected in a relevant flow of research. It has shown that the involvement of the FLE and CUS in service innovative projects is positive for the firm, but these effects only have been measure separately. Moving forward in our theoretical approach, in the third pyramid phase, there is evidence that the information obtained from each of these actors could be conditioned by the close relationship itself that exists between them. It is therefore very important to study these actors jointly. As has been reviewed in this chapter, there are very few studies in the literature to examine this situation, but at the same time, it is considered a priority research line in SI (Ostrom et al. 2015). Even so, recent works explore the need to integrate information among these stakeholders to generate new knowledge (Kristensson, Matthing, and Johansson 2008; Ordanini and Parasuraman 2011). This new knowledge would be not generated through the information gathered from these actors separately but the information shared between them. Finally, these shared flows of information that generate new knowledge would be the maximum value creation through the co-creation between them based on the approach of S-D Logic. This process would perform in a new service with a higher value creation.

CHAPTER 3
EXPLORATORY RESEARCH
AND HYPOTHESES
DEVELOPMENT

The previous Chapter 2 has studied in depth the FLE and CUS, both agents, which constitute a key area of interest in the literature, while in turn being highly complex. Bearing in mind this complexity, an initial approach to the topic was deemed to be necessary. The intention for this is to allow us to delimit the relations that will be a study object in the empirical part of this investigation. In this sense, Chapter 3 is articulated as a key piece of this doctoral thesis, since the literature provides an opportunity to observe the reality in order to reinforce the hypotheses of the study. In the first part of this chapter we undertake a preliminary exploration of these concepts by using in-depth interviews. The resulting analysis brings us closer to our study environment and consolidates the hypotheses, which will be developed in the last chapter epigraph, from another complementary perspective. These hypotheses are not only endorsed by the literature review but also by the qualitative information obtained with these in-depth interviews.

3.1. EXPLORATORY RESEARCH

There are many researchers who have argued that exploratory research is very useful to generate a complete and in-depth knowledge of a complex phenomenon (Eisenhardt and Graebner 2007) that requires the ability to answer questions related to the "how" and "why" of this phenomenon (Yin 2013). The in-depth interviews were the main source of information, as they provided detailed information and they can focus in on the study topic under scrutiny (Siggelkow 2007). This methodology has also been defined as a strategy that focuses on an understanding of the aspects that characterize a unique phenomenon, as well as the relations among the actors involved in the same (Yin 2013). The following describes the justification of the method, the theoretical framework that sustains it and the selected cases.

3.1.1. Justification and steps

The purpose of this exploratory study is to analyze from a qualitative point of view the role of FLE and CUS in SI projects, which factors influence in this process and finally, the results of incorporating these stakeholders in these innovation projects. This methodology was chosen for three reasons. First, this method may offer insights that might not be achieved with other approaches (Rowley 2002). Secondly, rather than making statistical generalizations, the major intention is to deeply understand each

project individually (Eisenhardt 1989), collecting evidence from different sources and analyzing the preliminary theoretical framework within each individual case. Finally, it can be a useful tool for the preliminary, exploratory stage of a research project (Eisenhardt 1989; Yin 2013; Rowley 2002). For these reasons, the use of this method can be interesting to gain a deeper knowledge of these relationships and it is ideal because it allows us to examine in a flexible and holistic manner the relevant issues to be able to proceed then to an empirical analysis.

The process is based on the suggestions made in earlier works (Eisenhardt 1989; Yin 2013). Thus, the approach followed in this exploratory research is that which has already been outlined in previous works and which have been published in major journals (Melton and Hartline 2010; Perks, Gruber, and Edvardsson 2012; Salunke, Weerawardena, and McColl-Kennedy 2013).

Specifically the analysis of the compiled information has been carried out using the following phases:

1. **Independent review.** People not involved in the research codified the interviews so that the process was as objective as possible. The profile of these people corresponds to five academics. Once transcribed, the PhD candidate and the thesis supervisor checked the reports and they highlighted the fundamental research aspects.
2. A **meeting** with the target audience to pool ideas, to debate the contrasting findings and to identify the **main topics**.
3. Once the statements were worked in depth, they were grouped together into wider **general topics**. The process began in January 2014, when the first interviews were carried out and continued until May of the same year.
4. When the statements were grouped it was possible to **identify sub-groups** of equal or related statements.
5. Finally, the topics and content were reviewed over a period of several weeks, identifying relationships, which would provide the basis on which to develop an initial model.

As a framework for conducting these steps, we developed a protocol that has served as a guide for the development of this methodology (see Annex II). In this, we specify the purpose of this exploratory research and the target audience to which it should be directed. Also, we designed a semi-structured questionnaire, which would formalize some questions to be included in the interviews. It was, nevertheless, decided that the interviews should be as similar as possible to a conversation, so as to limit the bias of the interviewer and highlight the strengths of each case.

The objective defined in the protocol was to approach the people who carry out activities related to NSD projects as part of their daily activity. This contact would allow us to find out about their actions with real and concrete examples. Therefore, bearing in mind that the empirical analysis would be answered by the person in charge of developing new services, the interviews centered only on this group.

The persons in charge of developing new services are the persons who inside the company environment lead the activities related to SI. They work in a team and they follow the strategy and targets of their company. For this reason, these persons in charge had full knowledge of the participants who had taken part in each innovative project. The interviews were conducted fundamentally with Project Managers, General Managers, CEO's (Chief Executive Officer), COO's (Chief Operating Officer) and Marketing Directors.

We asked them to select a new service, which their company had launched in the last three years (since 2012) and it was made clear that it was not necessary to have been successful in the market. This was so that it provided sufficient information about the development and the results of the same project. This service had to meet both of the following criteria:

1. The people interviewed had a decisive participation role and contribution in the service project;
2. That employees and CUS had taken part in its development.

Next, groupings of questions were defined, including for both FLE and CUS, the results of their involvement, and some factors that were determined their participation (managerial and personal factors).

3.1.2. Selection and unit of analysis

A set of criteria was used to select the respondents that were part of the exploratory study. First, the participating organizations had to appear in the "Business Directory of the Murcia Region" that is published by INFO (Murcia Regional Development Institute) annually. This database includes information about sectors, sales, activities and personal contacts. They also had to be companies belonging to the sectors that were going to be studied later in the quantitative study. Specifically, they were companies in these sectors: "Professional, Scientific, and Technical Services", "Manufacturing", "Information and Telecommunications", "Finance and Insurance", "Administrative and Support and Waste Management and Remediation Services", "Health Care and Social Assistance", "Arts, Entertainment, and Recreation", "Accommodation and Food Services" and "Retail Trade". According to the Spanish Statistical Office (INE), this classification corresponded to the most innovative sectors of the Spanish economy in terms of R&D investment in 2014. Finally, they had to want to take part in the study. To this end, assistance was requested from other institutions such as the European Centre of Business and Innovation of Murcia (CEIM) and the Office of Transference of Research Results (OTRI) of Murcia University, which sent out emails requesting participation in this study.

Finally, we interviewed 12 people in charge of developing new services. The selection of this number of interviews meets the requirements established in Eisenhardt's (1989) work, who affirms that there must be more than four interviews. In Table 3.1 we display some characteristics of the companies and the interview dates. We have assigned a code to each interview so that conclusions could be extracted without revealing the company's identity. Thus, we fulfill the promise to treat the information in an anonymous and global manner.

Table 3.1. Characteristics of the companies and the interview dates

Code	Gender	Age*	Status**	Sector	Sales (Mill. €)	Interview date 2014	Interview duration (min)
I1	Male	Senior	CEO	Manufacturing	18	January	70
I2	Male	Mature	Project Manager	Finance and Insurance	102	January	60
I3	Male	Mature	COO	Retail Trade	391	January	60
I4	Male	Mature	Project Manager	Arts, Entertainment, and Recreation	250	February	90
I5	Male	Mature	CEO	Professional, Scientific, and Technical Services	3	February	60
I6	Male	Mature	Marketing Director	Accommodation and Food Services	65	February	60
I7	Male	Senior	General Manager	Health Care and Social Assistance	22	February	60
I8	Male	Mature	Project Manager	Information	1800	March	120
I9	Male	Mature	Marketing Director	Manufacturing	550	March	100
I10	Male	Mature	Project Manager	Administrative and Support and Waste Management and Remediation Services	65	March	80
I11	Male	Senior	CEO	Public Administration (Hospital)	-	April	60
I12	Male	Mature	CEO	Professional, Scientific, and Technical Services	1	May	45

* 0-25 years young; 25-56 mature; >56 senior

** CEO (Chief Executive Officer), COO (Chief Operating Officer)

Personal in-depth interviews were carried out with every respondent between January and May 2014. The interviews lasted between 45 and 120 minutes, with an average of approximately 75 minutes. The PhD student and the supervisor conducted the interviews in the company. This helped them to have a direct relation with several members and observe “in situ” the business process. As previously indicated, all interviews were audio-recorded and transcribed later for analysis.

Before each interview, one or two improvements or new recent services were studied with the aim of beginning the interviews by asking each of interviewee about the history of this improvement or new recent service and how it had been designed and implemented. This also allowed us to compile excellent information about the professional career of the person in charge of developing the initiative and the situation on the market, as well as the portfolio offered by the companies.

As we have seen in the preceding paragraphs, the unit of analysis in our case is the innovation project in each company, since the target of the study is to know how the company carries out their NSD with the participation of FLE and CUS.

3.1.3. Results of in-depth interviews

The content of the interview was based on a guide with open questions so that the interviewers were contributing the maximum information possible during the interview time allocated. The guide was structured in six parts: 1) Factors that determine the FLE and CUS involvement in SI projects (firm and personal factors), 2) FLE involvement, 3) CUS, 4) Relationship between FLE and CUS, 5) NSD success and 6) Degree of SI. Through our analysis the more significant comments made by the interviewees on each of the topics will be highlighted.

Prior to meeting, respondents were asked about their degree of project knowledge and if they were able to recognize some features of the people who participated in the projects. In all the cases, they pointed out that they knew perfectly the service and the actors who had taken part in it. The following exemplifies one response:

15. *“As the person responsible for the new services development team, I would be perfectly able to identify the creative features, the degree of identification, responsibility and openness of the people involved in each new SI project”.*

3.1.3.1. Factors that determine the involvement of frontline employees and customers

Strategic factors of the firm

There have been different company strategic factors amongst which we emphasize the following. With regards to the factors that determine the FLE involvement, we have found that the development of innovative culture by the firms promotes FLE involvement in innovation projects.

12. *“The absence of an innovative culture, orientation or philosophy from the company, makes the incorporation of new ideas on the part of the employees and CUS difficult”.*

18. *“The company encourages an innovation culture amongst its employees, doing internal employee evaluations and internal promotion competitions to find the most innovative seller and their creative ideas”.*

I12. "The board has a philosophy of continuous improvement of processes on the basis of two goals: the improvement of technology and the human capital involvement in idea generation".

I10. "To ensure that our employees work in the NSD process, we have to promote it. Firstly, we need to generate this innovative culture and then carry out a training plan and career for our employees".

I9. "We have created an innovation committee formed by all departments to assess new service launches".

To better develop the innovative culture, the firms have incorporated software or internal processes that have facilitated the information flow from employee to the company.

I1. "We have an internal consultation process to incorporate new knowledge into our system".

I2. "The company has an internal circuit for progress proposals from the employees".

I4. "The company has a feedback system at the point of sale that encourages innovation".

I12. "The company carries out a quality audit each month with sellers to see the improvements that can be performed in the service".

I8F. "An intranet exists solely for the purpose of generating innovative ideas from the commercial network".

Furthermore, we have identified that companies have an entrepreneurial and CUS orientation, to have a closer relationship with their CUS and take them into account in the new services improvement and development.

14. "The company orientation to the client allows the client to gain enough confidence to speak to us about the problems that it sees. The CUS are the first one who wants to improve the service".

17. "The company communicates to the client who suggested the improvement if their idea has been implemented. Also, the company gives the reasons for not implementing an idea if that is the case".

18. "We are always thinking about how we can differentiate ourselves from the competition".

Personal factors of frontline employees

Other factors considered important by respondents for FLE were personal factors.

16. "When the company selects the doctors, it bears in mind their personal profile. The company selects doctors who have expressed CUS orientation, a high degree of permeability and innovation".

112. "The value of the employee perceived by the client depends on or is determined by the employee's personal characteristics".

In all cases, the importance of the employees' openness to experience and their interest in interacting with the CUS's external actors is stressed.

12. "Employees have contact with other entities from which they extract new ideas that they try to incorporate into their work".

15. "The open character of our sellers helps the clients to participate more in the company".

I9. "Being open to the trends of the market via internet, going to specialized chats, speaking with other people in order to find out sector trends, etc., allows our staff to raise new services with the company".

I12. "Our employees subscribe to different innovation forums and they are sensitive to the new sector trends. In these forums, they look for new forms to improve their work and to find new business opportunities".

Another of the personality factors is the creativity level that employees demonstrate in each project.

I3. "The employees are quite creative and this helps them to develop proposals to the sales team and internal management".

I8. "Sales personnel who are more involved in innovation tasks are the most creative".

I10. "The company values more the employees who are more creative, proactive and responsible".

Finally, the last factor that the companies manifest as a determining factor is the degree of OID.

I3. "Employees who are identified or involved with the company are those who provide us with better CUS information and the best improvement proposals".

I5. "Employees suggest projects, ideas, improvements because they feel they are part of the company and the company is an important part of their lives. In short, because they feel more identified with the company".

I10. "Employees participate in an improvement process because they have a major company identity, commitment and responsibility".

Personal factors of customers

In terms of the factors that determine CUS involvement in SI projects, firms highlight the preliminary analysis of their CUS' profiles.

19. "Month by month we analyze the characteristics of the CUS who have interacted with the company".

110. "Personal profiles determine the CUS' involvement in SI projects".

In this case, personal factors return to play a fundamental role. For instance, the level of openness and creativity become determining factors for the CUS.

19. "Our company has selected 100 CUS who interact more with the company and who are more open. We test and launch our products/services for initial testing with them".

15. "The most creative clients are those involved in the NSD".

Likewise, and more easy to identify for the respondents, is that client identification with the company is a key factor to incorporate into SI projects.

14. "The CUS who knew our brand and were feeling more identified with us, were those who brought better information to us".

18. "CUS who propose improvements feel identified with us and they are faithful to the service".

19. "CUS who are more involved in the process of developing new services are the most identified and loyal to our brand".

3.1.3.2. Frontline employees involvement

In all the companies, we have seen the key role that employees have in innovation projects. Indeed, some managers have been able to specify in which stage of the developing process the FLE had a greater importance.

14. "The employee who proposed an improvement joined a committee created for NSD. This committee meets regularly and takes the decision to continue or not with the innovation project".

15. "The seller is the one that provides CUS information to the company board".

16. "The doctor is essential because, being in direct contact with the patient, he is the one who is able to assess all the results of the new service".

17. "The doctors are the persons in charge of the service, therefore, if they see some aspect to improve they need to point it out. For that to happen, they should develop a plan and they must raise it with the NSD team".

As has been mentioned earlier, respondents have shown that FLE involvement does not have equal importance in some stages of the process compared to others.

111. "The doctor is part of the NSD team, therefore, they participate in all phases (idea generation, design, test and launch)".

14. "The sellers' proposals may be at a technical, promotional or marketing level".

17. "The decision to carry out an improvement or a new service takes a business direction, but the testing and commercialization is done with the help of certain patients (selected previously)".

3.1.3.3. Customers involvement

In addition, we have analyzed the role of the CUS in the NSD process. We have seen that companies are very interested in involving CUS into the NSD process. This is due to the concern expressed by the companies to meeting CUS needs and desires in a better way.

I4. "Through the information provided by the client, we are able to learn and generate new needs".

I12. "The CUS and the information that the CUS provide is very important to us".

I6. "Contact with the patient as a source of innovation is key to our business".

I3. "Sometimes our business concept does not coincide with the client view, so we try to involve the CUS in our decision-making".

As in the case of FLE, the respondents have expressed the importance of CUS at certain stages of the development process.

I1. "We tried to ensure that the client was included in the entire process, but where he has more influence is at the end of the process (test and launch)".

I12. "We have meetings with our CUS to test our services".

I8. "60% of our CUS never complain or do not speak. Another 30% of CUS complain directly to transmit information. And the remaining 10% of clients are proactive and get involved to improve the service. In addition, they participate in meetings within the company to generate new ideas for the service".

I9. "CUS provide ideas and are involved as generators of ideas in a natural way (without incentives) simply because they feel identified with us".

I4. "This new service grew out of the ideas transmitted by CUS".

I10. "This new service has arisen through testing we have done with our CUS".

3.1.3.4. Interaction and information integration between frontline employees and customers

After analysing all of cases, one can observe that the FLE and CUS involvement is not developed separately. In many cases, that involvement stems from the interaction between FLE and CUS. In fact, some of those respondents did not remember if the idea came from the FLE or it was the CUS who transmitted it to the FLE.

I1. "The interaction process takes place when the client speaks with the employee, he expresses his need and they begin to develop it together, in consultation with technical staff when necessary".

I5. "The improvements emerge from the close relationship that exists between our sellers and CUS. This relationship is the key to our success".

I6. "This service comes more from the daily interaction between doctor and patient than the external market trends".

I4. In many cases CUS have a good idea, but without the employees' help, this idea would not move into the company, and therefore the improvement would not be adopted".

I5. "Ideas emerge from the "feedback" which the CUS give the sales team".

I4. "The environment assists more fruitful interaction between employees and CUS. Indeed, in online environments, we have better communication with the client than offline environments".

I1. "I'm looking for all employees to be in direct contact with CUS".

I8. "When a customer or salesperson has an idea, it is included in the NSD process through meetings with the technical team and the management".

I5. "The employee brings to the client his experience, ideas and vision".

I12. "We tested the new services in our strategic points of sale, with the collaboration of our employees and CUS".

Once detected that the interaction between FLE and the CUS plays a fundamental role in innovative projects, finding out the level of integration of this information within the company becomes crucial.

I12. "Our employees support the generation of ideas from our CUS by integrating the information".

I11. "The lack of information from the patient is a barrier to developing new ideas in the service. Therefore, the role of the doctor is essential to incorporate the ideas mentioned by patients".

I6. "Cross-referencing the information from meetings between management and doctors and patient surveys, leads to generating new services or improving existing ones, thereby increasing the satisfaction of all participants".

I9. "Although we carry out market research through specialized companies, increasingly we are giving more importance to our internal database generated by the interactions between employees and CUS".

Similarly, some companies detail the route used to integrate the information flow mentioned previously.

I5. "The information flow for developing new services in our firm is CUS → Employees → General Manager".

I1. "In our company, the relevant information to innovate comes from two flows: market information and information integrated between sellers and CUS".

I8. "We have the best information in the sector because of the information coming from our clients, we cross-checked it with the commercial network, processed it, and generated an enhancement that was delivered back to sellers. This circular information flow was information about innovations to the market".

Due to this apparent overlap or interchange, observing the FLE and CUS effects in the same project was identified as a key point of this research project.

3.1.3.5. New service development success

From the in-depth interview results, we can conclude that the multidimensionality of performance is a proven fact.

I2. "Employees' involvement at the new service launch helps to expand market share, improve CUS satisfaction and decrease the development and launch service times".

I7. "The goal of incorporating doctors and patients in the service improvement process is to optimize the execution time of the service, reduce costs, and improve both patient and doctor satisfaction".

I7. "There are three results that we measure after the innovation is developed: profitability, patient and doctor satisfaction".

I10. "With this new service, we seek to improve execution time, quality and CUS satisfaction".

I12. "The CUS involvement increase of the service quality, reduce costs and improve the satisfaction of CUS and employees".

I11. "We analyse the service provision time and CUS satisfaction when a new service is launched.

Firms claim that the best result is not always achieved in all dimensions, but sometimes there may be large differences in performance components. However, it was found that it is possible to identify four performance groups: 1) innovation speed, 2) competitive advantage, 3) project efficiency, and 4) market performance.

Innovation speed

I1. "Speed is one of the results we get from the relationship with the client".

I3. "We seek improvements in our services to improve process speed".

I4. "The speed of the process and launch is a fundamental result for our company".

I5. "One of the most important results for us is the time of service development and launch. Since a faster service has a direct impact in greater CUS satisfaction".

I10. "We seek to optimize the service time with new services or improvements".

Competitive Advantage

I3. "CUS value the service treatment and attractiveness more than other aspects. But, if we reduce the time, we enhance CUS service".

I4. "The launch of new services with the CUS' help is increasing our competitive advantage".

I6. "One of the results that we measure of new services is the quality perceived by the patient".

I10. "For us, it is essential to launch new services better than the competition".

Project Efficiency

I3. "Another new service result was the reduction of costs".

I7. "This service improvement looks to reduce costs".

I8. "With innovations that reduce costs, one has to guard against decreasing the quality of service".

Market Performance

I4. "CUS involvement in new services resulted in a higher rate of repeat purchases and increased sales".

I12. "FLE increased sales performance and their own employee satisfaction".

I8. "This new service increased the market share of 30% and it is positioned as the service leader in sales in the market segment".

3.1.3.6. Degree of service innovation

It is interesting to point out that some respondents established a difference between employees and CUS depending on the degree of SI. For this reason, it is of value to show some examples reflecting that the FLE and CUS can provide a greater or lesser degree of novelty to the service and thus influence the results differently.

15. "Normally, the most innovative ideas come from the CUS".

110. A premium CUS provoked a radical service change for us. This involvement caused a significant increase in sales, improved client and employee satisfaction and helped us to implement it in other firms".

112. "When the company improves service through CUS involvement and the CUS are satisfied, the same CUS suggest more improvements for our service".

3.1.4. Conclusions of exploratory research

Among the main findings from this qualitative study that are used to define our theoretical model, we can highlight the following:

- The persons in charge of the development of new services think that a key aspect to developing successful SI is the FLE and CUS involvement. However, all agree on the importance of involving them in certain stages of the development process.
- All consulted managers recognized the importance of the relationship between FLE and CUS for the incorporation of joint in SI projects.
- Bearing in mind the difficulty that companies face when incorporating the FLE and CUS successfully in innovation projects, we have explored the factors that characterize such involvement. It has been found that strategic factors of the firm have a decisive role in FLE and CUS involvement that is in innovative culture and entrepreneurial orientation (EO) respectively. Also, it was also

revealed that the FLE and CUS who finally take part in the NSD process share common personal characteristics: personality (creativity and openness) and behaviour linked to the firm (OID).

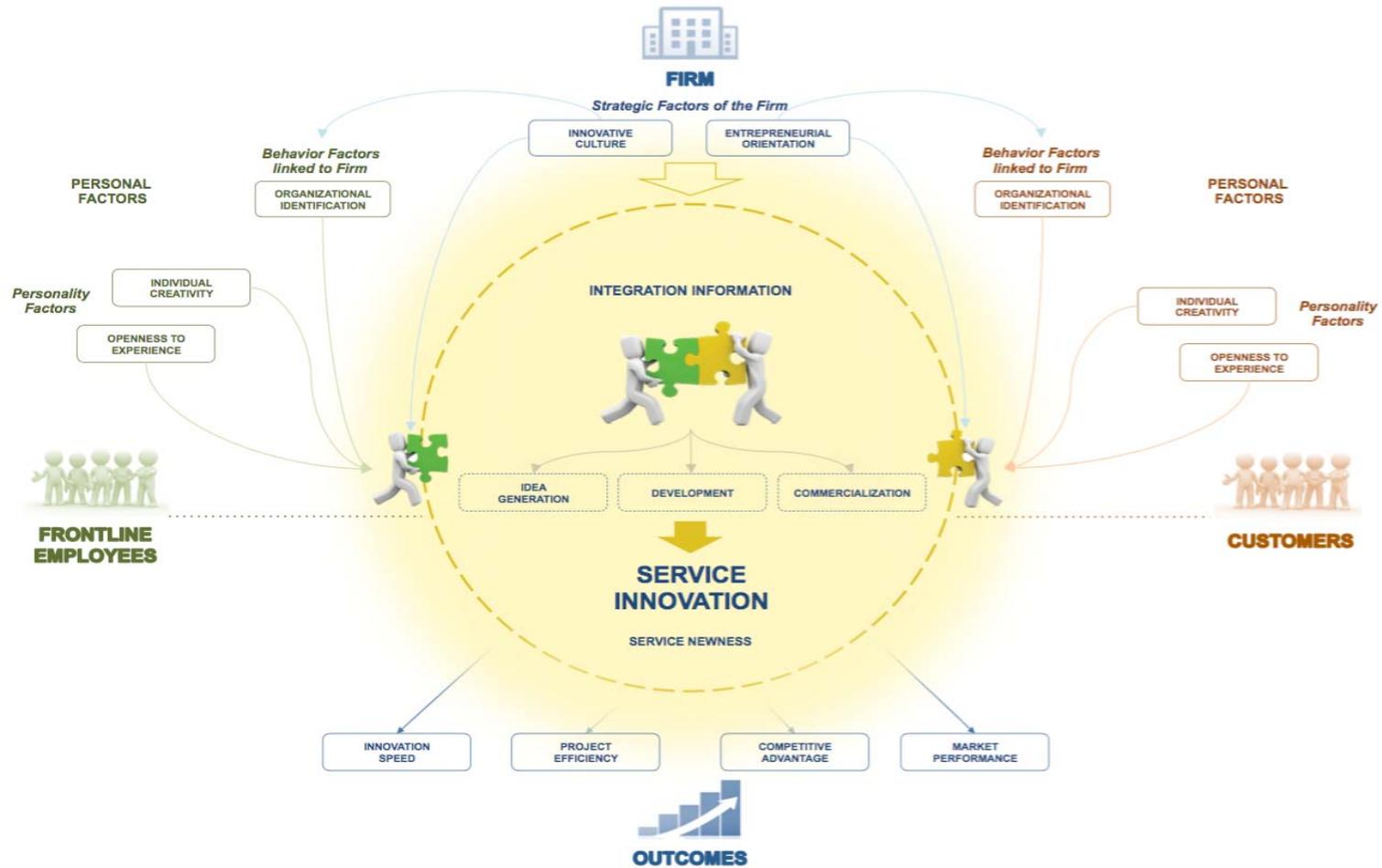
- We also found that the service improvement or the new service launch must be measured in a multidimensional way and using different success factors. Thus, innovation managers recognize that yields of the new services should be measured in a multi-dimensional way. Specifically, four dimensions of outcome (innovation speed, competitive advantage, project efficiency and market performance) can be drawn from this study, but innovation speed and competitive advantage (CUS satisfaction) are the most commonly cited.
- It is important to note the degree of SI, since some of the persons in charge of SI have shown that the FLE and CUS effects are different when the novelty is high. They also determine that CUS involvement helps to achieve a greater degree of novelty in the service.

3.2. THEORETICAL MODEL

In the Figure 3.1, we present the global theoretical model that later will be explained in three parts. These three parts correspond to the three research questions that we want to answer in this doctoral thesis.

1. Why FLE and CUS are involved in SI project?
2. Comparing the effect of FLE and CUS on SI. Is it really important to integrate them keeping in mind the degree of SI project?
3. Exploring the effects of FLE and CUS in NSD process. What role-play the stages in the involvement of FLE and CUS' performance? Is it relevant to consider the service newness on the involvement of FLE and CUS in each of the NSD stages?

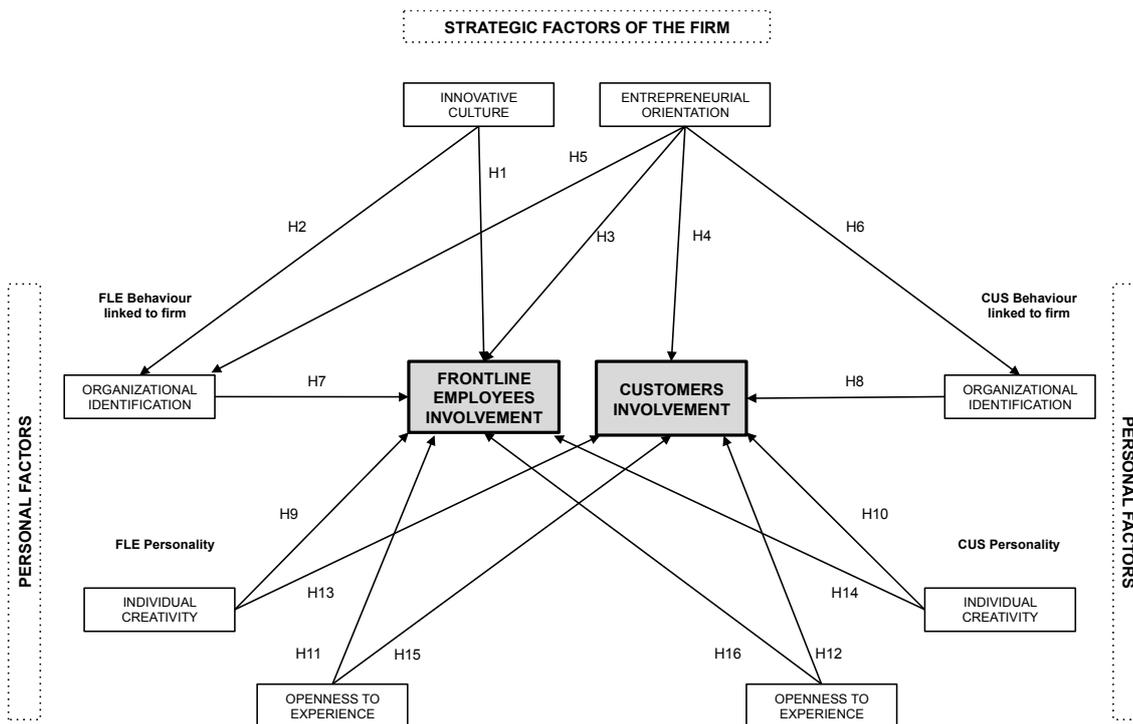
Figure 3.1. Global Theoretical Model



3.3. WHY FRONTLINE EMPLOYEES AND CUSTOMERS ARE INVOLVED IN SERVICE INNOVATION PROJECT?

3.3.1. Theoretical model: Part I

Figure 3.2. Theoretical model: Part I



3.3.2. Strategic firm factors of the firm hypotheses

Innovative Culture

Innovative culture in services captures the values and beliefs fostered by the service organization that indicate willingness and desire to innovate (Liu 2013). A positive innovative culture, in theory, facilitates a climate for NSD activity (Menor and Roth 2007). Innovative culture provides more stimulating and engaging environments for experimentation, risk, challenge, and creativity than the main organizational innovative culture (Sarros, Cooper, and Santora 2008). This implies that innovative cultures can

serve as a guideline for business members when facing challenges affecting innovation outcomes (Hult, Hurley, and Knight 2004). Therefore, employees need to perceive that the business strategy cultivates internally based capabilities in the adoption of new ideas, processes or services (Hurley and Hult 1998). Such innovative culture encourages employees to get involved in the complicated innovation projects underlying NSD for the marketplace (Gatignon and Xuereb 1997). Hence, a business strategy with a relatively low level of innovative culture and a lack of autonomy, freedom, and flexibility hinder employee creativity (Naranjo-Valencia, Jiménez-Jiménez, and Sanz-Valle 2011). For the above reasons, we propose that:

H1. Innovative culture has a positive impact on frontline employees involvement

An innovative culture is a cohesive force that leads its members to share values, social ideals, and beliefs (Pettigrew 1979). Cultivating employees' interest in and commitment to innovation may lead them to feel that the firm is full of vitality (Lau, Tse, and Zhou 2002). Thus, in a firm with a highly innovative culture, greater possibilities exist for new procedures for product development, new organizational structures and routines, and so on, which make employees feel that their firms are full of vitality (Zhou et al. 2005). An innovative culture facilitates innovations in materials, technologies, services, resources, skills, procedures, and other practices and this increases the likelihood of positive employee perceptions of firm performance (Wei et al. 2013). Zhou et al. (2005) find that a high innovation orientation increases employees' confidence in their firm's future. Hence, an innovative culture can be expected to positively affect OID of FLE with the firm. Thus, we propose the following hypothesis:

H2. Innovative culture has a positive impact on organizational identification related to frontline employees involvement

Entrepreneurial Orientation

According to resource-based theory, EO is a fundamental resource to create competitive advantage. This theory posits that discerning which appropriate resources

are necessary to compete in the market place is ultimately a matter of EO. Entrepreneurial attitudes and behaviors are key for the companies to facilitate the utilization of new and existing knowledge to discover market opportunities (Covin and Miller 2014).

EO reflects the extent to which a firm engages in innovation and risky ventures, and is the first to come up with proactive innovations to prevail over competitors (Miller 2011). It is suggested that EO can enhance the relationship between knowledge-based resources and firm performance (Wiklund and Shepherd 2003). Therefore, firms with knowledge-based resources will deeply rely on entrepreneurial activities to promote innovation (Wu, Chang, and Chen 2008). When developing EO, new ventures can create and share knowledge dispersed among individual members (Li, Huang, and Tsai 2009).

New ventures with EO may have a tendency to support new ideas and novelty, and further increase the engagement in developing new products, services, or processes (Lumpkin and Dess 1996). As managers engage in entrepreneurial activities, employees are forced to search for market opportunities and new product designs (Nonaka 1994). New ventures tend to depend on employees' knowledge and skills as key inputs in the knowledge creation process (Li, Huang, and Tsai 2009). Owing to its nature of tacitness and immobility, knowledge is not easily transferred and dispersed (Grant 1996; Hunt and Morgan 1997; Hunt and Arnett 2006). In seeking new market opportunities, entrepreneurial activities such as direct interaction, brainstorming, and informal meetings help employees to share and exchange valuable knowledge (Zhang, Lim, and Cao 2004). Through entrepreneurship, employees can understand NPD and increase their involvement in the activities of articulating tacit knowledge into substantial concepts and notions (Nonaka, Konno, and Toyama 1998; Nonaka and Takeuchi 1995; Nonaka and Toyama 2005).

Entrepreneurial firms are likely to take proactive action to obtain relevant market knowledge on CUS or competitors (Li, Huang, and Tsai 2009). Furthermore, EO facilitates the transformation of tacit knowledge embedded in CUS or clients (Nonaka, Toyama, and Nagata 2000; Nonaka and Toyama 2005). The influence of EO with CUS can make innovative ideas more usable, thereby crystallizing knowledge into new products or services (Tsai and Li 2007). The EO can integrate CUS knowledge by using documents or databases to generate new knowledge application (Li, Huang, and Tsai 2009). In sum, EO facilitates employee and CUS learning by working

autonomously to enrich their experiences and accumulate valuable know-how in an organization (Nonaka, Umemoto, and Senoo 1996).

According to the above, firms with EO are more likely to focus attention and effort towards knowledge creation process. So, we can reasonably expect the positive relationship between EO and knowledge involved from FLE and CUS. Hence, we hypothesize:

H3. Entrepreneurial orientation has a positive impact on frontline employees involvement

H4. Entrepreneurial orientation has a positive impact on customers involvement

As noted by Miller (2011) and Covin and Lumpkin (2011), a highly salient yet largely unexplored issue is whether EO is fundamentally a behavioral phenomenon or whether it represents some kind of attitudinal, philosophical, or dispositional characteristic among strategic decision makers. As Miller (2011) observed, the Covin and Slevin (1990) conceptualization — and the scale commonly used to measure it — includes behavioral and attitudinal components. Also, Anderson et al. (2014) supported recently this idea of that the EO has a behavior component on EO reconceptualization. They define EO as a second-order, firm-level construct comprised of two lower-order dimensions: entrepreneurial behaviors (encompassing innovativeness and proactiveness), and managerial attitude towards risk (risk taking). Specifically, they define managerial attitude towards risk as an inherent managerial inclination — existing at the level of the leader(s) tasked with developing and implementing firm-level strategy — favoring strategic actions that have uncertain outcomes (Miller 2011).

Furthermore, according to Ellemers, De Gilder and Haslam (2004); Avolio, Walumbwa, and Weber (2009), leaders are able to shape followers' identities, including OID. Followers' immediate leaders play an important role in their daily lives in an organization. Followers' OID has been found to be positively related to a number of leadership styles (Epitropaki and Martin 2005; Liu, Zhu, and Yang 2010; Carmeli, Schaubroeck, and Tishler 2011). In particular, transformational leadership style, which has a more entrepreneurial managerial attitude, is characterized by four features:

Individualized consideration (attending to the individual needs of the followers), intellectual stimulation (providing job meanings for followers, challenging assumptions, taking risks, and soliciting followers' ideas), inspirational motivation (articulating a vision that inspires followers), and idealized influence (providing a role model for ethical standards and instilling confidence and trust; Bass and Avolio 1994). Transformational leadership has been found to be effective in influencing followers' behavior and performance, because it enhances followers' (Kark, Shamir, and Chen 2003; Liu, Zhu, and Yang 2010; Walumbwa et al. 2008). Taking into account the traits shared between EO and OID, we could approach that this entrepreneurial managerial attitude of leaders can influence followers' behavior. Specifically, the OID of our two firms' followers: FLE (Hunter et al. 2013) and CUS (Covin, Slevin, and Heeley 2000). Thus, we can hypothesize that:

H5. Entrepreneurial orientation has a positive impact on organizational identification of frontline employees involvement

H6. Entrepreneurial orientation has a positive impact on organizational identification of customers involvement

3.3.3. Personal factors hypothesis

3.3.3.1. Behavior linked to firm factors

Organizational Identification

Understanding the impact of OID on employee performance is a central research issue. Earlier meta-analyses showed that a moderate positive relationship between OID and employee performance exists (Riketta 2005; van Knippenberg and Schie 2000). Indeed, some recent studies have found that OID is positively related to both task involvement and job performance (Walumbwa et al. 2008; Weiseke, Lam, and Von Dick 2008; He and Brown 2013). Recent research has begun to examine the impact of

OID on some specific employee performance or performance-related behaviors, such as employee creativity.

A positive effect of OID on employee creativity has been found (Hirst, van Dick, and van Knippenberg 2009; Madjar, Greenberg, and Chen 2011). This effect accords well with theoretical accounts of OI, in that employees are more likely to devote more creative effort, hence higher creativity, to their work because doing so aligns their self-interest and the interest of the organization. As noted by Hirst, van Dick, and van Knippenberg (2009), creative effort mediates the impact of employee OID on employee creativity, which suggests that one important mechanism of OI's impact on employees' creativity relates to their willingness to put more effort into organizational and task improvement. OID has a potential capacity to generate a range of positive employee and organizational outcomes, such as low turnover intention, higher participation in creative processes, employee satisfaction and well-being, and employee performance (Ashforth, Harrison, and Corley 2008; Riketta 2005). Therefore, bearing in mind what has been previously mentioned, we suggest that:

H7. Organizational identification of frontline employees involvement has a positive impact on frontline employees involvement

As we have seen above, the identification causes people to become psychologically attached to and care about the organization which motivates them to commit to the achievement of its goals, expend more voluntary effort on its behalf, and interact positively and cooperatively with organizational members. For this reason, we propose the same question for the CUS: What benefits accrue to a company when consumers identify with it?

Virtually all OID research points to the multitude of positive consequences that stem from people's self-categorization into organization-based social categories (Mael and Ashforth 1992; Scott and Lane 2000; Bergami and Bagozzi 2000). Researchers have established a strong link between identification and identifier commitment in terms of reduced turnover in the employer-employee context and greater financial and membership-related support in the context of educational and cultural institutions (Bhattacharya, Rao, and Glynn 1995; Wan-Huggins, Riordan, and Griffeth 1998). Moreover, consumers' commitment and desire to increase the welfare of the company

(Dutton, Dukerich, and Harquail 1994) are likely to manifest in their more specific efforts to support the company in its inherently risky endeavour of new product introduction. The consumption of new products gives identified consumers yet another opportunity to support the company and enables them to feel like they are bearing some of its risk. For this reason, we might consider that:

H8. Organizational identification of customers involvement has a positive impact on customers involvement

3.3.3.2. Personality factors

Individual Creativity

All innovation begins with creative ideas (Amabile 1996; Amabile et al. 1996). The development of successful services, the implementation of new processes, the design of new products and their introduction onto the market all depend on a person or a team coming up with a good idea and developing this idea beyond its initial state (Kristensson, Magnusson, and Matthing 2002). Launching a novel product, based on an original idea, in the field will increase the chances of gaining market share, thus implying a major financial advantage for a company (Sandström et al. 2008). For this reason we propose the effects between individual creativity and the participation of FLE and CUS in innovative projects.

According to the extant literature, a relationship between employees and creativity using an intrinsic motivation perspective has been demonstrated (Shalley, Zhou, and Oldham 2004). As stated in the theories section, intrinsic motivation can be defined as the degree to which an employee is excited by a work activity and is motivated to engage in it for the sake of the activity itself (Oldham and Cummings 1996). Creativity requires individuals to have a heightened interest in a certain problem and in discovering ways to solve it (Hargadon and Bechky 2006). In this context, intrinsic motivation has the important role of controlling the attention that individuals attach to the heuristic issues of creative tasks (Woodman, Sawyer, and Griffin 1993). In summary, creative behaviours increase employees' excitement in connection with their

jobs, an outcome that should result in their incorporation in innovative projects (Baer 2012). For this reason, we propose that:

H9. Individual creativity of frontline employees involvement has a positive impact on frontline employees involvement

On the basis of employee's findings, normative research has emphasized the involvement of CUS in the development of new products and services. Since the CUS using a new product or service always ends up as the adjudicator of this product, and thereby its success, the research literature has proposed CUS involvement in new product and SI (Prahalad and Ramaswamy 2000; Mahr, Lievens, and Blazevic 2014). The logic behind this reasoning is that if the CUS are the ones who can decide whether a product idea is unique or not, then he or she should be thought of as a valuable source for initiating profitable ideas. Wikström (1996) furthers that line of thought suggesting that the level of CUS creativity improves the interaction between CUS and manufacturers. Since creativity plays an important role in the front-end innovation phase, co-opting CUS competence, and involving them into the process, ought to be an additional contribution in product development projects (Hienerth 2006). However, whether or not CUS or users have really contributed with more creative ideas has not been thoroughly investigated in previous research (Kristensson, Gustafsson, and Archer 2004; Mahr and Lievens 2012; Cui and Wu 2015). Therefore, with the next hypothesis we consider if the most creative CUS are who participate in innovative projects.

H10. Individual creativity from customers involvement has a positive impact on customers involvement

Openness to experience

As we have seen in Chapter 2, some scholars have conceptualized openness as a personal-level construct that requires individuals to be receptive to divergent views, tolerant of ambiguity, and users of non-traditional thinking (Costa and McCrae 1987). Previous studies have recognized the strategic importance of the wide range of

knowledge sources for innovation (involving the linkages of CUS, suppliers, competitors, research institutions and others), not only for product or SI success (von Hippel 1988) but also for process innovation facilitation (Reichstein and Salter 2006). For example, Hurley and Hult (1998) defined innovativeness in terms of openness to new ideas as an aspect of a firm's culture, and Taggar (2002) argued for and documented a positive association between openness to experience and creativity processes, as measured by group member behaviour. This suggests that the role of external 'openness' through partners and linkages is of particular importance in service sector innovation, and that a clearer understanding of how these linkages influence innovation at different stages of the innovation process is important (Love, Roper, and Bryson 2011). This approach segments innovation into key stages and each stage involves relationships with external agents – other service providers, manufacturing firms and consumers – and with internal actors through internal team working and cross-functional working (Laursen and Salter 2006). These authors considered that internal and external aspects of openness at different stages of the innovation process, and so explore how different external links are important at different stages of innovation, and how aspects of team working vary in importance at different stages of the innovation process.

On the other hand, studies by Katila and Ahuja (2002) and Laursen and Salter (2006) have found empirical support for the existence of a curvilinear (inverse U) relationship between knowledge sourcing and innovation performance. Such a finding implies that a certain level of openness is necessary to encourage innovation — this being consistent with the basic assumption in the open innovation literature that some vibrancy of relations with employees, users, suppliers and competitors is often beneficial for achieving innovation effectiveness (Huang and Rice 2012).

Therefore, one could conclude that a higher degree of openness of our FLE and CUS will lead them to participate in innovative projects. On this basis, we hypothesize:

H11. Openness to experience of frontline employees involvement has a positive impact in frontline employees involvement

H12. Openness to experience of customers involvement has a positive impact on customers involvement

3.3.3.3. Cross-effects in individual creativity and openness to experience between frontline employees and customers

Lichtenthal and Tellefsen's study (2001) synthesizes findings from the sales, marketing, and psychology literatures to propose an expanded view of industrial buyer-seller similarity. Similarity has been examined in a large number of empirical studies across literatures in sales, marketing, and social psychology. At first glance, these studies appear to examine a wide range of similarities. However, past research indicates that business buyers may judge their degree of similarity with a salesperson in terms of observable characteristics (physical attributes and behavior) and internal characteristics (perceptions, attitudes, and values). It is possible to propose a more complete explanation of how the similarity between CUS and seller personal factors affects each of them by combining the above findings with several streams of empirical and theoretical work in psychology. This explanation draws upon a concept from psychology ("The Elaboration Likelihood Model") to propose that a business buyer will focus upon either observable or internal characteristics and these characteristics will affect the buyer's perceptions to a greater or lesser degree. It also draws upon a second concept ("The Similarity-Attraction Paradigm") to suggest how perceptions of similarity may affect a business buyer's evaluation of the salesperson, and by extension, the salesperson's performance.

Based on the aforementioned theories, Lichtenthal and Tellefsen (2001) considered the next proposals: P1. As the degree of convergence between the revealed internal characteristics of the salesperson and the internal characteristics of the buyer increases, perceived internal similarity also increases; P2. As the buyer's estimate of his/her perceived internal similarity with the salesperson increases, the buyer's attraction toward the salesperson also increases and P3. As the degree of attraction that the buyer feels toward the salesperson increases, the salesperson's performance also increases. They suggested that the similarity of internal factors could increase a buyer's willingness to trust a salesperson and follow the salesperson's guidance.

On the other hand, to justify the following hypothesis, we draw on the concept of "emotional contagion" (Chartrand and Bargh 1999; Gump and Kulik 1997; Hatfield, Caccioppo and Rapson 1992, 1994). This concept is rooted in the field of social psychology. According to Howard and Gengler (2001), emotional contagion refers to someone (hereafter the receiver) catching the emotion being experienced by another (hereafter the sender), wherein the emotion of the receiver converges with that of the

sender. Besides other fields of interpersonal interaction, the concept of emotional contagion has also been studied in the context of company employees interacting with CUS (Pugh 2001; Verbeke 1997). In general, these studies provide support for the presence of emotional contagion effects between CUS-contact employees (e.g., salespeople) and CUS. For example, Howard and Gengler (2001) found that product attitudes were positively influenced when CUS “caught” a positive emotion from the CUS-employee contact. Additional conceptual and empirical support for the phenomenon that emotions displayed by a salesperson transfer to the CUS is provided by Pugh (2001) and Verbeke (1997).

To make the mechanism driving emotional contagion more concrete, we argue that CUS will directly perceive certain emotional states of an employee that are associated with job satisfaction (Homburg and Stock 2004). As is typical in the phenomenon of emotional contagion (Pugh 2001), these emotional correlates of job satisfaction are typically not consciously controlled by the employee. As an example, the level of experienced job stress has been shown to be a negative correlate of job satisfaction (Sullivan and Bhagat 1992). Thus, a highly dissatisfied salesperson will exhibit a significant level of emotional tension that will be felt by the CUS (Singh, Goolsby, and Rhoads 1994) and affect the CUS’s satisfaction via the process of emotional contagion. This, in turn, will create cognitive tension for the CUS, thus reducing CUS satisfaction (Oshikawa 1968; Parkington and Schneider 1979; Homburg and Stock 2004). On the other hand, employees with a high level of job satisfaction will appear to the CUS more balanced and pleased with their environment. In this case, the process of emotional contagion will lead to a positive influence on the level of CUS satisfaction. In summary, Pugh’s (2001) process of emotional contagion can be described as the CUS, when exposed to the emotional displays of employees, experience corresponding changes in their own affective states.

Thus, the logic herein suggests that based on the Similarity-Attraction Paradigm, on Lichtenthal and Tellefsen (2001) research and on the emotional contagion concept, the FLE and CUS internal characteristics (individual creativity and openness) can exert an even greater influence on each other. For this, we hypothesize that:

H13. Individual creativity of frontline employees involvement has a positive impact on customers involvement

H14. Individual creativity of customers involvement has a positive impact on frontline employees involvement

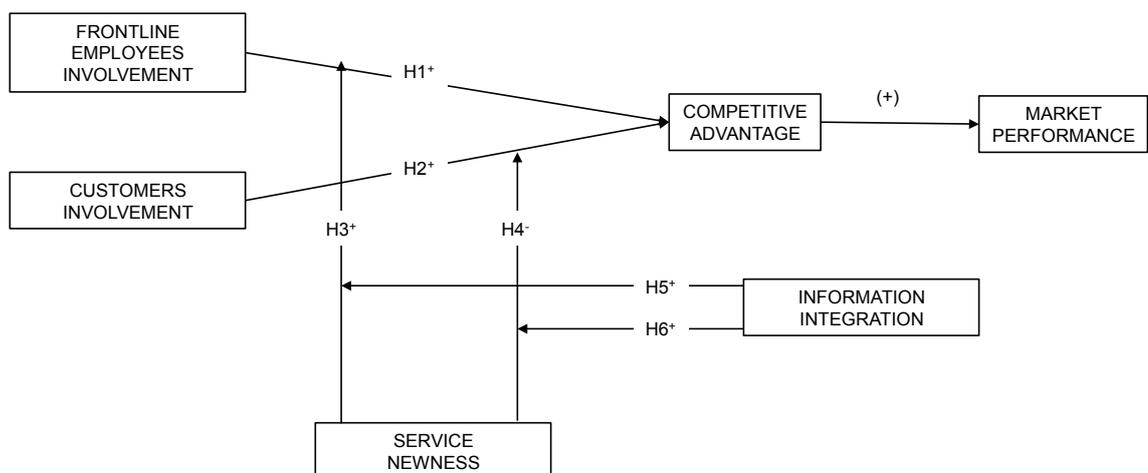
H15. Openness of frontline employees involvement has a positive impact on customers involvement

H16. Openness of customers involvement has a positive impact on frontline employees involvement

3.4. COMPARING THE EFFECT OF FRONTLINE EMPLOYEES AND CUSTOMERS ON SERVICE INNOVATION. IS IT REALLY IMPORTANT TO INTEGRATE THEM KEEPING IN MIND THE DEGREE OF SERVICE INNOVATION PROJECT?

3.4.1. Theoretical model: Part II

Figure 3.3. Theoretical model: Part II



3.4.2. Hypotheses about the relationship between the involvement of frontline employees and customers in service innovation

Frontline Employees involvement

The literature on SI also argues that in service organizations, as a logical consequence of how services are produced, delivered, and consumed, FLE interact with the firm's CUS on a regular basis. And, in this way, they are in a privileged position for collecting, filtering, and translating useful CUS information to identify uncovered market needs and anticipate future market trends (Bateson 2002; Lages and Piercy 2012; Melton and Hartline 2010, 2013; Schneider and Bowen 1984; van der Heijden et al. 2013). Cadwallader et al. (2010) suggested that FLE participation is critical to successful innovation implementation, especially in service contexts. In this respect, Sørensen, Sundbo, and Mattsson (2013, p. 1446) define service encounter-based innovation as "innovation that develops from ideas, knowledge, or practices derived (one way or another) from frontline service employees' meetings with users in the service delivery process". Thus, FLE through service encounters can proactively ask consumers about their service experience and practices (van der Heijden et al. 2013; Ye, Marinova, and Singh 2012) and obtain valuable insights from CUS preferences and from future service improvement. Similarly, FLE are, in many cases, the first to identify and repair service failures, actions that may also constitute the cornerstone of future required SIs (Santos-Vijande, González-Mieres, and López-Sánchez 2013; Jayasimha, Nargundkar, and Murugaiah 2007; van der Heijden et al. 2013). FLE thus constitute a key mechanism for accumulating experience and knowledge about CUS, as well as becoming a key source of creative ideas for steering the design of future SIs (Melton and Hartline 2010, 2013). In sum, FLE constitute an essential source of information needed to direct the design and implementation of new core and augmented services, and in this way have a key role in SI success (Santos-Vijande, López-Sánchez, and Rudd 2015).

H1. Frontline employees involvement has a positive impact on competitive advantage

Customers involvement

CUS involvement has long been considered important for successful service development (Magnusson, Matthing, and Kristensson 2003, Edvardsson et al. 2006, Hoyer et al. 2010). The CUS' involvement in SI refers to the extent to which service producers interact with current (or potential) representatives of one or more CUS at various stages of the NSD process (Alam 2006; Matthing, Sandén, and Edvardsson 2004). According to the resource dependence theory, information on CUS needs and user experiences might be viewed as resources companies depend on for successfully developing new services. From this perspective, cooperation with CUS can be seen as a bridging strategy to secure access to the critical resource of information about CUS needs (Gruner and Homburg 2000; Salomo, Steinhoff, and Trommsdorff 2003).

Despite its acknowledged importance, there has been little empirical work about the effectiveness and outcomes of interacting with CUS. Martin and Horne (1995) found that the most successful projects had a higher level of direct CUS participation than did the least successful projects. Alam (2002) establishes that CUS involvement is more important in idea generation, service design and service testing than other stages. Carbonell, Rodríguez-Escudero, and Pujari (2009) showed that rather than having a direct effect on market outcomes (competitive superiority and sales performance), CUS involvement has an indirect effect by positively affecting operational outcomes (technical quality and innovation speed). Ordanini and Parasuraman (2011) identified that CUS collaboration has a positive effect on innovation volume (idea generation) but it does not have a significant effect on innovation radicalness. Recently, Melton and Hartline (2015) supported the notion that the synergistic interactions of a complex NSD process transform the contributions of CUS, FLE and cross-functional teams to yield more innovative service products and processes.

H2. Customers involvement has a positive impact on competitive advantage

3.4.3. Hypotheses about the relationship between the involvement of frontline employees and customers in service innovation depending on the degree of service innovation

In the last several years some work in this field have analyzed the degree of novelty. In their study of innovation programs in the Italian hotel industry, Ordanini and Parasuraman (2011) found that CUS collaboration in the NSD process positively influenced innovation volume (i.e. capacity to produce new ideas), but did not produce a significant effect on innovation radicalness. Möller, Rajala, and Westerlund (2008) argue that a balanced strategy combining the competencies of client and service provider leads to more complex, more radically innovative service offerings. They argue that developers of radical SI should “acquire a comprehensive understanding not only of the reason why clients are using the service, but also of the processes and competencies they employ to render the value for themselves” (Möller, Rajala, and Westerlund 2008, p. 46). Further, they reason that collaborative service co-creation has the potential for creating the most successful new services. Gustafsson, Kristensson, and Witell (2012) and Witell et al. (2011) suggested that there is no direct or indirect effect of CUS involvement in the development stage on service innovativeness. Melton and Hartline (2015) conclude that CUS involvement in the design stage has a significant, positive, indirect effect on service innovativeness through process complexity, and CUS involvement in the development stage has no effect on service innovativeness. They suggest that developers of radically new services should emphasize CUS involvement in the design stage.

H3. A high degree of service newness increases the positive impact of FLE involvement in competitive advantage.

H4. A high degree of service newness decreases the positive impact of customers involvement in competitive advantage.

3.4.4. Hypotheses about the relationship between the involvement of frontline employees and customers in service innovation depending on the degree of service innovation and the information integration level

Developing a common understanding about the innovation project and achieving consistency between decisions made throughout the product/service development process are considered critical for the development of a quality product (Menon, Jaworski, and Kohl 1997; Barczak and Wilemon 2003). Because individuals from various functional areas often have different ideas about it (Sethi 2000), without effective information integration, these individuals generally pull the project in different directions and thereby adversely affect the quality of the new product or service. Similarly, effective information integration is expected to help in bringing functional knowledge and expertise together while important project-related decisions are made (Joshi and Sharma 2004; Troy, Hirunyawipada, and Paswan 2008).

On the other hand, the learning literature suggests that formal processes such as information integration tools are especially important for exploiting the potential of complex and tacit knowledge but not as critical for merely generating new ideas (Nonaka 1991). Moreover, prior research in product innovation has shown that information integration mediates the link between a firm's knowledge and innovation outcomes only for the depth dimension of knowledge (i.e. sophistication and complexity of knowledge) but not for the knowledge breadth dimension (i.e. variety of knowledge; De Luca and Atuahene-Gima 2007). Also, the criticality of information integration is also implied by S-D Logic because it considers knowledge renewal as the fundamental source of sustainable competitive advantage through innovation (Lusch, Vargo, and O'Brien 2007).

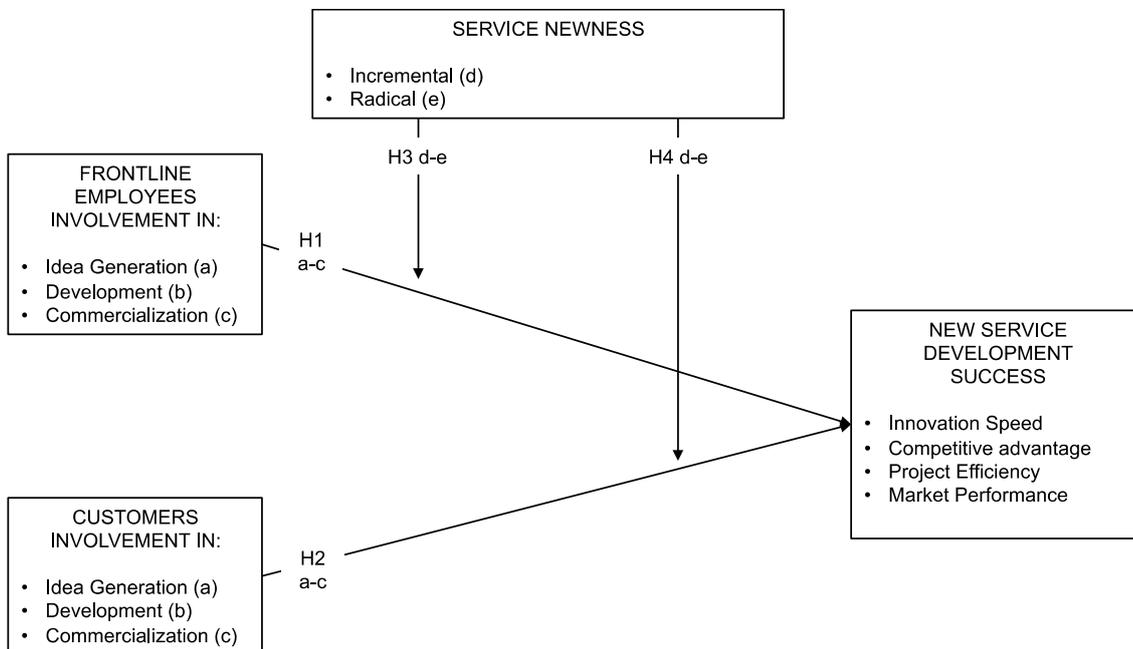
Kristensson, Matthing, and Johansson (2008) proposed as a key strategy that although participants do need some knowledge of what might be feasible, too much technical knowledge might actually inhibit individuals from producing truly innovative ideas. Hence, they suggested that a higher level of information integration for CUS co-creation in the initial stages is not appropriate. In contrast, Ordanini and Parasuraman (2011) showed that a greater use of knowledge integration in the innovation process leads to a higher level of SI radicalness. On account of the arguments presented above we propose that:

H5. The information integration reduces the negative impact that service newness has on customers involvement

3.5. EXPLORING THE EFFECTS OF FRONTLINE EMPLOYEES AND CUSTOMERS IN THE NEW SERVICE DEVELOPMENT PROCESS. WHAT ROLE PLAY THE STAGES IN THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS PERFORMANCE? IS IT RELEVANT TO CONSIDER THE SERVICE NEWNESS ON THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS IN EACH OF THE NSD STAGES?

3.5.1. Theoretical model: Part III

Figure 3.4. Theoretical model: Part III



3.5.2. Hypotheses about the relationship between the involvement of frontline employees and customers in New Service Development Success at idea generation, development and commercialization stage

As was explored in Chapter 1, several studies have also focused on SI as a process involving several phases (Alam 2002; Johne and Storey 1998; Scheuing and Johnson 1989; Sundbo 1997, 2008; Toivonen 2010) from idea to market launch. Sundbo (2008) distinguished between the idea, development and implementation phases and found that FLE are involved during all phases but not as much during the development phase. Further, Sundbo argues that it is important that the FLE are involved to some

extent during the implementation phase so that they understand and accept the service and make it a natural part of their practices. Melton and Hartline (2010) both support and contradict Sundbo's conclusions. They found that front-line employees contribute positively during the implementation phase but not during the idea phase. Further, they did not find a significant impact on outcomes when FLE were involved in planning and development activities. Scheuing and Johnson (1989), however, suggest that the involvement of FLE during the early phases is associated with positive outcomes. Ordanini and Parasuraman (2011), argue that FLE may contribute to generating ideas as well as to implementing SI. Ottenbacher, Gnoth, and Jones (2006) found that involving FLE in idea generation, planning, or design of the service was not a significant predictive factor when distinguishing successful from unsuccessful projects in a sample drawn from the German hotel industry. Cadwallader et al. (2010) argue that FLE contribute to the idea and implementation phases. Melton and Hartline (2013) demonstrated that the path from FLE involvement to service marketability was significant with a modest standardized regression coefficient and the relationship between FLE involvement and launch effectiveness was not significant in the initial model, and was dropped in the final model.

On the other hand, Carbonell, Rodríguez-Escudero, and Pujari (2009) showed that the impact of CUS involvement on new service performance is independent of the stage of the development process. Melton and Hartline (2010) demonstrate that CUS involvement in the design stage positively affects an innovation's sales performance and project efficiency through its contribution to improved marketability of the offering and preparation prior to launching the new service. And also, in the development stage positively affects an innovation's sales performance and project efficiency through its positive impact on the firm's preparation to launch the new service.

In the absence of consensus in the literature about the effect of the FLE and CUS involved in the NSD process, this research study aims to shed light on comparing the effects of FLE and CUS involved in each stage of the NSD process on multidimensional performance. Furthermore, some studies have pointed to possible future lines of research to ascertain whether the involvement of these stakeholders may vary depending on the degree of SI (Karlsson and Skálén 2015).

Finally, based on three of the Johnson et al. (2000) stages of development as previously applied by Sundbo (2008) and Melton and Hartline (2010, 2013, 2015), this study will focus on the most commonly explored phases in the literature: idea

generation, development and commercialization in order to explore the impact of FLE and CUS involved on a multidimensional performance in each stage of the NSD process. So, we suggest that:

H1a-c: The impact of frontline employees involvement on new service development success in a) innovation speed; b) project efficiency; c) competitive advantage and d) market performance, depends on the new service development stage (idea generation, development and commercialization).

H2a-c: The impact of customers involvement on new service development success in a) innovation speed; b) project efficiency; c) competitive advantage and d) market performance, depends on the new service development stage (idea generation, development and commercialization).

3.5.3. Hypotheses about the relationship between the involvement of frontline employees and customers in new service development success at idea generation, development and commercialization stage depending on the degree of service innovation

In this section, we use the same justification of service newness exposed in the previous model (part II). For this reason, we enunciate the following hypothesis directly.

H3d-e: The impact of frontline employees involvement in each stage of NSD process (idea generation, development and commercialization) depends on the degree of service newness (incremental and radical).

H4d-e: The impact of customers involvement on each stage of NSD process (idea generation, development and commercialization) depends on the degree of service newness (incremental and radical).

CHAPTER 4

METHODOLOGY

In this chapter we describe the research methodology carried out to test the hypotheses of the proposed models. Firstly, we justify the selection of the study population. Following that, we explain the development of the measurement scales used. Under the third heading, we detail the design of the online survey on the web platform. In the fourth section, we break down the information gathering process. Finally, we characterize the innovative firms from the sample obtained.

4.1. POPULATION

According Hipp and Grupp (2005), one of the great challenges of SI and NSD process research is to establish empirical generalizations in the company's strategies so as to develop new services. We have adopted a methodology that enables our empirical analysis results to be generalized in this work. Therefore, we have designed a multi-sectorial framework by selecting a number of sectors and subsectors where SI is common in Spain (see Table 4.1). Hence, the population analysed in this doctoral thesis are innovative Spanish services companies.

After defining the sectors and subsectors, we had the task of defining the company size. Most empirical studies published in this area over the years have been biased towards large companies, leaving aside the study of innovation strategy in SMEs. However, it is necessary to keep in mind that SMEs are not small versions of large companies, but they have a unique problematic, specific internal operations and very different resources (Berends et al. 2014). Also, we must not forget that SMEs represent 99% of all enterprises in the EU. They employ two thirds of the population (Moreno-Moya, Munuera-Alemán, and García-PérezdeLema 2011). They are a key driver for economic growth and innovation (O'Regan, Ghobadian, and Sims 2006) and they have been increasing their innovation activity. On the other hand, it should be noted that service research in this environment is still low compared with the large number of innovation studies that have been undertaken in large companies. Given these conditions we have decided to include companies of all sizes in my study.

Table 4.1. The 2014 COTEC Report on Technology and Innovation in Spain

		INNOVATIVENESS		NUMBER OF EMPLOYEES
		% of innovativeness		< 250
NAICS		2013	2010-2012	2013
54	Professional, Scientific, and Technical Services	71%	68%	✓
56	Administrative and Support and Waste Management and Remediation Services	48%	42%	✓
51	Information Industry	42%	29%	
81	Other Services (except Public Administration)	33%	22%	✓
52	Finance and Insurance	31%	25%	
61	Educational Services	20%	16%	
22	Utilities	18%	18%	✓
48-49	Transportation and Warehousing	15%	9%	✓
62	Health Care and Social Assistance	14%	12%	✓
44-45	Retail and Whole Trade	14%	10%	✓
71	Arts, Entertainment, and Recreation	10%	15%	✓
23	Construction	10%	7%	✓
92	Public Administration	7%	6%	✓
72	Accommodation and Food Services	7%	5%	✓

In this Table 4.1, the most innovative sectors can be observed according to the 2014 COTEC Report on Technology and Innovation in Spain. This table shows the increase of innovativeness in 2013 in almost of the sectors. Only the “Utilities” sector stays equal comparing the innovativeness percentage in 2013 with the average of 2010-2012. In the same line, “Arts, Entertainment, and Recreation” sector reduces its innovativeness percentage five points in 2013 with regard to the average of last two years. Also, it can be seen that the most innovative sectors are “Professional, Scientific, and Technical Services” (71%), “Administrative and Support and Waste Management and Remediation Services” (48%) and “Information Industry” (42%).

After selecting the study population, we turned to the Kompass directory for a list of innovative companies. In addition, we have used an updated and purified database, originating from various studies by the research team from which this thesis originated (Rodríguez, Carbonell, and Munuera-Alemán 2010; Carbonell, Rodríguez-Escudero, and Pujari 2012; Molina-Castillo et al. 2013; Moreno-Moya and Munuera-Alemán 2015).

4.2. QUESTIONNAIRE AND MEASURED SCALES

The questionnaire used in this study has followed a rigorous process of refinement and validation. First, as a result of the academic literature review and the qualitative study conducted, we drew up a draft survey with different scales that allowed each of the key concepts of my model to be measured. The draft was then pretested with 15 academics and 12 managers in order to improve the understanding and use of the scales applied. The reviews were conducted sequentially, so they were already incorporated as improvements or corrections in the subsequent survey drafts.

The full version of the questionnaire can be found in appendix (Annex IV). Most scores were measured on a seven-point Likert scale (1 is "disagree" and 7 "agree"). Ordinal scale, nominal scale and open questions were also included. All the scales used in this doctoral thesis were taken from works of recognized prestige. Also, these have been used often to define concepts in this field of research. Therefore, these scales are appropriate and justified in the literature. For clarity, the questionnaire was grouped into 5 blocks: antecedents, involvement, project results, control variables and general aspects related to the company and the respondent. The main features of each block detailing scales and academic origin are outlined below.

4.2.1. Involvement antecedents in service innovation projects

Drawing from both the literature review and exploratory analysis, this study concludes that there are a number of antecedents that are key to the involvement of FLE and CUS in new service projects. The decision was taken to analyse their effect taking into consideration two different groups: strategic factors of the firm and personal factors. In order to measure the strategic factors of the firm, we used the seven-point Likert scale developed by Naman and Slevin (1993) and Menor and Roth (2007) for the EO and innovative culture respectively. The personal factors have been measured in the same way in FLE and CUS. Specifically, personality factors have been adapted from Weiss, Hoegl, and Gibbert (2011) for the individual creativity factor and according to De Jong and Kemp (2003) measurement for the openness factor. In relation to measuring the behaviours linked to enterprise, these are based on OID as measured by Bergami and Bagozzi (2000) scale (Table 4.2).

Table 4.2. Involvement antecedents in service innovation projects

VARIABLES	ITEMS	SOURCE	SCALE
Enterprise Factors			
Entrepreneurship orientation	The trend to make suitable strategic planning activities	Naman and Slevin, (1993)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The ability to identify customers needs and desires		
	The emphasis on making our business vision a fact		
	The ability to identify new business opportunities		
Innovative culture	Our firm encourages entrepreneurial efforts and is accepting of risk-taking efforts	Menor and Roth, (2007)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The glue that holds our organization together is a commitment to innovation and new service development		
	Supervisors generally encourage people who work with them to exchange opinions and ideas		
	The rewards are employed in new service development projects as a means of recognizing employee effort		
Personal factors of FLE			
<i>Behaviours linked to enterprise</i>			
Organizational identification	Employees who participated in the new service development process they identified with the organization	Bergami and Bagozzi, (2000)	Seven-point Likert (1 is "disagree" and 7 "deal")
<i>Personality factors</i>			
Individual creativity	They had a fresh approach to problems	Adopted by Weiss, Hoegl, and Gibbert (2011)	Seven-point Likert (1 is "disagree" and 7 "deal")
	They came up with new and practical ideas		
	They developed creative solutions to problems		
Openness to experience	The employees had frequent contacts with suppliers of our organization	De Jong and Kemp (2003)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The employees had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.)		
	The employees shared ideas with people outside the organization (friends, family, etc.)		
Personal factors of CUS			
<i>Behaviours linked to enterprise</i>			
Organizational identification	Customers who participated in the new service development process they identified with the organization	Bergami and Bagozzi (2000)	Seven-point Likert (1 is "disagree" and 7 "deal")
<i>Personality factors</i>			
Individual creativity	They had a fresh approach to problems	Adopted by Weiss, Hoegl, and Gibbert (2011)	Seven-point Likert (1 is "disagree" and 7 "deal")
	They came up with new and practical ideas		
	They developed creative solutions to problems		
Openness to experience	The customers had frequent contacts with suppliers of our organization	De Jong and Kemp (2003)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The customers had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.)		
	The customers shared ideas with people outside the organization (friends, family, etc.)		

4.2.2. Involvement and integration in service innovation projects

In the exploratory study, it was identified that the FLE and CUS' involvement in a SI project is key to obtaining better service results. In addition, both through the literature review and later in the in-depth interviews, the importance of integrating the information between these two stakeholders became evident. In order to achieve this, we have measured the involvement in the same way for FLE and for CUS. To this end an adapted version of the scale used by Carbonell, Rodríguez-Escudero, and Pujari (2009) was employed. In order to measure the information integration between FLE and CUS, we have applied the scale that Sethi (2000) uses to measure the integration of information in development teams (Table 4.3).

Table 4.3. Involvement and Integration in service innovation projects

VARIABLES	ITEMS	SOURCE	SCALE
Involvement			
Frontline employees involvement	The frequency of the meetings with employees was high	Adopted by Carbonell, Rodríguez-Escudero, and Pujari (2009)	Seven-point Likert (1 is "disagree" and 7 "deal")
	There were extensive consultations with employees		
	Specific employees were invited to join the project as team members		
	The implication of employees was high		
Customers involvement	The frequency of the meetings with customers was high	Adopted by Carbonell, Rodríguez-Escudero and Pujari (2009)	
	There were extensive consultations with customers		
	Specific customers were invited to join the project as team members		
	The implication of customers was high		
<i>*Also, these scales were used to test the involvement in each NSD stage.</i>			
Information integration			
Information integration between frontline employees and customers	Members freely shared their information and perspectives with one another	Sethi (2000)	Seven-point Likert (1 is "disagree" and 7 "deal")
	When making important project-related decisions, members paid great attention to the information and perspectives of members from other departments		
	Members freely challenged the assumptions underlying one another's ideas and perspectives		

4.2.3. Outcomes of service innovation projects

As previously discussed and in line with the most recent literature on NSD, one can evidence that the outcome of a new service project is a multidimensional concept. This concept should reflect as development operational efficiency, as service competitiveness achieved in the market (De Brentani 1989 and 1991; Tatikonda and Montoya-Weiss 2001; Carbonell, Rodríguez-Escudero, and Pujari 2009; Melton and

Hartline 2010). Thus, a distinction is drawn in this study between operating results and market results. Operating results measure the internal performance of the company during the NSD (Tatikonda and Montoya-Weiss 2001). We have grouped the operating results in four categories: innovation speed, project efficiency, competitive advantage and its service newness. Regarding market outcomes, they measure the performance from an external point of view, so they take into account variables such as sales and profits (Tatikonda and Montoya-Weiss 2001).

Therefore for measuring operating results to market outcomes a 7-point Likert scale with items adapted from works such as Cheng and Krumwiede (2012), Carbonell, Rodríguez-Escudero, and Pujari (2009), De Brentani (1989) and Melton and Hartline (2010) (Table 4.4) was used.

Table 4.4. Outcomes of service innovation projects

VARIABLES	ITEMS	SOURCE	SCALE
Service newness			
Service newness	The new service were totally new to the market	Cheng and Krumwiede (2012)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The new service offered new features versus competitive services		
Internal outcomes			
Innovation speed	Developed and launched faster than major competitors	Carbonell, Rodríguez-Escudero, and Pujari (2009)	Seven-point Likert (1 is "disagree" and 7 "deal")
	Completed in less time than what was considered normal for industry		
	Launched ahead of the original schedule developed		
Project efficiency	It had less than planned new service development project costs	Melton and Hartline (2010)	Seven-point Likert (1 is "disagree" and 7 "deal")
	It had less than planned concept to service launch time		
Competitive advantage	Satisfies clearly identified customers need	De Brentani (1989)	Seven-point Likert (1 is "disagree" and 7 "deal")
	Solves important customers problem		
	It fulfilled the quality expectations		
	Our customers were very satisfied with this service		
	It generated an important competitive advantage for our organization		
External outcomes			
Financial performance	The new service exceed sales objectives	Carbonell, Rodríguez-Escudero, and Pujari (2009)	Seven-point Likert (1 is "disagree" and 7 "deal")
	The new service exceed sales growth objectives		
	The new service exceed profit margin objectives		
	The new service exceed profitability objectives		

4.2.4. Control variables

To check the reliability and robustness of our analysis, three control variables are introduced. These are variables that are used to discount the significant effects found in the model contrast, which could be attributed to the missing variables effect, and they influence positively on firm outcomes. The control variables used in this thesis are differentiation; effort expended during the NSD process; knowledge of the new service project; and department participation in the SI project.

Although one of the main objectives of this research is to demonstrate the importance of both the involvement of FLE and of CUS involvement in SI projects, we cannot ignore the other activities carried out during the development process. In fact, each stage is typically more costly and difficult than the previous one.

Moreover, we have avoided the effect of lack of awareness about the service and stakeholder involvement during the different stages of the new service process, asking about the knowledge of the new service project and the departments that have participated (Table 4.5).

Table 4.5. Control variables in service innovation projects

VARIABLES	ITEMS	SOURCE	SCALE
Market factors			
Differentiation	Our market is characterised by intense price competition	De Jong and Kemp (2003)	Seven-point Likert (1 is "disagree" and 7 "deal")
	Our market is characterised by services that other firms can hardly imitate		
	In our market customers are insensitive to small price increases		
	Firms in our industry deliver specialised products and services		
	In our market every company attempt to differentiate itself by offering unique services		
NSD stages			
New Service Development process	Idea generation	Based on own resource	Seven-point Likert (1 is "disagree" and 7 "deal")
	Design/Development		
	Test		
	Launch		
Service project knowledge			
Knowledge of new service project	This service	Based on own resource	Seven-point Likert (1 is "disagree" and 7 "deal")
	The employees who participated in the new service development process		
	The customers who participated in the new service development process		
	The new service development process		

Table 4.5. Control variables in service innovation projects (continuation)

VARIABLES	ITEMS	SOURCE	SCALE
Departments involvements in new service development process			
Departments	I+D	Based on own resource	Nominal Scale and open questions
	Marketing		
	Administration/Finance		
	Human resources		
	Production		
	General management		
	Purchase		
	Sales		
	Others		

4.2.5. General aspects related to the company and the respondent

In the final section of the questionnaire, we asked the respondent about general issues related to the company and his/her role in it (Table 4.6).

Table 4.6. General aspects

Industrial sector
Number of employees at December 31st
Sales in euros millions of your company in 2013
Sales amount in your company corresponds to consumer services and industrial services
New services launched in the last 3 years
The percentage of services marketed in the last 3 years that they are still on the market
Respondent position in the organization
Years that respondent has been working on this type of activity

4.3. WEB PLATFORM

An online questionnaire was used for the data collection. There are numerous recent studies that have opted for this method (Herm 2013; Soukhoroukova, Spann, and Skiera 2012) due to it having many advantages such as low cost and rapid response potential. Additionally, it was deemed appropriate due to the success with this type of questionnaire amongst the members of the international research group with which we are affiliated and the existence of its own website (<http://www.imasdmasmk.es>). See

Figure 4.1. In addition, this web platform has served as a stand for numerous previous studies (Carbonell, Rodriguez-Escudero, and Pujari 2012; Molina, Munuera-Alemán, and Calantone 2011; Pemartín 2012 and Moreno-Moya and Munuera-Alemán 2015).

Figure 4.1. “imasdmasmk” homepage



For updating the website and for programming the questionnaire delivery we had the collaboration of “Irony Creativos”, a specialist company in corporate web design. A tab labelled “Current studies” was available on all screens of the website. This tab allows access to the online questionnaire, offering an estimate of the time it would take to complete. After completing the design and programming, numerous tests were conducted in order to verify that the web browsing and questionnaire completion process did not generate errors and the data was recorded correctly.

In order to begin the questionnaire, the respondent was required to provide an email and password. Although aware that this request could generate reluctance among managers, it was decided to incorporate this in an attempt to reduce uncertainty about the identity of the respondent and ensure that the same person could not complete the survey more than once. Also, this decision offered the advantage that the responses

would be recorded at the end of each of the sections in which the questionnaire was divided. Therefore, if there was any error, computer problem or connection glitch, the respondent could resume the survey from the point where his response was interrupted.

On the first screen of the questionnaire the name of who the questionnaire was addressed to was highlighted. Furthermore, in case it was not the right person who was due to respond, a request to redirect it to the appropriate person was included. In the same way, it was also stated that there were no right or wrong answers and that the responses would be treated confidentially and globally.

To move from one section to the next it was necessary to answer all questions. The application generated a banner with the boxes unchecked if the respondent wanted to move from an incomplete screen to the following one. In addition, when the questionnaire was finished, the application sent a confirmation by e-mail to the respondent along with a note thanking them for their collaboration and declaring a commitment to sending a gift and an executive report with the main study results. The idea behind this gift, which consisted of choosing a book from seven different themes related to the study (see Annex V), was to increase respondent motivation to complete the survey fully and strengthen the bond with the research group.

Figure 4.2. International research group



4.4. INFORMATION GATHERING PROCESS

In order to contact all the companies that made up our survey population, an email (see Annex III) a personalized email was sent to named recipients. This email detailed, among other things, who was conducting the study, the aim of the research and the intended target audience. The email made it clear that the questionnaire should be answered by a specific job profile within the company. To that end, the following text was included: "THIS SURVEY IS INTENDED FOR THE PERSON IN CHARGE OF DEVELOPING NEW SERVICES. PLEASE, IF THAT IS NOT YOU, COULD YOU KINDLY REDIRECT TO THE APPROPRIATE PERSON. THANK YOU". Similarly, it made clear that the data collecting process and the data processing itself were confidential and was consistent with the legal requirements of the Organic Data Protection Act (1999). The subject and sender were also made clear in the email headings.

Data collection began on 1 May 2014. After a week the responses dried up, so a new phase began which involved making contact with the businesses to remind them of the aims of the research and to again invite their collaboration. After the second wave, a process of telephone contact commenced with the selected companies. As demonstrated by numerous previous studies, this is considered an essential activity to improve response rates (Larson and Chow 2003; Molina-Castillo, 2006, Moreno-Moya and Munuera-Alemán 2015). The research also benefitted from collaboration with a specialized market research firm (Intercampo SA) that my team had worked with previously. The purpose of these calls was to confirm receipt of the email and motivate the recipient to filling out the online survey. These calls were also used to offer to answer any questions they might have. At the same time, this allowed to the possibility of updating and refining the database. This task was coordinated daily with the questionnaires received so any errors could be corrected in the calls. The process of first contact by telephone lasted for two weeks and then a new wave of emails was posted. When there was a drop in the responses, the companies were contacted with reminders combined with phone calls. After this process, the returned e-mails percentage because the address was wrong, was 25.3%. Of the remaining 2,714 firms, 18% did not comply with the requirements that were requested (see Table 4.7). Thus, the final population was 2,206 firms. Finally on 30 July 2014, after three months of intense effort and dedication almost exclusively dedicated to this data collection, this part of the process was deemed complete. You can see the data sheet of the information gathering process in Table 4.7.

Table 4.7. Data sheet of the empirical research

INITIAL POPULATION UNIVERSE	3,609 innovative firms
WRONG RETURNED E-MAILS (%)	25.3%
POPULATION AFTER WRONG E-MAILS	2,714 innovative firms
DID NOT COMPLY WITH THE REQUIREMENTS (%)	18.7%
SCOPE	Spanish firms
FINAL POPULATION UNIVERSE	2,206 innovative firms
SAMPLING PROCEDURE	Selection of the all universe population to send the questionnaire by email
SAMPLE SIZE	231 valid surveys
DATE OF WORK RESEARCH FIELD	From the 1th of May to the 30th of July of 2014
KIND OF INFORMATION-GATHERING	Online questionnaire

Of the 3,609 companies contacted, the final number of responses received was 231. Thus, the response rate of this study is 10.47%. This rate is consistent with, and higher than, the response rate obtained by Melton and Hartline (2010; 2013; 2015) in the unique study that measured FLE and CUS involvement in the same SI project (4.2%).

In this regard, it should be noted that data collection from companies is a challenging task because managers are often resistant to providing their assessments about the business or about management. It is a task made even more difficult by the climate of economic crisis in which we currently operate, causing many potential target companies to close or go into receivership. Additionally, despite the many advantages that innovation provides at company level, budget reductions have cut back allocations for these activities.

4.5. SAMPLE CHARACTERISTICS

In order to better understand the respondent companies' characteristics, a descriptive analysis of them was undertaken before embarking on the model empirical test.

According to North American Industry Classification System (NAICS), the composition of the sample can be seen in Table 4.8. A large group of companies belongs to the "Professional, Scientific, and Technical Services" (27.7%) sector. This group includes three types of activities related to research and development: basic research, applied research and experimental development. Activities performed include: legal advice and

representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services. “Manufacturing sector” accounts for 19%. This sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is also considered manufacturing. A further, 9.1% of companies in the study can be classified as Information. The “Information” sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data. 7.4% of the companies belong to the “Administrative and Support and Waste Management and Remediation Services” sector that comprise establishments performing routine support activities for the day-to-day operations of other organizations. Their activities include: office administration, hiring and placement of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services. “Finance and Insurance” yield 6.5%. The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions. A further 5.6% can be grouped as “Health Care and Social Assistance”. This sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. Trained professionals deliver the services provided by establishments in this sector. All industries in the sector share this commonality of process, namely, labour inputs of health practitioners or social workers with the requisite expertise. Other major percentages are those relating to “Educational Services” (3.9%), “Transportation and Warehousing” (3.5%), “Retail” and “Wholesale Trade” (2.2% and 3.5% respectively). Undoubtedly, this range of sectors enriches the sample obtained and allows generalizable results. It is important to remember that the intention of the project is to find regularities in FLE and CUS involvement in NSD projects, meaning that the diversity of sectors, products, companies and people will contribute to the sample quality in the current study.

Table 4.8. Sample sectorial distribution (NAICS)

NAICS		POPULATION		SAMPLE		RESPONSE RATE	INNOVATIVENESS MARKET	NUMBER OF EMPLOYEES
		N	% of Total	N	% of Total		% of Innovation	% of Companies with <250
11	Agriculture, Forestry, Fishing and Hunting	32	1.4%	5	2.2%	15.6%	8.36	100.0%
21	Mining, Quarrying, and Oil and Gas Extraction	4	0.2%	1	0.4%	25.0%	14.26	100.0%
22	Utilities	24	1.1%	2	0.9%	8.3%	29.43	72.0%
23	Construction	62	2.8%	5	2.2%	8.1%	6.71	91.4%
31-33	Manufacturing	634	28.6%	44	19.0%	6.9%	28.55	87.2%
42	Wholesale Trade	149	6.7%	8	3.5%	8.7%	9.84	95.3%
44-45	Retail Trade			5	2.2%		9.84	95.3%
48-49	Transportation and Warehousing	64	2.9%	8	3.5%	12.5%	8.77	75.7%
51	Information	193	8.7%	21	9.1%	10.9%	41.81	90.4%
52	Finance and Insurance	118	5.3%	15	6.5%	12.7%	25.10	61.5%
54	Professional, Scientific, and Technical Services	501	22.6%	64	27.7%	12.8%	67.69	94.4%
56	Administrative and Support and Waste Management and Remediation Services	124	5.6%	17	7.4%	13.7%	6.46	81.3%
61	Educational Services	69	3.1%	9	3.9%	13.0%	22.17	91.5%
62	Health Care and Social Assistance	109	4.9%	13	5.6%	11.9%	11.17	81.6%
71	Arts, Entertainment, and Recreation	38	1.7%	3	1.3%	7.9%	14.77	96.2%
72	Accommodation and Food Services	64	2.9%	3	1.3%	4.7%	5.12	94.6%
81	Other Services (except Public Administration)	34	1.5%	3	1.3%	23.5%	17.52	84.8%
92	Public Administration			5	2.2%		17.52	84.8%
	TOTAL	2,219		231		10.4%		89.7%

To rank companies according to their size, the recommendation of the European Commission 2003/361/EC (6 May 2003), which updates the definition of micro, small and medium enterprises, was employed. According to this Directive, micro, small and medium enterprises are defined in terms of their employees and their turnover or annual balance sheet. Based on these criteria, a medium-sized enterprise is defined as an enterprise, which employs fewer than 250 employees and whose annual turnover does not exceed EUR 50 million or an annual balance sheet not exceeding EUR 43 million. A small business employs fewer than 50 people and whose annual turnover or annual balance sheet does not exceeding EUR 10 million. Finally, a micro-enterprise

employs fewer than 10 people and has an annual turnover or annual balance sheet total not exceeding EUR 2 million.

Using the number of employees criterion, and as we can see in Table 4.9, 46% of the firms have fewer than 50 employees, so they can be considered small businesses. On the other hand, 32% were medium enterprises (employing under 250 employees) and the remaining 22% are large companies (with more than 250 employees). Thus, we can say that most of the companies are distributed broadly according to the number of employees.

Table 4.9. Sample distribution based on number of employees

NUMBER OF EMPLOYEES	PERCENTAGE
< 10	18%
10-49	28%
50-249	32%
>250	22%
TOTAL	100%
MEAN	2,478

Regarding the sales figures (Table 4.10), 44% of the sample has a sales volume under EUR 10 million, so they would be considered small businesses; while 31% would be medium businesses (sales volumes are contained between EUR 10 and 50 million) and 20% are large companies (with sales in excess of EUR 50 million). These characteristics are similar to recent findings in studies into the new services development field undertaken in Spain by Carbonell, Rodríguez-Escudero, and Pujari (2009).

Table 4.10. Sample distribution based on sales figures

SALES IN EUROS (x 10 ⁶)	PERCENTAGE
< 10	44%
10-50	31%
>50	20%
No answer	5%
TOTAL	100%
MEAN	125.80

If we focus on service industry type selected by respondents (Table 4.11), you can see that 61% are consumer goods, while 39% are industrial goods. The results obtained are consistent with the sectors under investigation and the intangible nature itself of services as distinct from manufactured industrial products.

Table 4.11. Sample distribution based on industry type

INDUSTRY TYPE	PERCENTAGE
Consumer	61%
Industrial	39%

To define the sample, the firm's experience in SI activities was also taken into account. Companies were asked about the number of services launched during the past three years and the percentage of them which are still on the market. The average number of new services launched in the last three years is 5.9 and 78.1% of these still remain on the market (Table 4.12). This shows the importance and quality of the sample, since it is made up of companies with extensive experience in this type of activity which have developed successful services that have survived in the market.

Table 4.12. Sample distribution based on innovative activity company

INNOVATIVENESS	MEAN
New services launched in the last 3 years	5,9
Percentage of services marketed in the last 3 years that they are still on the market	78,1%

Table 4.13 indicates the results obtained using the respondent position criteria in the company of the person who answered the questionnaire. The largest group was Presidents, Owners and General Directors (48%). This shows that the strategic decision to carry out a SI project based on co-creation depends on general direction. It is also important to point out that the Marketing Department (20%) is essential to implement successfully the SI project with the key roles of FLE and CUS.

Table 4.13. Sample distribution based on the respondent position in the firm

RESPONDENT POSITION	PERCENTAGE
President, Owner and General Director	48
Marketing/Commercial Manager	20
R&D Manager	11
Production/Operation Manager	9
Other	12

As can be noted from Table 4.14, the people in charge of developing new services are usually people with extensive experience in this field and that is why they benefit from great credibility and they receive the support of the different staff groups in the firms.

Table 4.14. Sample distribution based on the experience in these types of activities

Experience (years)	MEAN
Experience in the activity	12

In addition, as mentioned above and following the procedure used by Shenhar et al. (2002), we have consulted the appropriate key informants and different key questions were posed. Respondents were asked about their knowledge of the service (on a scale of 1-7, with 1 being low knowledge and 7 high knowledge) to obtain a value of 6.01. Also, we asked about the knowledge of the employees who participated in the NSD process, which gave a value of 5.76, and the knowledge of the CUS came out at 4.97. Finally, on asking about the knowledge of NSD process, the result obtained was 5.64. These data allow us to conclude the procedure was appropriate to communicate with the key informants and that they were familiar with the new services studied, the FLE and CUS involvement, and the NSD process.

CHAPTER 5

FINDINGS AND EMPIRICAL

RESULTS

This chapter provides the main results of the empirical study of the set of innovative firms described in the methodology chapter. The chapter has been divided into three sections, which correspond to the three research questions of this thesis. In each of the sections, we analyze the measuring scales, we bring together several considerations in relation to the common method of bias and we test the hypothesis of the model proposed through a path analysis and hierarchical regressions.

5.1. PART I: WHAT ARE THE FACTORS THAT DETERMINE THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS IN SERVICE INNOVATION?

5.1.1. Analysis of the measuring scales

To carry out the analysis of the measuring scales, firstly we have calculated the descriptive statistics (mean and standard deviation) of the items of all the scales. Next, we conducted an exploratory factor analysis and a confirmatory factor analysis using AMOS 21.

5.1.1.1. Descriptive analysis of the variables

Table 5.1 shows descriptive statistics (mean and standard deviation) of all the items that form the involvement of FLE and CUS in SI projects. It can be seen that the values of the FLE involvement are high, especially the FLE implication item (5.44 out of 7) and also the frequency of the meetings with employees item (5.43 out of 7). This means that those managers in charge of NSD demonstrate, according to their own estimation, a high level of FLE involvement in SI projects. In regards to the CUS involvement, the averages are not as high as FLE. Even so, all of its dimensions are very close to 4 out of 7, even the frequency of the meetings with CUS was high (4.20 out of 7).

Table 5.1. Descriptive statistics of the dependent variables items

VARIABLES	ITEMS		MEAN (SD)
	Involvement		
Frontline employees involvement	FLE1	The frequency of the meetings with employees was high	5.43 (1.30)
	FLE2	There were extensive consultations with employees	5.00 (1.36)
	FLE3	Specific employees were invited to join the project as team members	5.16 (1.40)
	FLE4	The implication of employees was high	5.44 (1.39)
Customers involvement	CUS1	The frequency of the meetings with customers was high	4.20 (1.58)
	CUS2	There were extensive consultations with customers	3.77 (1.67)
	CUS3	Specific customers were invited to join the project as team members	3.83 (1.72)
	CUS4	The implication of customers were high	3.98 (1.71)

As regards the factors that determine the involvement of FLE and CUS, Table 5.2 contains the mean and standard deviation of the items of the strategic factors of the firm and the personal factors of FLE and CUS. As far as the strategic factors of the firm, the EO has some high averages (minimum value 5.17 out of 7). This evidence is that the firm conducted a proactive strategy to seek new business opportunities and assume risks. Also, it is observed that innovative culture reaches an average value of its dimensions of 5.15 out of 7, which is evidence that the firms have promoting innovation among the organization members as one of their fundamental objectives.

On the other hand it is noted that the FLE personal factors (OID, individual creativity and openness to experience) have a high average (5 out of 7). Even though openness to experience dimension has values greater than 4 out of 7, these are a little lower. In the CUS personal factors case, its average value is less than FLE, i.e. they are 3.79 out of 7. Although the results are a little lower, they are clearly above average (3.5 out of 7). Therefore, despite the thesis limitation of asking a person about the personal factors manifested by others, we find that the CUS who participate in the SI projects also have these particular characteristics in common with the FLE.

Table 5.2. Descriptive statistics of the independent variables items

VARIABLES	ITEMS		MEAN (SD)
	Strategic factors of the firm		
Entrepreneurial orientation	EO1	The trend to make suitable strategic planning activities	5.17 (1.42)
	EO2	The ability to identify customers needs and desires	5.57 (1.27)
	EO3	The emphasis on making our business vision a fact	5.60 (1.16)
	EO4	The ability to identify new business opportunities	5.46 (1.39)
Innovative culture	IC1	Our firm encourages entrepreneurial efforts and is accepting of risk-taking efforts	5.16 (1.54)
	IC2	The glue that holds our organization together is a commitment to innovation and new service development	5.48 (1.39)
	IC3	Supervisors generally encourage people who work with them to exchange opinions and ideas	5.27 (1.46)
	IC4	The rewards are employed in new service development projects as a means of recognizing employee effort	4.70 (1.66)

Table 5.2. Descriptive statistics of the independent variables items (continuation)

VARIABLES	ITEMS		MEAN (SD)
Personal factors of frontline employees			
<i>Frontline employees behavior linked to firm</i>			
Organizational identification	FLE_OI1	Employees who participated in the new service development process they identified with the organization	5.69 (1.37)
	FLE_OI2		5.69 (0.98)
<i>Frontline employees personality</i>			
Individual creativity	FLE_CR1	They had a fresh approach to problems	5.06 (1.53)
	FLE_CR2	They came up with new and practical ideas	5.20 (1.49)
	FLE_CR3	They developed creative solutions to problems	5.17 (1.55)
Openness to experience	FLE_OP1	The employees had frequent contacts with suppliers of our organization	4.85 (1.75)
	FLE_OP2	The employees had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.)	4.18 (1.08)
	FLE_OP3	The employees shared ideas with people outside the organization (friends, family, etc.)	4.03 (1.88)
Personal factors of customers			
<i>Customers behavior linked to firm</i>			
Organizational identification	CUS_OI1	Customers who participated in the new service development process they identified with the organization	3.99 (1.77)
	CUS_OI2		5.04 (1.2)
<i>Customers personality</i>			
Individual creativity	CUS_CR1	They had a fresh approach to problems	3.97 (1.66)
	CUS_CR2	They came up with new and practical ideas	3.98 (1.71)
	CUS_CR3	They developed creative solutions to problems	3.73 (1.74)
Openness to experience	CUS_OP1	The customers had frequent contacts with suppliers of our organization	2.79 (1.87)
	CUS_OP2	The customers had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.)	3.29 (1.98)
	CUS_OP3	The customers shared ideas with people outside the organization (friends, family, etc.)	3.52 (1.84)

Finally, the descriptive statistics of the control variables are presented in Table 5.3.

Table 5.3. Descriptive statistics of the control variables items

VARIABLES	ITEMS		MEAN (SD)
Differentiation	DIF1	Our market is characterized by services that other firms can hardly imitate	3.69 (1.75)
	DIF2	Our competitions can hardly imitate our products and services	3.84 (1.73)
Firm size	SIZE	Estimation of number of employees at December 31 st in 2013	2,489.15 (20,849.66)

5.1.1.2. Analysis of the quality of the scales

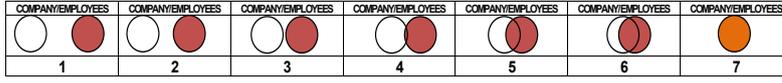
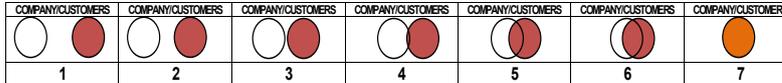
Prior to contrasting the hypotheses raised in chapter three, we judge that the scales used are suitable for measuring the concepts that they are intended to measure. To this end, firstly an exploratory factor analysis was made for each of the scales in the first stage. Secondly, a confirmatory factor analysis has been undertaken and finally, with the standardized weighting, the convergent validity and discriminate was evaluated.

Based on these theoretical criteria that determine if a scale should be considered reflective or formative (Jarvis, MacKenzie, and Podsakoff 2003) and the consideration of the involvement concept in the field of SI (Carbonell, Rodríguez-Escudero, and Pujari 2009; Melton and Hartline 2015), we consider the involvement of FLE and CUS as formative indicators. These indicators are characterized and defined as latent variables. They are not interchangeable between themselves, they are uncorrelated, and if we delete any of them the conceptual domain of the construct is modified. The remaining constructs are reflective.

The indicators that make up these constructs (the involvement of the FLE and CUS) do not have to be necessarily correlated with each other. This makes the traditional analysis procedures of reliability and validity unsuitable to evaluate its psychometric properties (Bollen and Lennox 1991; Diamantopoulos and Winklhofer 2001; Jarvis, MacKenzie, and Podsakoff 2003; Podsakoff, Shen, and Podsakoff 2006). Ruling out the multicollinearity existence is one of the recommendations that it is used to assess the quality measures of this type of index. In response to this recommendation, we note that in these constructs, none of the indicators have a VIF (variance inflation factor) greater than 10, or a condition number (CN) greater than 30. Specifically, for the involvement of the FLE and CUS, the maximum FIV are 2.965 and 2.439. The CN are 19.597 and 9.892 respectively.

On the other hand, to ensure the convergent and discriminant validity of the scales (Barklay, Higgins, and Thompson 1995), first of all, the measurement model using a confirmatory factor analysis with AMOS 21 was estimated, using the maximum likelihood method and using as input the matrix of variances. Factors loading can be seen in table 5.4.

Table 5.4. Model construct and Measurement Items

		Factor Loading
Strategic factors of the firm		
Entrepreneurial orientation (Naman and Slevin 1993) Cronbach alpha= 0.818; CR= 0.824; AVE= 0.541		
EO1	The trend to make suitable strategic planning activities	.646
EO2	The ability to identify customers needs and desires	.778
EO3	The emphasis on making our business vision a fact	.778
EO4	The ability to identify new business opportunities	.731
Innovative culture (Menor and Roth 2007) Cronbach alpha= 0.846; CR= 0.857; AVE= 0.604		
IC1	Our firm encourages entrepreneurial efforts and is accepting of risk-taking efforts	.793
IC2	The glue that holds our organization together is a commitment to innovation and new service development	.832
IC3	Supervisors generally encourage people who work with them to exchange opinions and ideas	.855
IC4	The rewards are employed in new service development projects as a means of recognizing employee effort	.603
Personal factors of frontline employees		
<i>Frontline employees behavior linked to firm</i>		
Organizational identification (Bergami and Bagozzi 2000) Correlation coefficient= 0.463; CR= 0.638; AVE= 0.479		
FLE_OI1	Employees who participated in the new service development process they identified with the organization	.750
FLE_OI2		.618
<i>Frontline employees personality</i>		
Individual creativity (adapted from Weiss, Hoegl, and Gibbert 2011) Cronbach alpha= 0.912; CR= 0.915; AVE= 0.782		
FLE_CR1	They had a fresh approach to problems	.900
FLE_CR2	They came up with new and practical ideas	.917
FLE_CR3	They developed creative solutions to problems	.833
Openness to experience (De Jong and Kemp 2003) Cronbach alpha= 0.716; CR= 0.728; AVE= 0.476		
FLE_OP1	The employees had frequent contacts with suppliers of our organization	.604
FLE_OP2	The employees had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.) <input type="checkbox"/>	.813
FLE_OP3	The employees shared ideas with people outside the organization (friends, family, etc.)	.636
<i>Customers behavior linked to firm</i>		
Organizational identification (Bergami and Bagozzi 2000) Correlation coefficient= 0.428; CR= 0.647; AVE= 0.496		
CUS_OI1	Customers who participated in the new service development process they identified with the organization	.872
CUS_OI2		.492
<i>Customers personality</i>		
Individual creativity (adapted from Weiss, Hoegl, and Gibbert 2011) Cronbach alpha= 0.914; CR= 0.914; AVE= 0.781		
CUS_CR1	They had a fresh approach to problems	.862
CUS_CR2	They came up with new and practical ideas	.883
CUS_CR3	They developed creative solutions to problems	.904
Openness to experience (De Jong and Kemp, 2003) Cronbach alpha= 0.709; CR= 0.716; AVE= 0.459		
CUS_OP1	The customers had frequent contacts with suppliers of our organization	.624
CUS_OP2	The customers had contacts with others stakeholders which have been mentioned previously (Consultancies, government agencies, universities, research institutes, etc.) <input type="checkbox"/>	.764
CUS_OP3	The customers shared ideas with people outside the organization (friends, family, etc.)	.634
$\chi^2(224) = 435.16$ ($p=0.00$) $\chi^2 / g.l. = 1.94$ RMSEA = 0.06 CFI = 0.93 IFI = 0.93		

Before proceeding to the hypotheses contrast and once the one-dimensionality of the scales has been analyzed, it is necessary to assess their reliability and validity. Therefore, Cronbach's alpha (see Table 5.4) SPSS was used to diagnose reliability through the calculation of. This coefficient of reliability assesses the consistency of the entire scale and it is the most commonly used measure (Hair et al. 2006). For all scales Cronbach's alpha is superior to 0.70, which proves their reliability.

The convergent validity has been evaluated according to the procedure proposed by Fornell and Larcker (1981), internal consistency (ρ_c or CR). Following the recommendations of Hair et al. (2006), this indicator must be above 0.6 for the reliability of the construct to be acceptable. The Table 5.4 shows that the constructs model coefficients are equal to or greater than 0.70. In addition, it considers the values of Average Variance Extracted (AVE), which must be above 0.5 (Hair et al. 2006). As can be seen from table 5.4, this condition is also met for the model constructs.

With regard to the discriminant validity, it has to confirm that the scales measure different concepts. This condition is met if each latent variable shares more variance with their respective indicators than with other variables in the model. Therefore, it is necessary to verify that the square root of the average variance extracted (AVE) of each construct (diagonal of the Table 5.5) is superior to the correlation that it has with the rest of the constructs. Thus, it should compare each diagonal element with all the elements that are both in the same row and in the same column. We note that this condition is also met.

Considering all the results obtained, we affirm that the measurement model is acceptable and it can be used to contrast the hypotheses proposed in this thesis.

Table 5.5. Correlations between the variables in the model

	1	2	3	4	5	6	7	8	9	10
E. Orientation	.736									
I. Culture	.590**	.777								
Identification of FLE	.358**	.428**	.692							
Creativity of FLE	.254**	.282**	.590**	.884						
Openness of FLE	.084	.237**	.328**	.347**	.690					
Identification of CUS	.358**	.210**	.230**	.268**	.141*	.704				
Creativity of CUS	.289**	.261**	.163*	.317**	.270**	.694**	.884			
Openness of CUS	.144*	.162*	.177**	.177**	.472**	.383**	.458**	.677		
FLE involvement	.365**	.448**	.647**	.723**	.459**	.267**	.331**	.227**	n.a.	
CUS involvement	.304**	.243**	.196**	.334**	.360**	.596**	.759**	.576**	.387**	n.a.

Diagonal: square root of the average variance extracted

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

5.1.2. Common Method Bias

Most researchers agree that studies using a single informant are subject to common method bias. This bias can exist when a single informant values the independent and dependent variables in the study (Ayers, Dahlstrom, and Skinner 1997; Olson, Walker, and Ruekert 1995). Thus, this problem refers to the degree to which correlations between the variables are influenced, due to the effect of the method used.

However, according to Podsakoff, Shen, and Podsakoff (2006), there are a number of methodologies to determine if this bias is a threat to the correct interpretation of the results. Also, they affirm that there are several procedures and statistical methods to control it. The procedures applied in this work include the protection of the anonymity of the interviewee and the separation of the measures of the dependent and independent variables. In addition, statistical methods such as the factor Harman test have been applied. For this, an exploratory factor analysis was carried out with rotation varimax of all the model variables using SPSS20. The results showed a total of seven factors that explain 69.839% of the total variance. The first factor explains only 13.525% of the total variance. In this way we do not see that there is a single general factor, nor the first factor explains most of the variance. This provides evidence that the common method bias is not a problem in our sample.

On the other hand, it has used the variable mark technique of Lindell and Whitney (2001). These authors propose a model of the common method variance in which the researcher must select an independent variable that, a priori, it is not related to the model-dependent variable from the theoretical point of view. They named this variable the "marker-variable". For our study, we have selected as a marker-variable the "type of service". Actually in Table 5.6, we can check that the marker-variable correlation with all variables of the model is not significant and nor is it correlated with the rest of explanatory variables. This demonstrates also, the discriminant validity of our marker-variable.

Further, these authors propose the correlations adjustment between the model constructs. To do this, they apply the correction of the common method variance. In our case, the indicator used for this correction is $r = 0.002$ (this is the smallest positive correlation between the marker-variable and the model variables, see Table 5.6). After applying all of these steps and the formulas proposed by these authors, we obtain the significant correlations between the variables of our model.

In summary, the results of these tests suggest that the common method bias does not affect our data interpretation.

Table 5.6. Correlations between the marker-variable and the model variables

	TYPE OF DISTRIBUTION (marker-variable)
Entrepreneurial orientation	-0.064
Innovative culture	-0.076
Organizational identification of FLE	0.047
Individual creativity of FLE	0.042
Openness to experience of FLE	0.002
Organizational identification of CUS	0.070
Individual creativity of CUS	0.091
Openness to experience of CUS	-0.059
FLE involvement	0.056
CUS involvement	0.149*

** The correlation is significant at 0.01 (bilateral) level.

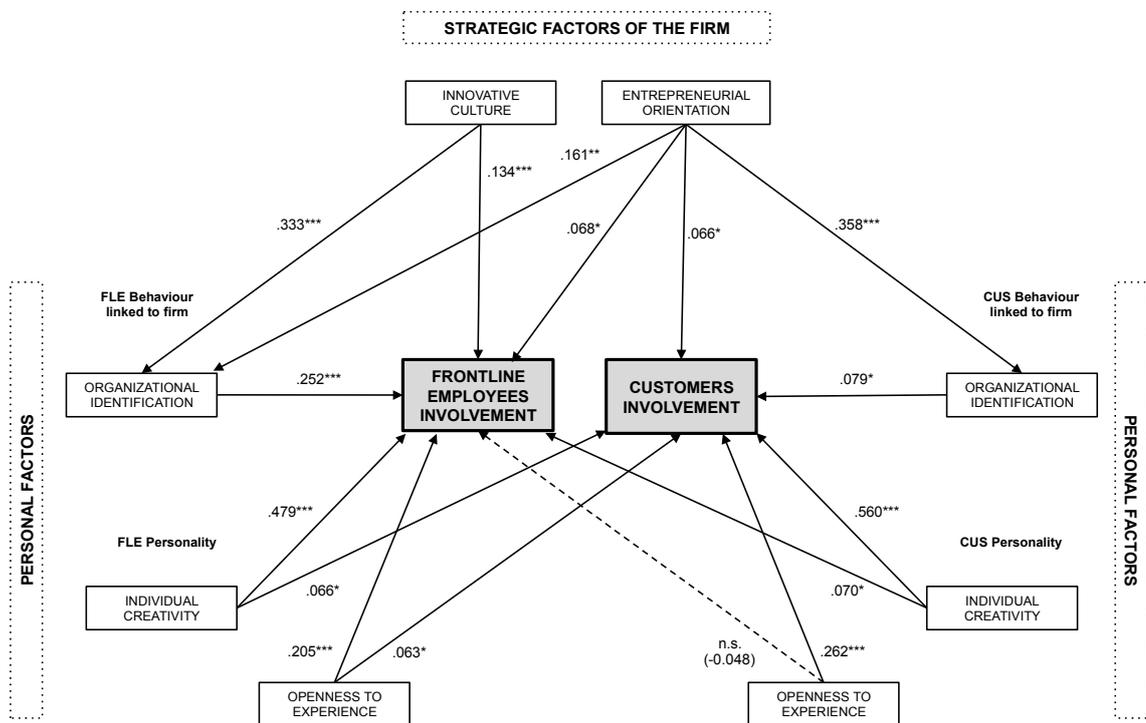
* The correlation is significant at 0.05 (bilateral) level.

5.1.3. Findings and Discussion

In this section, after analyzing the scales of the model, the hypotheses that were proposed in Chapter 3 will be tested. For this purpose, we used path analysis since we are facing a large number of variables and relationships. This method allows the simultaneous analysis of them all.

To confirm the hypotheses, the sign, the size and the significance of the standardized coefficients that result are examined to calculate the model using the technique of maximum likelihood estimation. Next, Figure 5.1 shows the relationships obtained with their standardized coefficients and significance levels. An explanation of the results follows, as for the hypothesis formulation in Chapter 3.

Figure 5.1. Model's relationships, standardized coefficients and significance levels



*** p<0.01; ** p<0.05; * p<0.10 (one-tailed test)

CONTROL VARIABLES: Differentiation → FLE involvement (0.010, n.s.); Differentiation → CUS involvement (-0.063, n.s.); Firm Size → FLE involvement (0.011, n.s.); Firm Size → CUS involvement (-0.069, p<0.01)

The results show that strategic firm factors have a positive influence on the involvement of FLE and CUS in SI projects. Specifically, if the firm carries out an internal strategy promoting an innovative culture, it favours the FLE involvement. Consequently, H1 is accepted ($\beta=0.134$, $p<0.01$), continuing with the line proposed by the following authors (Gatignon and Huereb 1997; Naranjo-Valencia, Jiménez-Jiménez, and Sanz-Valle 2011). H2 is also accepted ($\beta=0.333$, $p<0.01$). This strategy not only has a positive impact on these actors but in their OID. Therefore, according to Zhou et al. (2005) having an internal strategy based on an innovative philosophy, increases the future FLE' confidence with the firm. In addition, in the next section we will demonstrate that OID of FLE mediates the innovative culture impact on FLE involvement as according to Baron and Kenny (1986).

Regarding the second strategic factor used by the firm, EO, it is shown that by using it, the company promotes CUS involvement in SI projects (H4 is accepted, $\beta=0.06$, $p<0.10$). Actually, these findings delve into the idea that EO is a strategy that goes from

the inside of the firm out, thus this facilitates the CUS transformation knowledge in new ideas to develop new services (Nonaka and Toyama 2005; Li, Huang, and Tsai 2009). Thus, H3 is also accepted ($\beta=0.068$, $p<0.10$). Furthermore, this strategy helps managers to develop innovative activities with their FLE and look for new designs and solutions to their services portfolio (Zhang, Lim, and Cao 2004). On the other hand, it is demonstrated that EO has a positive impact on the OID of FLE and CUS, despite the relationships between EO and the behaviors linked to the firm having been the subject of little study (H5 and H6 are accepted, $\beta=0.161$, $p<0.05$ and $\beta=0.358$, $p<0.01$, respectively). Furthermore, these findings are consistent with recent studies in this field that determine that the leaders associated with an entrepreneurial strategy are capable of influencing their followers' identification (Liu, Zhu, and Yang 2010; Anderson, Potočník, and Zhou 2014).

In relation to the hypothesis raised on the personal factors influence in the involvement of FLE and CUS, it is confirmed that the majority of the assumptions are accepted. We also note that there is a positive impact on the behavior of these two actors in relation to the firm. Specifically, H7 is accepted ($\beta=0.252$, $p<0.01$). Consequently, the OID of the FLE has a positive impact on his involvement level. This relationship is consistent with the studies, which show that OID has the ability to generate intentions to participate in creative processes (Riketta 2005; Ashforth, Harrison, and Corley 2008). In the CUS case, this relationship is weakly accepted (H8, $\beta=0.079$, $p<0.10$). Although, according to some authors such as Bergami and Bagozzi (2000), Dutton, Dukerich, and Harquail (1994) and in line with the exploratory analysis of this thesis (see Chapter 3), the CUS who are more identified with the firm are the most proactive and they bring more ideas.

Additionally, in order to deepen these relations that have been little explored, we have examined the mediating effect of OID of FLE. To test the mediating role of OID of FLE, we followed the Baron and Kenny (1986) procedure by estimating three models using causal modeling through AMOS 21. So, to test for mediation, we should estimate the three following models: first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent and on the mediator. In addition, the following conditions must hold: first, the independent variable must affect the mediator in the first regression equation; second, the independent variable must affect the dependent variable in the second equation; third, the mediator must affect the dependent variable in the third regression equation; and fourth, the effect of the

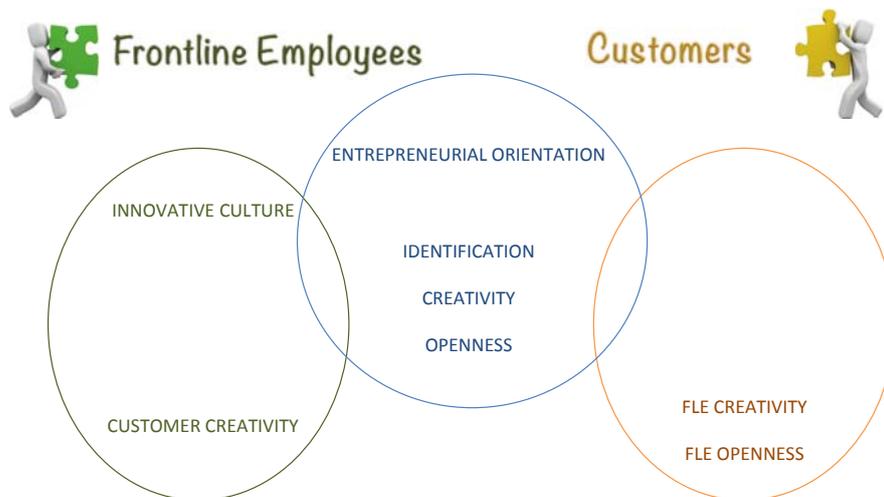
independent variable on the dependent variable must be less in the third equation than in the second. Full mediation holds if the independent variable has no effect when the mediator is controlled. Results from Baron and Kenny's (1986) mediation analysis indicate that OID of FLE mediates the effect of innovative culture on FLE involvement. That is, although innovative culture has a positive impact on FLE involvement, its effects are indirect via OID of FLE.

An analysis of the personality factors proposed shows that the findings highlight the idea that the development of successful services, the implementation of new processes, the design of new services and their introduction onto the market all depend on a person or a team coming up with a good idea and developing this idea beyond its initial state (Kristensson, Magnusson, and Matthing 2002). First, H9 is accepted with a very high coefficient ($\beta=0.479$, $p<0.01$), i.e. the individual creativity of the FLE is a factor that explains their involvement in a creative process. According to the extant literature, a relationship between employees and creativity using an intrinsic motivation perspective (Shalley, Zhou, and Oldham 2004) has been justified. The same is found in the case of the CUS. The individual creativity that it is shown by the CUS is what has the greatest impact on their involvement (H10 is accepted, $\beta=0.560$, $p<0.01$). Hence, these findings reveal that CUS creativity not only plays an important role in generating new ideas but also in participating in new service projects (Hieneerth 2006). In addition, H11 is also accepted ($\beta=0.205$, $p<0.01$). With this hypothesis, we demonstrate that the FLE who are more open to new experiences with other actors are those who have a greater degree of involvement in creative projects. Thus, we follow the recent line marked by Huang and Rice (2012) that establish that some level of "openness" is necessary to improve the processes of innovation. In addition, CUS with a greater degree of openness to experience are the ones who are more closely involved in the innovation processes (H12 is accepted, $\beta=0.262$, $p<0.01$).

Finally we show the results obtained from the more original relations of this model. This way, the personal factors of FLE and CUS influence the opposite actor. Specifically, we demonstrate that a creative FLE has a positive impact on CUS involvement (H13, $\beta=0.066$, $p<0.10$). In the same way, it happens with a FLE who expresses a high degree of openness to experience (H15, $\beta=0.063$, $p<0.10$). On the client side this effect is more difficult but in spite of this, we observe that this cross influence is significant in the case of individual creativity, i.e. the creative CUS cause FLE to be involved in the SI project, thus H14 is accepted ($\beta=0.07$, $p<0.10$). In contrast, we cannot affirm that CUS who are open to experience contribute to the FLE involvement (H16 is not

supported). A possible explanation is that this CUS openness does not add value to the FLE as regards the innovation project or in line with the firm aims, and therefore it does not influence their involvement in the NSD project. Definitively, these findings prove the theories and studies mentioned above in these areas such as Similarity-Attraction Paradigm, Lichtenthal and Tellefsen (2001) research and the emotional contagion concept. In Figure 5.2, we summarize the findings obtained.

Figure 5.2. Summary of the results



5.2. COMPARING THE EFFECT OF FRONTLINE EMPLOYEES AND CUSTOMERS IN SERVICE INNOVATION. IS IT REALLY IMPORTANT TO INTEGRATE THEM KEEPING IN MIND THE DEGREE OF SERVICE INNOVATION PROJECT?

5.2.1. Analysis of the measuring scales

As in the first part, in order to carry out the analysis of the measuring scales, firstly we calculated the descriptive statistics (mean and standard deviation) of the items of all the scales. Next, we conducted an exploratory factor analysis and a confirmatory factor analysis using AMOS 21.

5.2.1.1. Descriptive analysis of the variables

The descriptive statistics of the second part are then analyzed. As there are some variables that have been used in the first part, in this section we focus on those that have not been described previously.

In connection with the degree of service newness, the high scores show that the analyzed products were really innovative (4.49 and 5.60 out of 7). On the other hand, the information integration dimension is also high and very close to 5 (4.93 on average out of 7). This demonstrated that, in general, the respondents consider that the FLE and CUS shared ideas and information relating to the service project. (See Table 5.7).

Next there the statistical descriptions of the performance dimensions of the service project are analyzed. The high mean scores of the competitive advantage items, greater than 5.63 (see Table 5.7) should be noted. The average estimations show that the respondents considered that the new service better met the CUS' needs and desires, achieving an improved competitive advantage. Finally, market performance is discussed. Specifically, we can see that the sales, sales growth, profits and profitability expectations show very similar levels and greater than 4.7, which confirms that the fixed goals have been met.

Table 5.7. Descriptive statistics of the dependent variables items

VARIABLES	ITEMS		MEAN (SD)
Involvement			
Frontline employees involvement	FLE1	The frequency of the meetings with employees was high	5.43 (1.30)
	FLE2	There were extensive consultations with employees	5.00 (1.36)
	FLE3	Specific employees were invited to join the project as team members	5.16 (1.40)
	FLE4	The implication of employees was high	5.44 (1.39)
Customers involvement	CUS1	The frequency of the meetings with customers was high	4.20 (1.58)
	CUS2	There were extensive consultations with customers	3.77 (1.67)
	CUS3	Specific customers were invited to join the project as team members	3.83 (1.72)
	CUS4	The implication of customers was high	3.98 (1.71)
Degree of service innovation project			
Service newness	NEW1	The new service were totally new to the market	4.49 (1.97)
	NEW2	The new service offered new features versus competitive services	5.60 (1.55)
Integration			
Integration of information	INT1	Members freely shared their information and perspectives with one another	4.96 (1.80)
	INT2	When making important project-related decisions, members paid great attention to the information and perspectives of members from other departments	4.97 (1.73)
	INT3	Members freely challenged the assumptions underlying one another's ideas and perspectives	4.85 (1.82)
Outcomes			
Competitive advantage	CAD1	Satisfies clearly identified customers need	5.81 (1.13)
	CAD2	Solves important customers problem	5.63 (1.36)
	CAD3	It fulfilled the quality expectations	5.69 (1.16)
	CAD4	Our customers were very satisfied with this service	5.76 (1.14)
	CAD5	It generated an important competitive advantage for our organization	5.71 (1.33)
Market performance	MKP1	The new service exceed sales objectives	5.00 (1.67)
	MKP2	The new service exceed sales growth objectives	5.01 (1.55)
	MKP3	The new service exceed profit margin objectives	4.73 (1.68)
	MKP4	The new service exceed profitability objectives	4.79 (1.69)
Control variables			
Differentiation	DIF1	Our market is characterized by services that other firms can hardly imitate	3.69 (1.75)
	DIF2	Our competitions can hardly imitate our products and services	3.84 (1.73)
Firm size	SIZE	Estimation of number of employees at December 31 st in 2013	2,489.15 (20,849.66)

5.2.1.2. Analysis of the quality of the scales

Prior to contrasting the hypotheses raised in chapter three, we deem the scales used to be suitable for measuring the concepts that they are intended to measure. Firstly, to reach this conclusion an exploratory factor analysis was made for each of the scales in the first stage. Secondly, a confirmatory factor analysis was undertaken and finally, with the standardized weighting, the convergent and discriminate validity was evaluated.

To ensure the convergent and discriminant validity of the scales (Barclay, Higgins, and Thompson 1995), first the measurement model using a confirmatory factor analysis with AMOS 21, using the maximum likelihood method and using as input the matrix of variances, was estimated (see factors loading in Table 5.8).

Table 5.8. Model construct and Measurement Items

		Factor Loading
Service newness (Cheng and Krumwiede 2012)		
Correlation coefficient= 0.479; CR= 0.727; AVE= 0.597		
NEW1	The new service were totally new to the market	.491
NEW2	The new service offered new features versus competitive services	.976
Information integration (adapted from Sethi 2000)		
Cronbach alpha= 0.917; CR= 0.918; AVE= 0.788		
INT1	Members freely shared their information and perspectives with one another	.892
INT2	When making important project-related decisions, members paid great attention to the information and perspectives of members from other departments	.903
INT3	Members freely challenged the assumptions underlying one another's ideas and perspectives	.868
Competitive advantage (De Brentani 1989)		
Cronbach alpha= 0.846; CR= 0.858; AVE= 0.551		
CAD1	Satisfies clearly identified customers need	.660
CAD2	Solves important customers problem	.635
CAD3	It fulfilled the quality expectations	.710
CAD4	Our customers were very satisfied with this service	.898
CAD5	It generated an important competitive advantage for our organization	.770
Market Performance (Carbonell, Rodríguez-Escudero, and Pujari 2009)		
Cronbach alpha= 0.946; CR= 0.946; AVE= 0.814		
MKP1	The new service exceed sales objectives	.890
MKP2	The new service exceed sales growth objectives	.874
MKP3	The new service exceed profit margin objectives	.923
MKP4	The new service exceed profitability objectives	.920
$\chi^2(94) = 271.93$ ($p=0.00$) $\chi^2 /g.l. = 2.89$ RMSEA = 0.07 CFI = 0.92 IFI = 0.92		

Before proceeding to the contrast of the hypotheses and once the one-dimensionality of the scales was analyzed, it was necessary to assess their reliability and validity. Therefore, we proceeded to diagnose reliability through the calculation of Cronbach's

alpha (see Table 5.8) SPSS. This coefficient of reliability assesses the consistency of the entire scale and it is the most commonly used measure (Hair et al. 2006). For all scales Cronbach's alpha is above 0.70, which proves their reliability.

The convergent validity was evaluated according to the procedure proposed by Fornell and Larcker (1981), internal consistency (ρ_c or CR). Following the recommendations of Hair et al. (2006), this indicator must be above 0.6 for the reliability of the construct to be acceptable. Table 5.8 shows that the constructs model coefficients are equal to or greater than 0.70. In addition, it considers the values of average variance extracted (AVE), which must be above 0.5 Hair et al. (2006). As can be seen from Table 5.8, this condition is also met for the model constructs.

With regard to the discriminant validity, it was necessary to check that the scales measure different concepts. This condition is met if each latent variable shares a higher variance with their respective indicators than with other variables in the model. Therefore, it is necessary to verify that the square root of the average variance extracted (AVE) of each construct (diagonal of the Table 5.9) is superior to the correlation that it has with the rest of constructs. Thus, each diagonal element with all the elements can be compared to ensure that are both in the same row and in the same column. We note that this condition is also met.

Considering all the results obtained, we affirm that the measurement model is acceptable and it can be used to contrast the hypotheses proposed in this thesis.

Table 5.9. Psychometric Properties and correlations between the variables in the model

	1	2	3	4	5	6
FLE involvement	n.a.					
CUS involvement	.387**	n.a.				
Newness	.273**	.207**	.773			
Integration of information	.509**	.626**	.244**	.888		
Competitive advantage	.405**	.390**	.212**	.392**	.742	
Market performance	.202**	.245**	.039	.222**	.608**	.902

Diagonal: **square root of the average variance extracted**

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

5.2.2. Common Method Bias

Most researchers agree that studies using a single informant are subject to common method bias. This bias can exist when a single informant values the independent and dependent variables in the study (Ayers, Dahlstrom, and Skinner 1997; Olson, Walker, and Ruekert 1995). Thus, this problem refers to the degree to which correlations between the variables are influenced, due to the effect of the method used.

However, according to Podsakoff, Shen, and Podsakoff (2006), the results showed a total of five factors that explain 72.623% of the total variance. The first factor explains only 20.487% of the total variance. In this way no single general factor can be identified, nor does the first factor explain most of the variance. This provides evidence that the common method bias is not a problem in our sample.

On the other hand, it has used the variable mark technique of Lindell and Whitney (2001). These authors propose a model of the common method variance in which the researcher must select an independent variable that, a priori, it is not related to the model-dependent variable from the theoretical point of view. They named this variable the "marker-variable". For our study, we have selected as a marker-variable the "type of service". Actually in Table 5.10, we can check that the marker-variable correlation with the dependent variables of the model is not significant and that it is not correlated with the rest of explanatory variables either. This demonstrates also, the discriminant validity of our marker-variable.

To continue, these authors propose the correlations adjustment between the model constructs. For that, they apply the correction of the common method variance. In our case, the indicator used for this correction is $r = 0.056$ (this is the smallest positive correlation between the marker-variable and the model variables, see Table 5.10). After applying all of these steps and the formulas proposed by these authors, we obtained the significant correlations between the variables of our model, which were maintained after the adjustment of the common method variance.

In summary, the results of these tests suggest that the common method bias does not affect our data interpretation.

Table 5.10. Correlations between the marker variable and the model variables

	TYPE OF DISTRIBUTION (marker-variable)
FLE involvement	.056
CUS involvement	.149*
Newness	-.040
Integration of information	.013
Competitive advantage	.103
Market performance	.109

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

5.2.3. Findings and Discussion

As we have developed in the previous model, in this section, we will test the hypotheses that were proposed in Chapter 3, after analyzing the scales of the model. For this purpose, a path analysis was used since we are facing a large number of variables and relationships. This method allows the simultaneous analysis of them all.

To confirm the hypotheses, we examined the sign, the size and the significance of the standardized coefficients that result to calculate the model using the technique of maximum likelihood estimation. Next, Table 5.11 shows the relationships obtained with their standardized coefficients and significance levels. We then explain the results, as we did for the hypothesis formulation in Chapter 3.

Table 5.11. Standardized parameters estimates

Model's relationships	Model 1	Model 2	Model 3
<i>Hypothesized relationships</i>			
FLE involvement → Competitive Advantage	0.24*** (H1)	0.26***	0.27***
CUS involvement → Competitive Advantage	0.19*** (H2)	0.18***	0.16**
Newness x FLE involvement → Competitive Advantage		0.17***(H3)	0.18**
Newness x CUS involvement → Competitive Advantage		-0.14**(H4)	-0.12**
Integration x Newness x FLE involvement → Competitive Advantage			-0.03 (H5)
Integration x Newness x CUS involvement → Competitive Advantage			0.12* (H6)
<i>Control relationships</i>			
Differentiation → Competitive Advantage	0.02	0.02	0.02
Firm Size → Competitive Advantage	0.00	0.00	0.00
Integration → Competitive Advantage	0.13**	0.15**	0.16**
Newness → Competitive Advantage	0.07	0.07	0.02
Competitive Advantage → Market Performance	0.61***	0.61***	0.61***
Integration x FLE involvement → Competitive Advantage		-0.04	-0.05
Integration x CUS involvement → Competitive Advantage		0.04	-0.06
R ² of Competitive Advantage	0.233	0.241	0.253
R ² of Market Performance	0.367	0.367	0.367
Fit indexes (removed non-significant paths)	NFI = 0.985	NFI = 0.985	NFI = 0.989
	RFI = 0.912	RFI = 0.900	RFI = 0.905
	RMSEA = 0.000	RMSEA = 0.013	RMSEA = 0.000

Note: Significance levels: *** p<0.01; ** p<0.05; * p<0.10 (one-tailed test)

Results for Model 1 in Table 5.11 show positive relationships between FLE involvement and competitive advantage (H1, $\beta=0.24$, $p<0.01$) and CUS involvement and competitive advantage (H2, $\beta=0.19$, $p<0.01$). These results follow the recent works of Melton and Hartline (2010, 2015) and Ordanini and Parasuraman (2011) that demonstrate how FLE and CUS are two key sources of information to develop new services successfully. In fact, these two actors have been also positioned in the literature of the involvement of FLE and CUS separately, as two critical factors for improving the competitiveness of the firm. To support the arguments mentioned and in spite of not being an object of our study, the results of Model 1 show that information integration produce a higher level of competitive advantage ($\beta=0.13$, $p<0.05$) and this competitive advantage improves the market performance ($\beta=0.61$, $p<0.01$).

Results for Model 2 show positive and significant interaction effects of service newness and FLE involvement ($\beta=0.17$, $p<0.01$). Thus H3 is supported. These results add value to this field, demonstrating that the involvement of FLE and CUS depends on the degree of SI project. For instance, the impact of FLE involvement in the competitive advantage improves when the service project is radical. Unlike the previous hypothesis (H3) we have found a significant and negative two-way interaction effects of CUS involvement and service newness on competitive advantage (H4, $\beta=-0.14$, $p<0.05$).

Next, following Aiken, West and Reno (1991) procedure, we calculated the effects of the involvement of FLE and CUS on competitive advantage at ± 2 standard deviations of the mean of service newness. In support of H3 and H4, Figure 5.3, shows firstly that the interaction effect of FLE involvement on competitive advantage is more positive and larger when service newness is high. Similarly, Table 5.12 (second column) reveals that the moderating effect of FLE involvement is significantly positive ($\beta=0.18$, $p<0.05$; $\beta=0.23$, $p<0.01$; $\beta=0.45$, $p<0.01$; $\beta=0.59$, $p<0.01$) at low, high and very high levels of service newness ($-1SD$, $+1SD$ and $+2SD$). And secondly, according to H4, the interaction effect of CUS involvement on competitive advantage is only positive when service newness is low. Furthermore, Table 5.12 (third column) reveals that the moderating effect of CUS involvement is significantly positive ($\beta=0.19$, $p<0.05$; $\beta=0.38$, $p<0.01$; $\beta=0.50$, $p<0.01$) at low and very low levels of service newness ($-1SD$ and $-2SD$). Also, this effect can be seen in Figure 5.4). These findings shed light on the research of Ordanini and Parasuraman (2011), Gustafsson, Kristensson, and Witell (2012) and Melton and Hartline (2015). They did not successfully demonstrate the relationship between CUS involvement and service newness. Only the last ones show that CUS involvement has an indirect positive impact on service innovativeness

through the process complexity at idea generation stage. Consequently, according to the SI literature, these findings demonstrate the importance of considering the degree of SI project when FLE and CUS are involved.

Finally, we found support for H6 (Table 5.11), which suggested a positive three-way interaction effect of integration of information, service newness and CUS involvement on competitive advantage ($\beta=0.16$, $p<0.05$). Next, according to Aiken, West and Reno (1991) procedure (Table 5.12) and the partial derivative's approach proposed by Schoonhoven (1981) (Figure 5.5), it is determined whether the three-way interaction effects changes over the range of the variable integration of information. Drawing on the work of Schoonhoven (1981), we present the three-way interaction effect of CUS involvement, service newness and integration of information on competitive advantage by graphing the partial derivative of equation (1): $(d \text{ competitive advantage}/d \text{ CUS involvement}) \times (1/d \text{ service newness}) = -0.12 + 0.12 \text{ integration of information}$. The result of equation is graphically depicted in Figure 5.5. As we can see, the results provide support for H6, as the negative moderating effect of service newness on the CUS involvement-competitive advantage relationship becomes less pronounced as integration of information increases. Next, following Aiken, West and Reno (1991) procedure, we calculated the effects of service newness on the relationship between CUS involvement and competitive advantage at ± 2 standard deviations of the mean of integration of information (Table 5.12, fourth column). As we can observe, although the interaction effect of CUS involvement and service newness is non-significant from high or very high levels up to the mean of integration of information (+2SD, +1SD and mean), it becomes significant and negative at low and very low levels of integration of information ($\beta=-0.32$, $p<0.01$; $\beta=-0.44$, $p<0.01$). These findings continue the research line of De Luca and Atuahene-Gima (2007) who consider that information integration mediates the relationship between the knowledge obtained by the firm and the innovation outcomes. This work points out that high level of information integration between FLE and CUS, improves the CUS involvement in service radical projects. Therefore, the crucial role of the FLE to achieve successful CUS involvement is evidenced. Although we know that Kristensson, Matthing, and Johansson (2008) showed that too much technical knowledge might actually inhibit individuals from producing truly innovative ideas, we continue the proposals of Ordanini and Parasuraman (2011), where in a radical innovation project the level of information integration is necessary, especially for CUS involvement.

Table 5.12. Variation in the interaction effects of newness and FLE involvement (NEW x FLE), newness and CUS involvement (NEW x CUS) and newness and customers (NEW x CUS)

Moderator levels	H3 FLE (on competitive advantage)	H4 CUS (on competitive advantage)	H6 NEW x CUS (on competitive advantage)
-2SD	0.05	0.50***	-0.44***
-1SD	0.18**	0.38***	-0.32***
Mean	0.23***	0.19**	-0.12
+1SD	0.45***	0.14	-0.07
+2SD	0.59***	0.02	0.05

Note: Significance levels: *** p<0.01; ** p<0.05; * p<0.10 (one-tailed test)
Standardized coefficients

Figure 5.3. Variation in the interaction effects of newness and FLE involvement

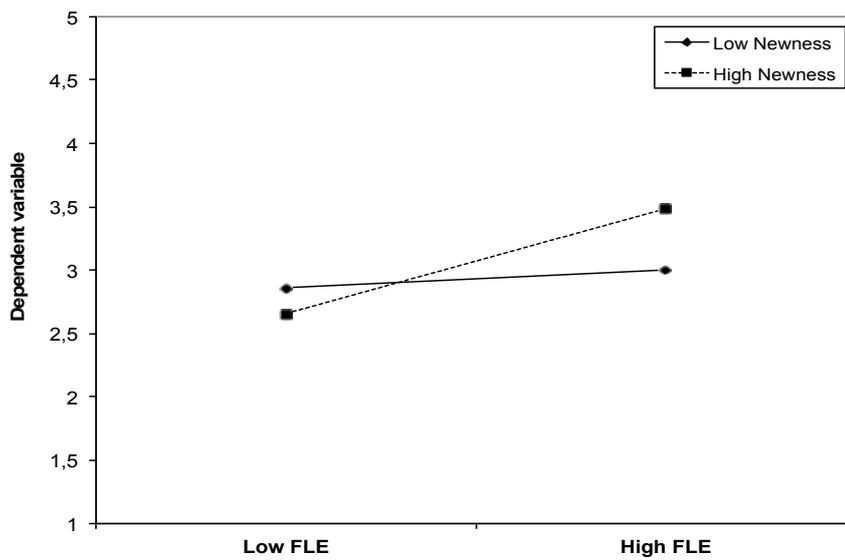


Figure 5.4. Variation in the interaction effects of newness and CUS involvement

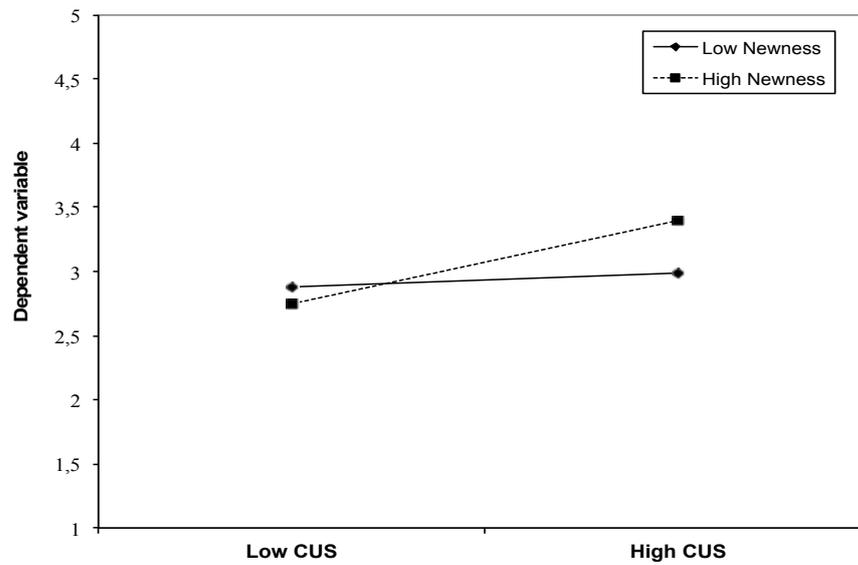
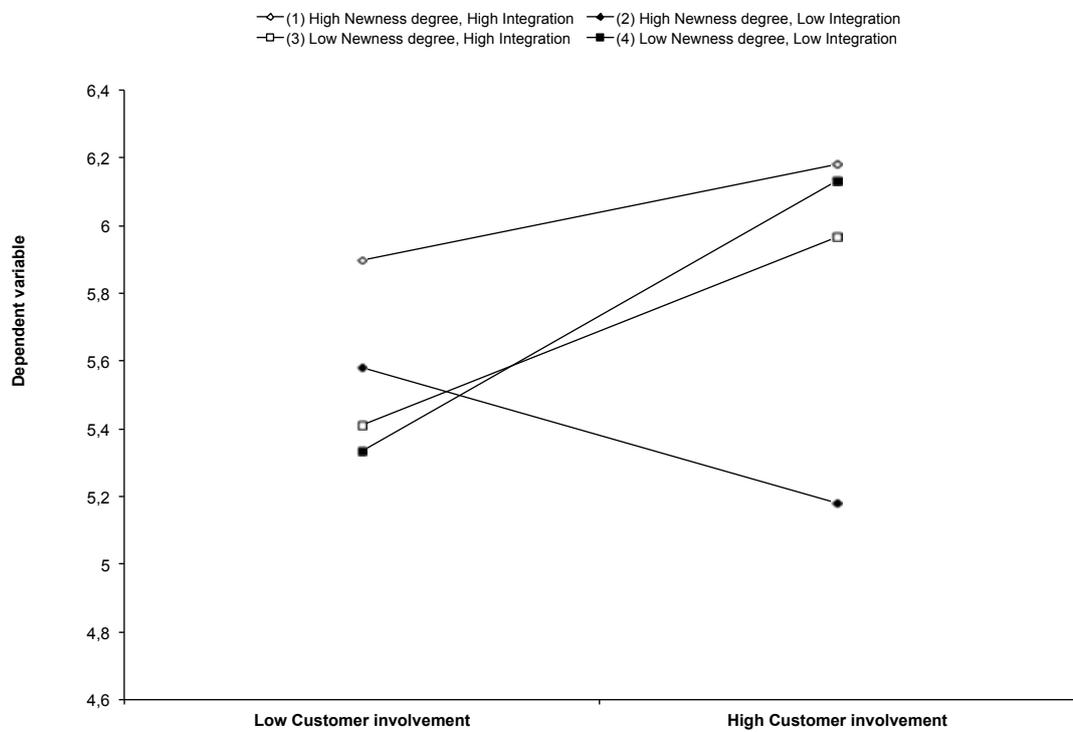


Figure 5.5. Variation in the interaction effects of integration, newness and CUS involvement



5.3. EXPLORING THE EFFECTS OF FRONTLINE EMPLOYEES AND CUSTOMERS IN THE NEW SERVICE DEVELOPMENT PROCESS. WHAT ROLE DO THE STAGES PLAY IN THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS PERFORMANCE? IS IT RELEVANT TO CONSIDER THE SERVICE NEWNESS ON THIS INVOLVEMENT IN EACH OF THE NSD STAGES?

5.3.1. Analysis of the measuring scales

As with the above sections, to carry out the analysis of the measuring scales, we first calculated the descriptive statistics (mean and standard deviation) of the items of all the scales. Next, we conducted an exploratory factor analysis and a confirmatory factor analysis using AMOS 21.

5.3.1.1. Descriptive analysis of the variables

In Table 5.13, the descriptive statistics (mean and standard deviation) of all the items that form this part are presented. In general, it can be seen that the values of the dimensions of FLE involvement and CUS are higher in idea generation and commercialization than at the development stage. However, service newness has a higher average in the development stage than at the idea generation and commercialization stages. In the performance case, the commercialization stage shows a higher average level than the others in innovation speed. The averages of project efficiency and market performance are lower in the development stage than in idea generation and commercialization. In contrast, the averages of competitive advantage are very similar between the three stages.

Table 5.13. Descriptive statistics of the dependent variables items

VARIABLES	ITEMS		MEAN (SD)		
	Involvement		IG	DE	CO
Frontline employees involvement*	FLE1	The frequency of the meetings with employees was high	5.49 (1.43)	5.38 (1.46)	5.64 (1.41)
	FLE2	There were extensive consultations with employees	5.04 (1.51)	5.07 (1.51)	5.23 (1.46)
	FLE3	Specific employees were invited to join the project as team members	5.28 (1.51)	5.18 (1.52)	5.38 (1.52)
	FLE4	The implication of employees was high	5.63 (1.45)	5.45 (1.50)	5.64 (1.43)
Customers involvement*	CUS1	The frequency of the meetings with customers was high	4.19 (1.88)	3.59 (1.86)	4.76 (1.84)
	CUS2	There were extensive consultations with customers	3.67 (1.88)	3.45 (1.82)	4.23 (1.84)
	CUS3	Specific customers were invited to join the project as team members	3.82 (1.89)	3.45 (1.87)	4.31 (1.91)
	CUS4	The implication of customers was high	3.98 (1.94)	3.50 (1.93)	4.47 (1.89)
			MEAN (SD)		
	Degree of service innovation project		IG	DE	CO
Newness	NEW1	The new service were totally new to the market	4.47 (1.974)	4.62 (1.97)	4.52 (1.95)
	NEW2	The new service offered new features versus competitive services	5.64 (1.513)	5.73 (1.50)	5.61 (1.49)
			MEAN (SD)		
	Outcomes		IG	DE	CO
Innovation speed	ISP1	Developed and launched faster than major competitors	4.51 (1.841)	4.48 (1.85)	4.56 (1.82)
	ISP2	Completed in less time than what was considered normal for industry	4.30 (1.876)	4.22 (1.88)	4.36 (1.86)
	ISP3	Launched ahead of the original schedule developed	4.30 (1.976)	4.28 (1.97)	4.39 (1.94)
Project efficiency	PEF1	It had less than planned new service development project costs	5.16 (1.556)	5.09 (1.62)	5.19 (1.54)
	PEF2	It had less than planned concept to service launch time	5.11 (1.697)	5.02 (1.66)	5.07 (1.65)
Competitive advantage	CAD1	Satisfies clearly identified customers need	5.88 (1.075)	5.81 (1.10)	5.82 (1.12)
	CAD2	Solves important customers problem	5.69 (1.313)	5.66 (1.31)	5.67 (1.33)
	CAD3	It fulfilled the quality expectations	5.81 (1.043)	5.75 (1.09)	5.76 (1.10)
	CAD4	Our customers were very satisfied with this service	5.85 (1.093)	5.79 (1.07)	5.85 (1.04)
	CAD5	It generated an important competitive advantage for our organization	5.81 (1.278)	5.79 (1.23)	5.81 (1.25)
Market performance	MKP1	The new service exceed sales objectives	5.10 (1.617)	4.99 (1.69)	5.07 (1.60)
	MKP2	The new service exceed sales growth objectives	5.10 (1.474)	5.04 (1.55)	5.10 (1.43)
	MKP3	The new service exceed profit margin objectives	4.86 (1.626)	4.73 (1.68)	4.84 (1.59)
	MKP4	The new service exceed profitability objectives	4.92 (1.593)	4.79 (1.69)	4.88 (1.61)

5.3.1.2. Analysis of the quality of the scales

Prior to contrasting the hypotheses raised in chapter three, we assert that the scales used are suitable for measuring the concepts for which they are intended. For this, firstly an exploratory factor analysis was made for each of the scales in the first stage.

Secondly, a confirmatory factor analysis was carried out and finally, with the standardized weighting, the convergent and discriminant validity was evaluated.

To ensure the convergent and discriminant validity of the scales (Barclay, Higgins, and Thompson 1995), first of all, the measurement model was estimated using a confirmatory factor analysis with AMOS 21, using the maximum likelihood method and using the matrix of variances as input (Factor loading in Table 5.14).

Table 5.14. Model construct and Measurement Items

		Factor Loading
Service newness (Cheng and Krumwiede 2012)		
Idea generation: correlation coefficient= 0.479; CR= 0.664; AVE= 0.503		
Development: correlation coefficient= 0.404; CR= 0.664; AVE= 0.503		
Commercialization: correlation coefficient= 0.500; CR= 0.664; AVE= 0.503		
NEW1	The new service were totally new to the market	.592
NEW2	The new service offered new features versus competitive services	.810
Innovation Speed (adapted from Sethi 2000)		
Idea generation: Cronbach alpha= 0.911; CR= 0.905; AVE= 0.762		
Development: Cronbach alpha= 0.914; CR= 0.915; AVE= 0.783		
Commercialization: Cronbach alpha= 0.907; CR= 0.910; AVE= 0.772		
ISP1	Developed and launched faster than major competitors	.924
ISP2	Completed in less time than what was considered normal for industry	.770
ISP3	Launched ahead of the original schedule developed	.916
Project Efficiency (adapted from De Jong and Kemp, 2003)		
Idea generation: correlation coefficient= 0.768; CR= 0.869; AVE= 0.768		
Development: correlation coefficient= 0.727; CR= 0.843; AVE= 0.729		
Commercialization: correlation coefficient= 0.762; CR= 0.867; AVE= 0.766		
PEF1	It had less than planned new service development project costs	.879
PEF2	It had less than planned concept to service launch time	.874
Competitive advantage (De Brentani 1989)		
Idea generation: Cronbach alpha= 0.846; CR= 0.861; AVE= 0.557		
Development: Cronbach alpha= 0.826; CR= 0.764; AVE= 0.450		
Commercialization: Cronbach alpha= 0.825; CR= 0.762; AVE= 0.447		
CAD1	Satisfies clearly identified customers need	.689
CAD2	Solves important customers problem	.736
CAD3	It fulfilled the quality expectations	.876
CAD4	Our customers were very satisfied with this service	.802
CAD5	It generated an important competitive advantage for our organization	.597
Market Performance (Carbonell, Rodríguez-Escudero, and Pujari 2009)		
Idea generation: Cronbach alpha= 0.946; CR= 0.879; AVE= 0.647		
Development: Cronbach alpha= 0.945; CR= 0.878; AVE= 0.643		
Commercialization: Cronbach alpha= 0.940; CR= 0.885; AVE= 0.658		
MKP1	The new service exceed sales objectives	.853
MKP2	The new service exceed sales growth objectives	.832
MKP3	The new service exceed profit margin objectives	.960
MKP4	The new service exceed profitability objectives	.945
$\chi^2(94) = 205.68$ (p=0.00) $\chi^2 / g.l. = 2.89$ RMSEA = 0.08 CFI = 0.94 IFI = 0.94		

Before proceeding to a contrast of the hypotheses and once the one-dimensionality of the scales has been analyzed, it is necessary to assess their reliability and validity. Therefore, It has been to diagnose reliability through the calculation of Cronbach's

alpha (see Tables 5.14) SPSS. This coefficient of reliability assesses the consistency of the entire scale and it is the most commonly used measure (Hair et al. 2006). For all scales Cronbach's alpha is superior to 0.70, which proves their reliability.

The convergent validity has been evaluated according to the procedure proposed by Fornell and Larcker (1981), internal consistency (ρ_c or CR). Following the recommendations of Hair et al. (2006), this indicator must be above 0.6 for the reliability of the construct to be acceptable. Table 5.14 shows that the constructs model coefficients are equal to or greater than 0.70. In addition, it considers the values of average variance extracted (AVE), which must be above 0.5 (Hair et al. 2006). As can be seen from Table 5.14, this condition is also met for the model constructs.

With regard to the discriminant validity, it necessary to check that the scales measure different concepts. This condition is met if each latent variable shares more variance with their respective indicators than with other variables in the model. Therefore, it is necessary to verify that the square root of the average variance extracted (AVE) of each construct (diagonal of the Table 5.15, 5.16 and 5.17) is superior to the correlation that it has with the other constructs. Thus, each diagonal element should compare with all the elements that are both in the same row and in the same column. We note that this condition is also met.

Considering all the results obtained, we affirm that the measurement model is acceptable and it can be used to contrast the hypotheses proposed in this thesis.

Table 5.15. Psychometric properties and correlations between the variables in the idea generation model

	1	2	3	4	5	6	7
FLE involvement	n.a.						
CUS involvement	.331**	n.a.					
Newness	.179*	.144	.709				
Innovation speed	.069	.310**	-.137	.873			
Project efficiency	.123	.185*	.097	.379**	.876		
Competitive advantage	.315**	.371**	.218**	.325**	.402**	.746	
Market performance	.121	.197**	.017	.384**	.423**	.543**	.804

Diagonal: **square root of the average variance extracted**

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

Table 5.16. Psychometric properties and correlations between the variables in the development model

	1	2	3	4	5	6	7
FLE involvement	n.a.						
CUS involvement	.394**	n.a.					
Newness	.144*	.159*	.709				
Innovation speed	.090	.166*	-.141*	.885			
Project efficiency	.179*	.126	.009	.464**	.854		
Competitive advantage	.395**	.369**	.196**	.293**	.448**	.671	
Market performance	.092	.208**	-.010	.403**	.508**	.559**	.802

Diagonal: **square root of the average variance extracted**

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

Table 5.17. Psychometric properties and correlations between the variables in the commercialization model

	1	2	3	4	5	6	7
FLE involvement	n.a.						
CUS involvement	.338**	n.a.					
Newness	.279**	.268**	.709				
Innovation speed	.138	.088	-.154*	.879			
Project efficiency	.269**	.192**	.090	.359**	.875		
Competitive advantage	.373**	.397**	.201**	.264**	.349**	.669	
Market performance	.231**	.272**	.034	.318**	.388**	.598**	.811

Diagonal: **square root of the average variance extracted**

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

5.3.2. Common Method Bias

Most researchers agree that studies using a single informant are subject to common method bias. This bias can exist when a single informant values the independent and dependents variables in the study (Ayers, Dahlstrom, and Skinner 1997; Olson, Walker, and Ruekert 1995). Thus, this problem refers to the degree to which correlations between the variables are influenced, due to the effect of the method used.

However, according to Podsakoff, Shen, and Podsakoff (2006), the results showed a total of six factors that explain 77.998% of the total variance. The first factor explains only 19.069% of the total variance. In this way no single general factor can be identified, nor does the first factor explain most of the variance. This provides evidence that the common method bias is not a problem in our sample.

Furthermore, the variable mark technique of Lindell and Whitney (2001) was used. These authors propose a model of the common method variance in which the researcher must select an independent variable that, a priori, is not related to the model-dependent variable from the theoretical point of view. They named this variable, "marker-variable". For our study, we have selected as a marker-variable the "type of service". Actually in Tables 5.18, 5.19 and 5.20, we can check that the marker-variable correlation with the dependent variables of the model is not significant and that neither is it correlated with the rest of the explanatory variables. This demonstrates also, the discriminant validity of our marker-variable.

Additionally, these authors propose the correlations adjustment between the model constructs. For this, they apply the correction of the common method variance. In our case, the indicator used for this correction is $r = 0.056$ (this is the smallest positive correlation between the marker-variable and the model variables, see Tables 5.18, 5.19 and 5.20). After applying all of these steps and the formulas proposed by these authors, we find that the significant correlations between the variables of our model are maintained after the adjustment of the common method variance.

In summary, the results of these tests suggest that the common method bias does not affect our data interpretation.

Table 5.18. Correlations between the marker variable and the idea generation model variables

	TYPE OF DISTRIBUTION (marker-variable)
FLE involvement	0.056
CUS involvement	0.149*
Newness	-0.040
Innovation speed	-0.123
Project efficiency	-0.032
Competitive advantage	0.103
Market performance	0.109
Differentiation	0.154*
Firm size	-0.052

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

Table 5.19. Correlations between the marker variable and the development model variables

	TYPE OF DISTRIBUTION (marker-variable)
FLE involvement	0.083
CUS involvement	0.165*
Newness	0.002
Innovation speed	-0.137
Project efficiency	-0.005
Competitive advantage	0.148*
Market performance	0.137
Differentiation	0.174*
Firm size	-0.049

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

Table 5.20. Correlations between the marker variable and the commercialization model variables

	TYPE OF DISTRIBUTION (marker-variable)
FLE involvement	0.039
CUS involvement	0.173*
Newness	-0.028
Innovation speed	-0.122
Project efficiency	-0.019
Competitive advantage	0.174*
Market performance	0.132
Differentiation	0.158*
Firm size	-0.039

** The correlation is significant at 0.01 (bilateral) level.

* The correlation is significant at 0.05 (bilateral) level.

5.3.3. Findings and Discussion

In this section, after analyzing the scales of the model, the hypotheses that were proposed in Chapter 3 will be tested (H1. The involvement of FLE and CUS has a different impact on each performance dimension [innovation speed, project efficiency, competitive advantage and market performance] between each of the stages. H2. The involvement of FLE and CUS has a different impact on each performance dimension [innovation speed, project efficiency, competitive advantage and market performance] considering service newness). Taking into account the complexity of this section, we explore the effects of the involvement of the FLE and CUS in each of the stages separately. After this, we split up each stage on incremental and radical innovation

projects using the service newness median to view the effects of these stakeholders in each of the groups. For this first analysis we have used path analysis for each sample. Later, to compare the effects between stages, stakeholders and service newness, we use a hierarchical regression. In this complex and restrictive analysis we look at the differences in the involvement of FLE and CUS in each stage. Also, we demonstrate the effect that the involvement in each stage has on the others. And finally, we consider if the degree of SI project affects the involvement of the agents in the different performance dimensions.

Next, Tables 5.21 and 5.22 show the relationships obtained with their standardized coefficients and significance levels, in the different sample analyzed.

Table 5.21. Standardized parameters estimates

	Idea Generation (N=177)	Development (N=195)	Commercialization (N=201)
FLE → Speed	-0,04	0,04	0,12**
FLE → P. Efficiency	0,07	0,19***	0,23***
FLE → CA	0,22***	0,35***	0,27***
FLE → MK PERF	0,07	0,06	0,16**
CUS → Speed	0,32***	0,15**	0,05
CUS → P. Efficiency	0,16**	-0,06	0,12**
CUS → CA	0,30***	0,15**	0,31***
CUS → MK PERF	0,18**	0,11*	0,22***

*** p< 0,01; ** p<0,05; * p<0,10

* MK PERF (Market Performance) and CA (Competitive Advantage)

Table 5.22. Standardized parameters estimates considering the degree of service innovation

	Idea Generation (N=177)		Development (N=195)		Commercialization (N=201)	
	Incremental	Radical	Incremental	Radical	Incremental	Radical
FLE → Speed	-0,04	-0,02	0,08	0,03	0,25***	0,03
FLE → P.Efficiency	0,17**	-0,04	0,27***	0,10	0,22***	0,25***
FLE → CA	0,14*	0,30***	0,30***	0,37***	0,23***	0,31***
FLE → MK PERF	0,07	0,04	0,17**	-0,03	0,27***	0,06
CUS → Speed	0,37***	0,31***	0,22**	0,11	0,00	0,15*
CUS → P.Efficiency	0,18**	0,13*	0,05	-0,05	0,15*	0,08
CUS → CA	0,25***	0,33***	0,17**	0,11	0,29***	0,28***
CUS → MK PERF	0,11	0,24**	0,15*	0,08	0,16**	0,30***

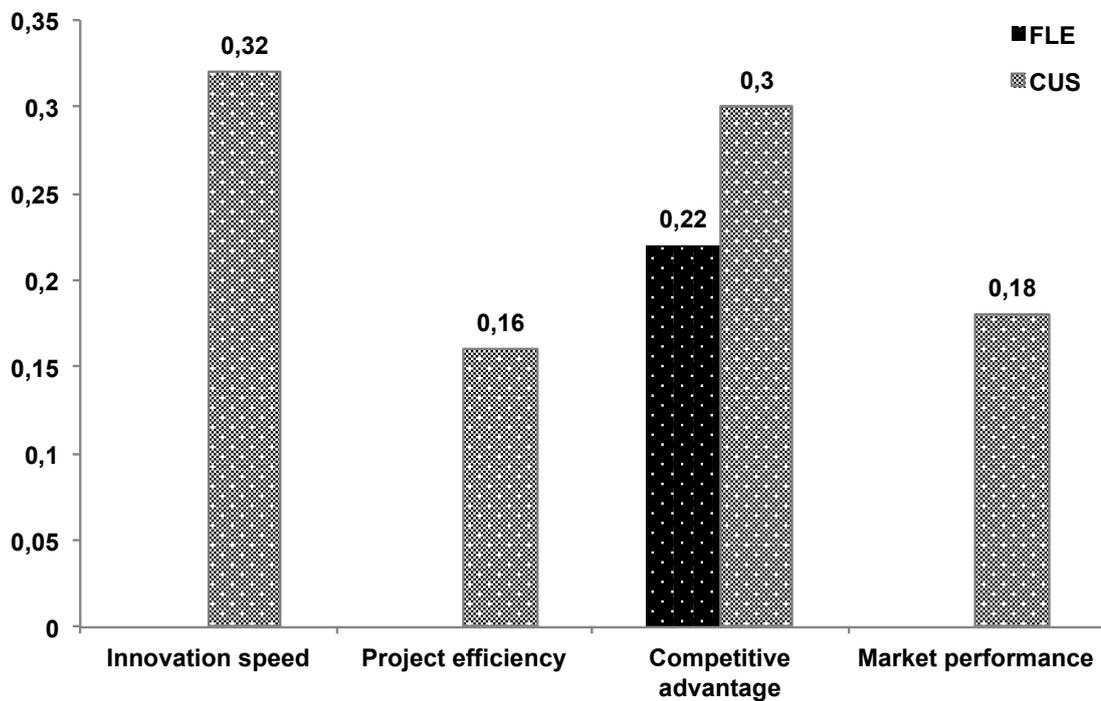
*** p< 0,01; ** p<0,05; * p<0,10

For a better analysis of the results and discussion, the models are presented separately (idea generation, development and commercialization models). Also, in the first part of the section, we are analyzing each stage using the following bar charts. On the X-axis is performance obtained for FLE and CUS in different dimensions (innovation speed, project efficiency, competitive advantage and market performance) and on the Y-axis the coefficients obtained from each of the relationships, 0 being the non-significant results. The lightest coloured bar refers to CUS involvement and the darkest bar to FLE involvement. Next, by separating each stage in incremental and radical projects, we use again the same type of bar chart. But in this case, on the X-axis of these bar charts, the different dimensions of the results are observed and on the Y-axis the coefficients obtained from the path-analysis. The lightest coloured bar refers to incremental innovation and the darkest bar to radical innovation.

Idea generation model

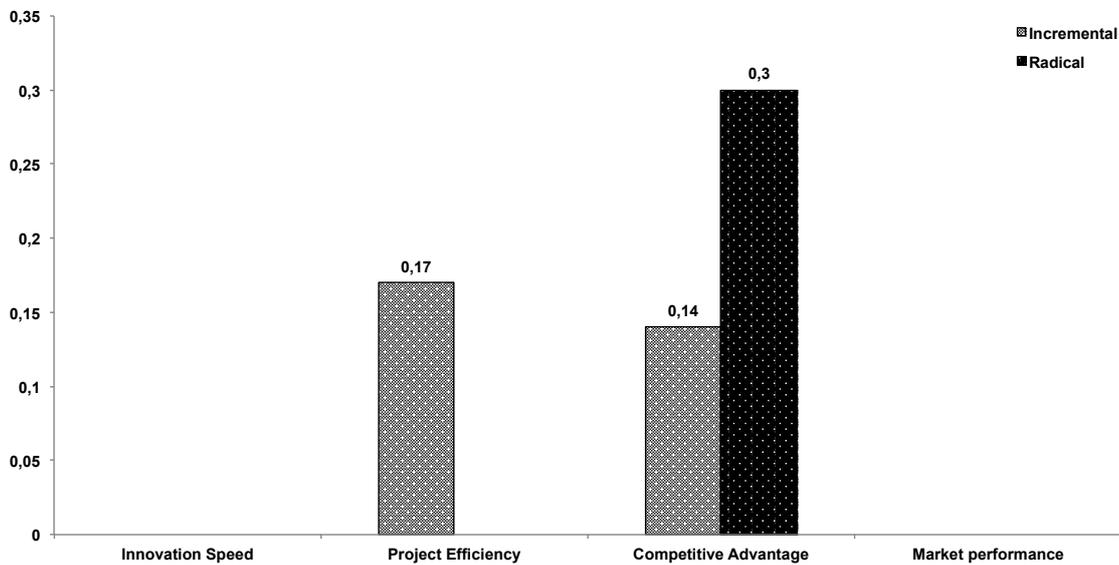
Despite its obvious importance to the ultimate success of a firm, the idea generation process is an area where scholars generally still have limited insights with regard to the “ideal” process. The key assumption behind that intuitive approach is that a firm’s professionals and users have the experience and expertise required to come up with truly novel and promising ideas that might be appealing to broader parts of the market and might therefore lead to successful new products (Ulrich 2007; Davila, Epstein, and Shelton 2012). A truly creative idea for a new product “is very often out of the scope of the normal experience of the consumer.” Thus, how attractive are new service ideas generated by CUS through a crowdsourcing process compared with new service ideas generated by FLE is a question that should be answered with reference to the following results.

Figure 5.6. Results of the involvement of frontline employees and customers at idea generation stage



As can be seen in this bar chart, the FLE involvement only has a positive impact in competitive advantage ($\beta=0.22$, $p<0.01$) while the CUS involvement has a positive impact in all of the performance dimensions (innovation speed, $\beta=0.32$, $p<0.01$; project efficiency, $\beta=0.16$, $p<0.05$; competitive advantage, $\beta=0.30$, $p<0.01$ and market performance, $\beta=0.18$, $p<0.05$). In the FLE involvement case, this effect is due to this stakeholder being an exclusive resource of the firm, thus the competition does not have access to it. On the other hand, the CUS involvement obtained better results because the firms tend to develop new services consulting the CUS at the idea generation stage.

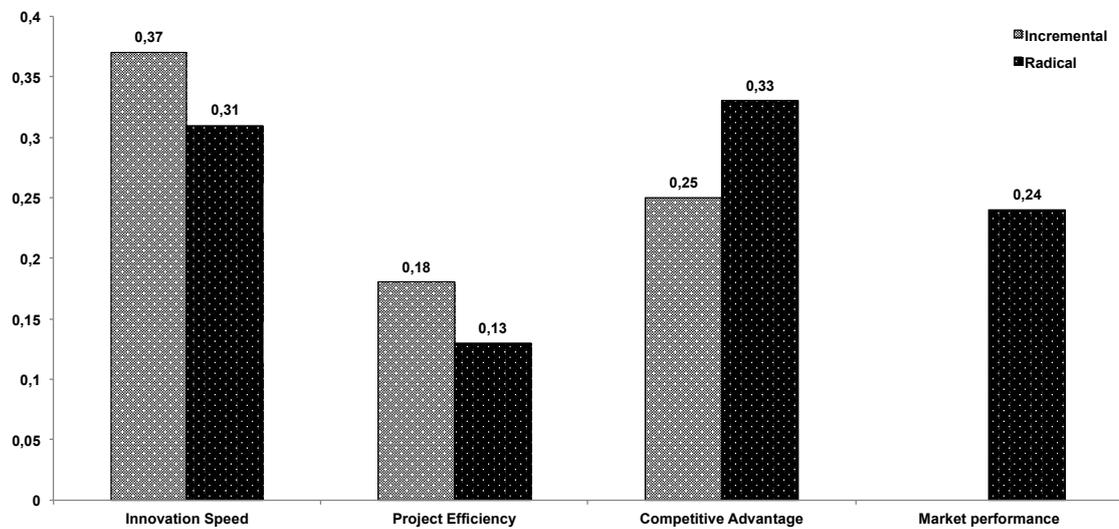
Figure 5.7. Frontline employees involvement in incremental and radical service projects at idea generation stage



The results obtained after separating this stage into incremental and radical SI project, show that FLE involvement has a positive impact on project efficiency ($\beta=0.17$, $p<0.05$) and competitive advantage ($\beta=0.14$, $p<0.10$) in incremental projects. In the case of radical innovation, their involvement is only positive in competitive advantage performance ($\beta=0.30$, $p<0.01$).

On the other hand, the involvement of the CUS in this stage is significantly positive in the success factors analyzed. In particular, it can be seen that the innovation speed ($\beta=0.37$, $p<0.01$), project efficiency ($\beta=0.18$, $p<0.05$) and competitive advantage ($\beta=0.25$, $p<0.01$) are improved with the CUS involved in incremental projects. Furthermore, CUS involvement has a positive impact on all of the service performance dimensions in radical projects (innovation speed, $\beta=0.31$, $p<0.01$; project efficiency, $\beta=0.13$, $p<0.10$; competitive advantage, $\beta=0.33$, $p<0.01$ and market performance, $\beta=0.24$, $p<0.05$).

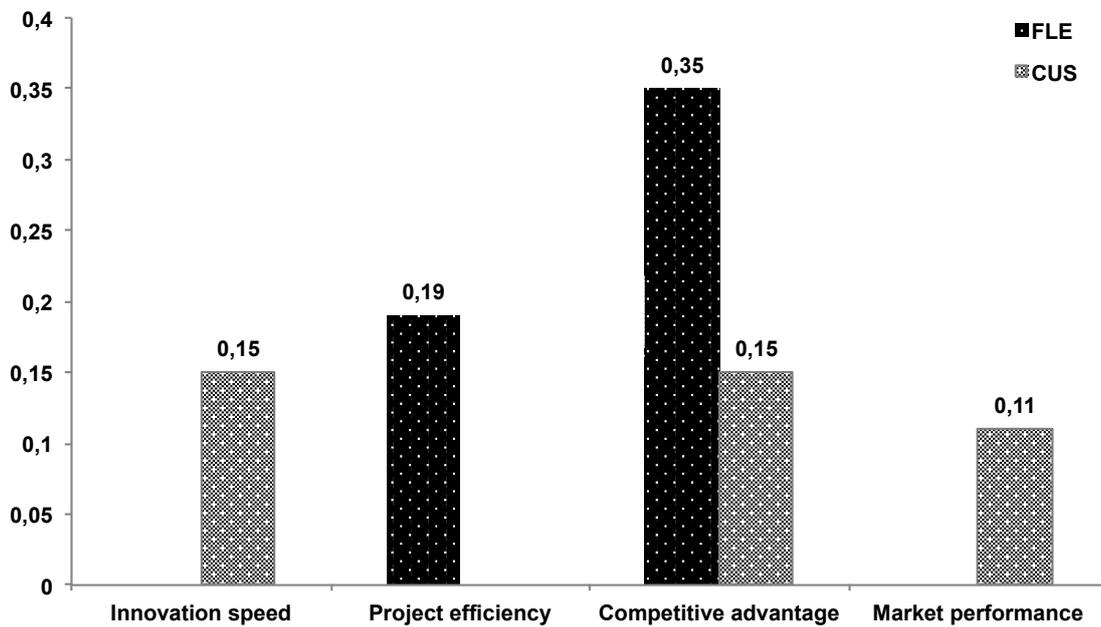
Figure 5.8. Customers involvement in incremental and radical service projects at idea generation stage



Development model

According to Alam (2002), this stage is defined as a phase which seeks to combine the service attributes identified earlier with their delivery process, develop documentation and final service design blueprinting, find out service delivery time, install, refine, and debug the service delivery mechanism. This level of complexity makes the involvement of FLE difficult and the CUS have positive effects on the firm in general. In fact, in this stage, a better qualification is needed as it is development staff who are carrying all the weight.

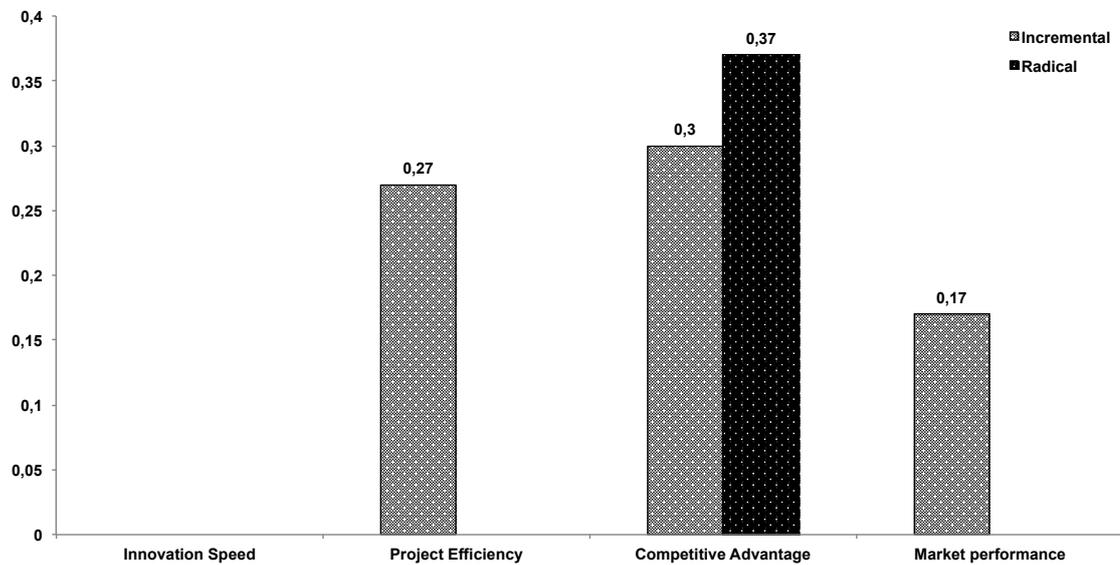
Figure 5.9. Results of the involvement of frontline employees and customers at development stage



As we have mentioned above, the complexity of this stage is a handicap for these actors. The FLE involvement only has a positive effect on project efficiency ($\beta=0.19$, $p<0.01$) and competitive advantage ($\beta=0.35$, $p<0.01$). Along the same lines, the involvement of the CUS in this stage is moderately positive for the innovation speed ($\beta=0.15$, $p<0.05$), competitive advantage ($\beta=0.15$, $p<0.05$) and market performance ($\beta=0.11$, $p<0.10$).

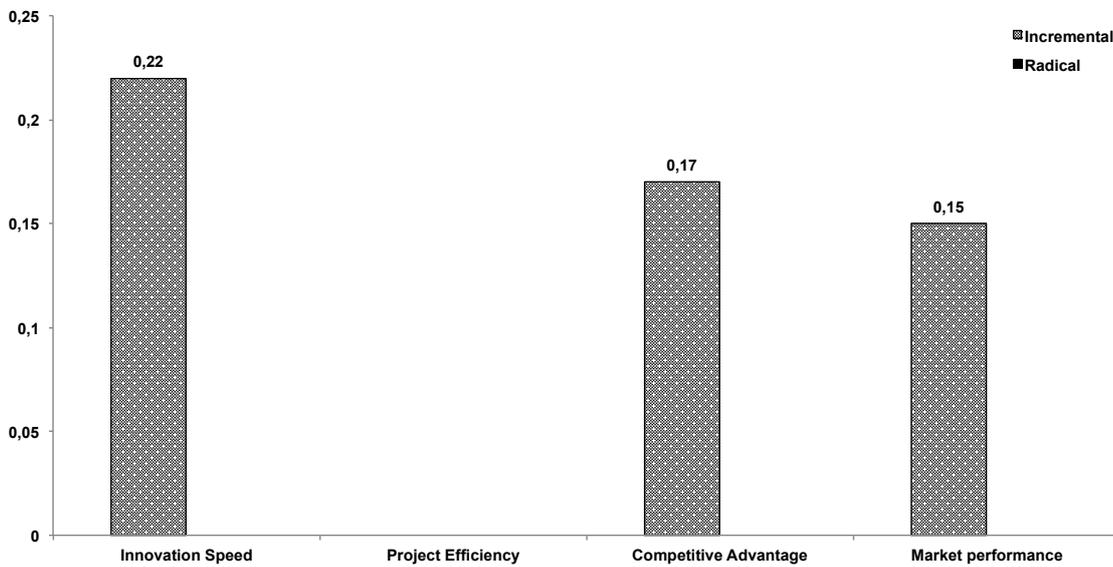
In spite of this, differences have been found between them and overall after separating them by the degree of SI. Indeed, a positive effect in radical projects is only found after the involvement of the FLE in competitive advantage ($\beta=0.37$, $p<0.01$). Likewise, we can see that the FLE involvement in this stage also has a positive impact on project efficiency, competitive advantage and market performance in incremental innovation projects ($\beta=0.27$, $p<0.01$; $\beta=0.30$, $p<0.01$; $\beta=0.17$, $p<0.05$). See the following figure.

Figure 5.10. Frontline employees involvement in incremental and radical service projects at development stage



Moving onto CUS participation, they play a crucial role in innovative projects. However, the results show that their involvement is not significant when speaking about radically new projects with no success indicators. As aforementioned, this is due to the fact that in this stage the qualification of the participants is determined because the service is changing to more complex and new. However, their involvement has a weak positive impact on innovation speed, competitive advantage and market performance in incremental projects ($\beta=0.22$, $p<0.05$; $\beta=0.17$, $p<0.05$; $\beta=0.15$, $p<0.10$).

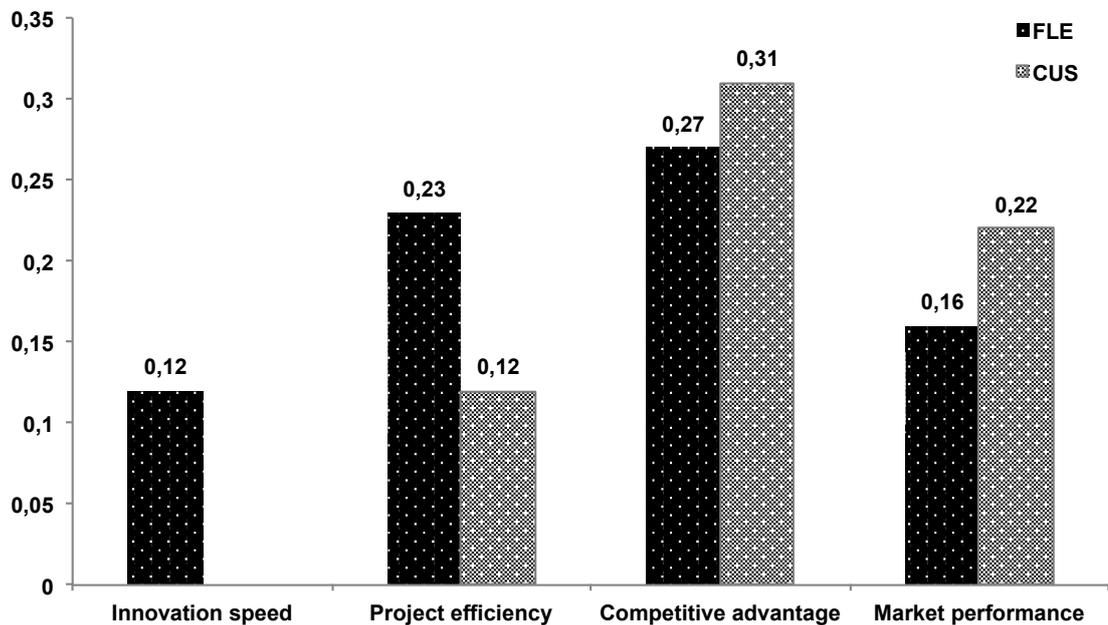
Figure 5.11. Customers involvement in incremental and radical service projects at development stage



Commercialization model

In the commercialization stage, the results are along the same lines as the recent literature which shows the importance of involving FLE and CUS (Alam 2002; Sundbo 2008; Cadwallar et al. 2010; Ordanini and Parasuraman 2011) and the contrasts to the recent study by Melton and Hartline (2013) which determines that the involvement of the FLE is not significant at this stage. However, in the final regression analysis, we also find new results to evidence that CUS involvement could have a negative impact on firm performance.

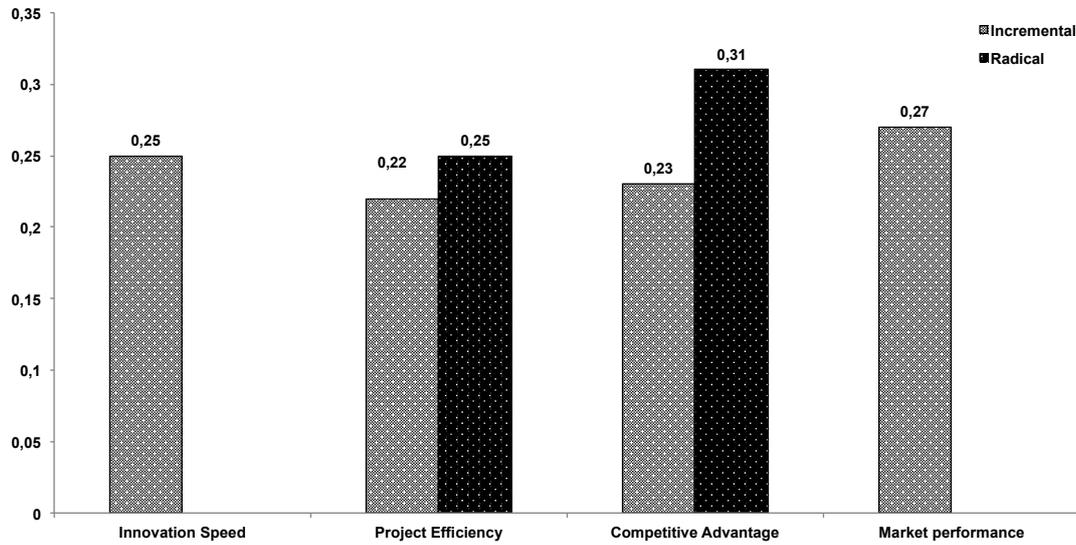
Figure 5.12. Results of the involvement of frontline employees and customers at commercialization stage



By analyzing in depth this stage, the results show that these actors are important in this final phase. In this step, the FLE involvement has a positive impact on all of the new service success dimensions. That is, by involving FLE in SI projects, the firm improves the innovation speed ($\beta=0.12$, $p<0.05$), project efficiency ($\beta=0.23$, $p<0.01$), competitive advantage ($\beta=0.27$, $p<0.01$) and market performance ($\beta=0.16$, $p<0.05$). In the same vein, CUS involvement has a positive impact on project efficiency ($\beta=0.12$, $p<0.05$), competitive advantage ($\beta=0.31$, $p<0.01$) and market performance ($\beta=0.22$, $p<0.01$).

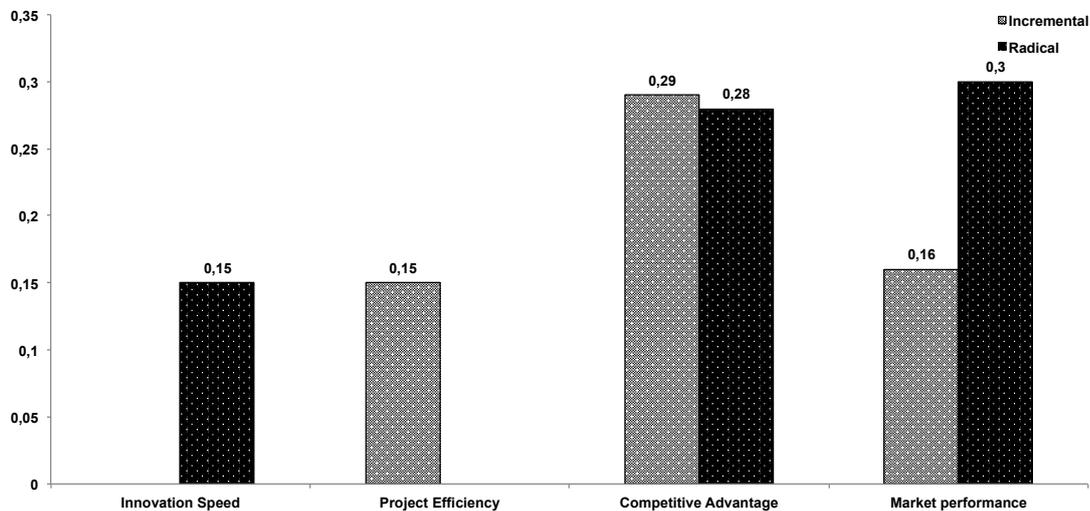
Separating the sample into incremental and radical innovation, the FLE results show that they also have an impact that is significantly positive in all the success dimensions (innovation speed, $\beta=0.25$, $p<0.01$; project efficiency, $\beta=0.22$, $p<0.01$; competitive advantage, $\beta=0.23$, $p<0.01$; and market performance, $\beta=0.27$, $p<0.01$) when talking about the incremental projects. In contrast, this influence is only positive in project efficiency ($\beta=0.25$, $p<0.01$) and competitive advantage ($\beta=0.31$, $p<0.01$) when the projects are radical.

Figure 5.13. Frontline employees involvement in incremental and radical service projects at commercialization stage



In the case of CUS involvement case, it can be observed that customers have a positive impact on project efficiency ($\beta=0.15$, $p<0.10$), competitive advantage ($\beta=0.29$, $p<0.01$), and market performance ($\beta=0.16$, $p<0.05$) in incremental projects. With regard to radical projects, it is shown that their involvement is significantly positive in innovation speed ($\beta=0.15$, $p<0.10$), competitive advantage ($\beta=0.28$, $p<0.01$) and very strong in market performance ($\beta=0.30$, $p<0.01$).

Figure 5.14. Customers involvement in incremental and radical service projects at commercialization stage



Considering this previous empirical analysis of different samples, we move to test the hypotheses proposed. For this, the resulting sign, size and significance of the standardized coefficients are examined to calculate the model using hierarchical regression.

Table 5.23 presents the results of the involvement of FLE and CUS by stage in each performance dimension. The interaction effects of the involvement of these stakeholders between combined stages can also be observed.

Since multicollinearity can pose problems when regressions are used to test theory, the variables were assessed using the variance inflation factor (VIF) measure. The mean VIF for the independent variables was 3.61, which suggests that multicollinearity is not a problem. All VIF values were below the threshold of 10 recommended by Hair et al., (2006).

The results of all of the regressions show that the four performance dimensions change depending on the stage where the FLE and CUS are involved. Thus, we can accept hypothesis H1 (a-c) and H2 (a-c).

The first regression evidence is that the involvement of FLE in the development stage is negative for innovation speed ($\beta=-0.27$, $p<0.10$ Model 1). But the FLE involvement in the commercialization stage when these actors have been involved previously in the development stage, reduces the negative effect of FLE involvement on the innovation speed in the development stage ($\beta=0.39$, $p<0.10$ Model 2). These results are really relevant because it is demonstrated that FLE involvement in the commercialization stage when they have participated in the development stage improves the process speed. Similarly, the exclusive FLE involvement in the commercialization stage is also positive to improve the speed of the NSD process ($\beta=0.26$, $p<0.05$ Model 1). In the CUS involvement case, their involvement only enhances innovation speed if they are involved in idea generation stage ($\beta=0.45$, $p<0.01$ Model 1). The other relationships are not significant for this performance variable.

To improve the project efficiency, in the second regression, the results show that the FLE involvement in the commercialization stage causes the service to have less than planned NSD project costs ($\beta=0.35$, $p<0.01$ Model 4). On the other hand, the CUS involvement decreases the project cost planned when they are involved in the idea generation stage ($\beta=0.23$, $p<0.10$ Model 4). It is also interesting to note that the CUS involvement, when they are already involved in idea generation stage, improves the service project efficiency ($\beta=0.29$, $p<0.05$ Model 5). It should be stressed that this only happens when the CUS have been involved previously in the idea generation stage and not in the development stage separately. In contrast, by incorporating CUS in the commercialization stage when they have been involved in the idea generation stage increases the planned cost. So, this involvement is negative to project efficiency ($\beta=-0.38$, $p<0.05$ Model 5).

In the third regression, it can be seen that only the involvement of FLE in the development stage has a positive impact on the competitive advantage ($\beta=0.45$, $p<0.01$ Model 7). As we have mentioned in the first exploratory results, the exclusivity of this resource not available to the competition, generates a higher value in this stage. Furthermore, it is worth noting that CUS involvement only increases the competitive advantage when they are involved in more than one stage. Particularly, they enhance it when they are involved in idea generation and the development stage ($\beta=0.44$, $p<0.01$

Model 8). In contrast, as occurred with project efficiency, CUS involvement has a negative effect in competitive advantage when the CUS are involved in idea generation and the commercialization stage ($\beta=-0.39$, $p<0.01$ Model 8).

Finally, the fourth regression presents the effects of the involvement of FLE and CUS in market performance. In this case, the CUS involvement only gets positive and significant results with this dependent variable. Specifically, CUS involvement improves the financial results of the firm when they are involved in the commercialization stage ($\beta=0.19$, $p<0.10$ Model 10). Additionally, they have a positive influence on market performance when they are involved in idea generation and the development stage ($\beta=0.35$, $p<0.01$ Model 11). This reveals that CUS involvement is not significant when they are involved in idea generation and the development stage separately. They have to be involved in both stages to get positive results.

Table 5.24 presents the results of the interaction effect, on the performance dimensions analyzed, of the service newness in the involvement of FLE and CUS in each of the NSD stages.

Since multicollinearity can pose problems when regressions are used to test theory, the variables were assessed using the variance inflation factor (VIF) measure. The mean VIF for the independent variables was 2.71, which suggests that multicollinearity is not a problem. All VIF values were below the threshold of 10 recommended by Hair et al., (2006).

In the first regression hierarchical level, the same results as the above regression can be seen. For this reason, it will not be explained again. In this analysis, we focus on the moderating effect of service newness in the different relationships between FLE and CUS in the different performance dimensions. The results show a unique significant result (H3e is supported). Model eight evidences that service newness reduces the effect between FLE involvement and market performance. Although it is found to be a significant result, it is clear that service newness is not significant in the involvement of the FLE and CUS by stage (H3d and H4d-e are not supported).

These findings shed light on the contradictory literature about the appropriated role of the involvement of FLE and CUS in the NSD at the early stages (Ottenbacher, Gnoth, and Jones 2006; Melton and Hartline 2010; Ordanini and Parasuraman 2011). For example, while several scholars note that customers do not represent a useful source of information in the early phases of the NSD (Veryzer 1998), others argue that new services are best developed through early and in-depth involvement of the CUS (Neale and Corkindale 1998; Melton and Hartline 2010). In this study, CUS involvement leads to improved results in firms at an early stage in all performance dimensions via different combinations. But by the CUS being present at an early stage as a source of information for the company, the FLE involvement is not significant when the CUS are present. Some authors consider the FLE' participation as an important resource for generating ideas because they are in direct contact with the CUS (Scheuing and Johnson 1989; Cadwallar et al. 2010; Ordanini and Parasuraman 2011). However, this study shows that CUS presence diminishes attention from the FLE, this latter participation becoming insignificant for the firm at this stage.

To follow, we present an outline of some of the reasons behind these findings. First, the firm considers the CUS involvement as a key asset in making decisions when they contribute to a new service. Second, the FLE involvement as a source for generating ideas in CUS presence is not significant for the firm's outcomes. Due to the fact that the firm already has a suitable information source to achieve the objectives, which has been labeled at this stage, the FLE involvement does not influence the NSD process.

As we have said, due to the intricacy of this stage, it is important to explore and find solutions for a better understanding of the involvement of FLE and CUS at the development stage. Above all, the complexity in the involvement of non-technical agents in this stage is an important barrier to overcome. According to Sundbo (2008)

the complexity of a radical project, i.e., a totally new service to the market makes the significance of FLE and CUS lower at this stage by their lack of knowledge of it.

There have been several authors who have said that the involvement of FLE is not positive at this stage (Sundbo 2008; Melton and Hartline 2010) and other authors have shown that their involvement is not significant (Ottenbacher, Gnoth, and Jones 2006). But in this thesis it is demonstrated that the FLE involvement has a positive impact in two situations. Firstly, their influence is positive to improve the competitive advantage. Secondly, although their influence is negative to innovation speed when they are only involved in this stage, their involvement becomes positive by involving them in the subsequent commercialization stage. FLE are part of the firm and they are very familiar with the firm's processes corporate culture, and the strategic and project aims. For this reason, they improve the innovation speed by being involved in both stages. In fact, they are key stakeholders in the commercialization stage for innovation speed and project efficiency, because they are the ones who deliver the service. Also they can review and jointly develop the blueprints, suggest improvements by identifying fail points and observe the service delivery trial. Therefore, the involvement of FLE is relevant in this stage. On the other hand, it can be seen that the coefficients in the previous path analysis are very low and weakly significant in the new service success dimensions. Hence, the findings bring about new knowledge in this controversial field (Melton and Hartline 2010; Wittel et al. 2011; Gustafsson, Kristensson, and Witell 2012). Our results shed light on these relationships. In the regression analysis, it can be noted that the weak significant effects of path analysis have been lost in all the dependent variables, while we have found that CUS involvement in the development stage when they are involved previously in the idea generation stage improves the levels of project efficiency, competitive advantage and market performance. Therefore, we can consider that CUS involvement is only positive for the firm if they had previously been involved in the idea generation stage. In sum, this interaction effect has evidenced the service useful experience of these two stakeholders to improve their involvement in this stage. This previous experience has determined their involvement.

Finally, most important is that the market accepts the innovation. For this reason, when it comes to a new service project in the market, the FLE and CUS involvement is critical at the commercialization stage (Santos-Vijande, López-Sánchez, and Rudd 2015). In this stage, it is important that the FLE understand and accept the service, because after that they may have to teach the CUS to adopt and use it (Edvardsson, Tronvoll, and Gruber 2011). In the same vein, the new service must be of good quality

when delivered to the CUS, so if they do not understand and accept the new service, there will be too many quality problems (Karlsson and Skålén 2015). In contrast with previous stages, in this stage the participation of FLE is also important because a new service implies a new form of market behavior. In addition to what has previously been provided by the literature in this field, this study highlights the importance of FLE involvement for the internal results of the firm. Although in the hierarchical regression the positive results in competitive advantage and market performance are lost, we contribute by strengthening the innovation speed and project efficiency results. Furthermore, we add that the FLE involvement at this stage when they have previously been involved in the development stage, improves the project innovation speed. Further, CUS involvement improves the firms outcomes too, by examining the saleability of the new service, commenting and giving feedback on various aspects of the marketing plan, adding detailed comments about their satisfaction with marketing mixes and suggesting desired improvements (Salunke, Weerawardena, and McColl-Kennedy 2013). Also, the CUS are used to testing and launching new services by the firms (Carbonell, Rodriguez-Escudero, and Pujari 2012).

In line with previous studies, in the hierarchical regression, we find that CUS involvement in the commercialization stage has a positive impact on market performance. However, this study shows that it must be careful with CUS involvement at this stage. The results demonstrate that CUS involvement in this stage may be negative for the firm if previously they have been involved in the idea generation stage. Specifically, their participation at this stage would increase the planned costs and diminish the competitive advantage since they are using the same CUS to generate the idea as for testing and launching the service subsequently, so its contribution could be skewed.

CHAPTER 6
CONCLUSIONS,
MANAGERIAL
IMPLICATIONS, LIMITATIONS
AND FUTURE RESEARCH

In this chapter we present the main academic and business conclusions that our research generates. Following that, we show the limitations and future research lines that arise as a consequence of the results obtained.

CONCLUSIONS

This thesis aims to deepen the study of FLE combined with CUS involvement in SI projects. The literature review developed in the first two chapters highlighted the importance of SI, including the participation of FLE and CUS as a determinant of the firm's competitiveness, exploring in addition their involvement determinants. Also, we examine the special relevance to carrying out a NSD process by stages and the difficulty that is found in incorporating these actors together in each of the process stages.

We have found that most of the papers published to date study the involvement of these actors separately, which has led to a big research field being developed on CUS involvement in SI FLE involvement being given far less attention. Only recently the works of Melton and Hartline (2010; 2015) and Ordanini and Parasuraman (2011) have approached empirically a study of the impact of FLE and CUS together in the success factors of SI. However, they did not present any conclusive results. Therefore, in this context, new researches are required to deepen their examination of the above-mentioned relationships. It is necessary to establish clear conclusions in regard to their antecedents, their involvement jointly and their effect on the different project results. To do this we have undertaken a preliminary exploratory study and a quantitative study.

We considered it appropriate to undertake an exploratory study because the literature on the involvement of FLE and CUS in the same project is almost non-existent and there is a need to identify the key factors relating to them in this field. Thus, in Chapter three of this thesis we presented the results of our exploratory study based on in-depth interviews, allowing us to strengthen the approach of the hypothesis and establish the foundations for the quantitative study. Among the main findings we can highlight that the companies recognize the key role played by FLE and CUS as relevant sources of information for the firm for creating, developing or launching new or modified services to the market. Therefore, the interaction between these stakeholders and their information integration have been evidenced by respondents as crucial elements to

take into account in new service projects. Consequently, we analysed the firms' strategies that could facilitate their involvement in SI projects. These are innovative culture and EO. Also, we have been able to detect the importance of personal factors of these actors as success determinants of their involvement in new service projects.

Based on a systematic and exhaustive search and analysis of the literature, and after conducting the 12 in-depth interviews, we proposed a theoretical model that aims to answer several questions grouped into three parts: 1. What are the factors that determine the involvement of FLE and CUS in SI?; 2. What is the effect of involving FLE and CUS keeping in mind the degree of SI project? And what is the role of information integration in these relationships?; 3. Is it really important to integrate FLE and CUS in all of the stages of the NSD process? And what happens if we consider the degree of SI project?

In the first part (H1-H16), the hypotheses about the relationships between the antecedents (strategic factors of the firm and personal factors) and the involvement of FLE and CUS were proposed. The second part (H1-H5) is focused on the relationships between the involvement of FLE and CUS in competitive advantage, considering the degree of SI and their information integration. The third section (H1_{a-c}-H2_{a-c} and H3_{d-e}-H4_{d-e}) deepens the analysis of the impact of FLE and CUS in the different performance dimensions, taking into account the stage in which they are involved and the degree of SI.

Then, we carried out an empirical study and after a complex and laborious data evaluation, 231 innovative companies belonging to different sectors were identified. We used an online questionnaire for the collection of information using the web platform of the research team that supports this thesis. From this collection of information, we have empirically contrasted the theoretical model in three parts, and the majority of the assumptions we had made were validated.

Firstly, the results obtained enabled us to verify the impact on the involvement of FLE and CUS on project performance, although this impact depends on several factors. This influence has been studied in the service literature separately in the past but we can find few studies, which explore the joint effects. In this way, we can say that an effective management of both these stakeholders has a positive influence on the final performance of the new service. Next, we summarize additional interesting effects by the parties mentioned above.

PART I. What are the factors that determine the involvement of frontline employees and customers in service innovation?

The results obtained in the empirical contrast confirm the role of strategic factors of the firm and the personal factors of FLE and CUS in the involvement. On the one hand, it is corroborated that the innovative culture influences the involvement of FLE. In addition, we have found that this strategy encourages the OID of these employees. On the other hand, it is weakly confirmed that EO influences the involvement of FLE and CUS. Even so, we can conclude that the innovative culture and EO are firm strategic factors that facilitate the involvement of FLE and CUS in SI. Furthermore, these strategies have a greater impact on the OID of the FLE and CUS, being the major influence on the CUS OID.

With regard to the personal factors, the findings shed light on the determinants that most influence the involvement of FLE and CUS. In particular, OID is confirmed as a determinant factor of behavior with regard to the involvement of FLE and CUS. Specifically, OID is confirmed as an important behavior factor of their involvement. This influence is greater in FLE involvement than in CUS involvement. In fact, the innovative culture influence in FLE involvement is mediated by the OID of FLE. In the case of personality factors, we can conclude that they are the determinants which more greatly affect the involvement of FLE and CUS. Specifically, individual creativity and the degree of openness to experience are two key factors that influence the involvement of both the FLE and CUS. In addition, we have found that personality factors have a greater influence on the CUS than on the FLE. In this case, personal factors of the FLE may be influenced by the firm's strategies, as we have noted in the Chapter 5. Finally, we conclude that the personality of the FLE, individual creativity and his degree of openness to experience, also influence on the involvement of the CUS. But in the case of the CUS personality, only their individual creativity is a determinant of FLE participation. In this way it is also revealed that the interaction between these two actors should be taken into account when the firm wants to develop a new service.

PART II. Comparing the effect of frontline employees and customers in service innovation. Is it really important to integrate them keeping in mind the degree of service innovation project?

As we have discussed in this thesis, FLE and CUS are sources of relevant information for carrying out innovative service projects. However, this research found some

scenarios where the involvement may be not beneficial for the firm when CUS and FLE are participating together. Therefore, this raises the question of whether involvement of these two actors always leads to obtaining better results for the company, or more exactly if the involvement of FLE and CUS improves competitive advantage.

In the first step, without any additional influence in the involvement of the FLE and CUS, we can determine that their participation is considered an improvement of competitive advantage of the firm. In addition, the results show that the FLE has greater influence when they are involved jointly with CUS. But bearing in mind the literature review, the service newness of the project must be considered to optimize the resources that are to be used. Therefore, in spite of the initial results showing a positive effect from both stakeholders, the service newness changes the influence completely. Specifically, the service newness affects the involvement of FLE and CUS. While a higher degree of novelty reinforced positively the involvement of the FLE, in the CUS this influence is negative. In others words, the positive influence that the CUS played in terms of competitive advantage is affected negatively if the project has a high degree of novelty. It is for this reason that we can conclude that the degree of SI plays a key role in the involvement of FLE and CUS.

This research goes a step further by attempting to explain and resolve this negative relationship between service newness and CUS involvement. As a result, we consider information integration between these stakeholders to improve the negative impact mentioned above. At this point the research sheds light on this phenomenon through the results obtained. It concludes that greater information integration between FLE and CUS enhances the negative effect of the service newness on CUS involvement regarding competitive advantage. In summary, we can conclude that the successful involvement of the FLE and CUS in SI projects depends on service newness and the level of information integration, especially in the case of the CUS.

PART III. Exploring the effects of frontline employees and customers in new service development processes. What role does each stage in the involvement of frontline employees and customers performance play? Is it relevant to consider the service newness on the involvement of frontline employees and customers in each of the NSD stages?

In general, we can conclude that the involvement of FLE and CUS on a new service has a different impact depending on the stage at which they are involved. In particular,

we contribute to the NSD literature by introducing the effect that a stage might have on others. Additionally, we analyse the moderating effect of the degree of SI in each stage, because some differences in the results appeared. Moreover, new performance dimensions are used as new critical success factors (innovation speed, project efficiency and competitive advantage). We have undertaken a thorough analysis of the impact of the involvement of FLE and CUS in a multidimensional performance in each NSD stage.

Specifically, we can assert that the involvement of these actors has different results depending on the stage of the NSD process in which they are involved. This is due to the characteristics of these actors and the influence that the involvement into one stage could influence another. This leads us to think that the involvement of these stakeholders must be selective. In the FLE case, we can conclude that their involvement in the development stage lessens innovation speed but increases competitive advantage performance. In the latter case, this is due to these actors being the firm's own resources, i.e. the competition does not have them. This situation allows the firm to improve their competitive position in the market when launching new services. Also, we can establish that the FLE involvement in commercialization when they have been involved previously in the development stage improves the service project speed. But it is not only the FLE involvement, which is positive in this case. Their involvement is also considered positive for improving project efficiency. At the same time, it is concluded that in the idea generation stage when the FLE is in the same project as the CUS, FLE influence is non-existent. In the in-depth interviews, some managers expressed that on some occasions the ideas that move the FLE are attributed by them. Also, they showed that the CUS ideas of CUS had more bearing than the ideas of FLE in the idea generation stage. For this reason, in the CUS case, the results show that their involvement in the idea generation stage is very positive for the firm. Their involvement enhances all of the performance dimensions. This positive influence is not always achieved, however, when the CUS are involved only in the idea generation stage. On the one hand CUS involvement in the idea generation stage improves innovation speed and project efficiency. On the other hand, to obtain a greater competitive advantage and better market performance, the CUS must be incorporated into the development and idea generation stage. Although, some managers mentioned in the in-depth interviews that a higher level of technical knowledge is most needed in this stage, the experience and knowledge acquired in the idea generation stage helps their successful involvement in the development stage.

Contrary to the results found in previous literature, we can conclude that CUS involvement in the commercialization stage when they have participated in idea generation of the same project is negative for the firm. Firstly, their involvement increases the planned cost of the service project and secondly, their involvement decreases the competitive advantage of the firm. In the first case, it is merely a matter of increasing planned costs since the stages are not consecutive in the time. In the second case, it is due to the fact that it is not good for the firm testing or launching the service with the same CUS that have helped to generate the idea of the service. In this stage, the firms are looking for a target audience which is more representative of the market that they are going to focus on. Finally, we highlight that CUS influence is directly positive to improve the firm's market performance in the commercialization stage.

Further, we also conclude that the degree of SI is not decisive in relation to the involvement of FLE and CUS in each of the NSD stages. Based on the regression results we can conclude that a higher level of service newness negatively influences FLE involvement to obtain better market performance. In the remainder of the performance variables, the moderating effect of service newness is not significant.

In sum, we can conclude that although many researchers have focused on FLE and CUS as success factors for new services development (Carbonell, Rodríguez-Escudero, and Pujari 2009; Melton and Hartline 2010; van der Heijden et al. 2013), this thesis has carried out an exhaustive analysis in each stage of the NSD process. This has never been done before on the involvement of the FLE and CUS together, constituting the originality of this research. This study has considered four different dimensions for measuring NSD success in each of the process stages. It also presents a detailed analysis of each of the stages and the influence between them and finally, we took into account the degree of service novelty.

MANAGERIAL IMPLICATIONS

One of the fundamental motivations of this thesis has been to establish useful recommendations for the firms to develop new services through the involvement of FLE and CUS.

In a process as complex as SI, due on the one hand, to the difficulty that the companies have in innovating and, on the other, to the intangible component of the transaction, the use of valuable resources is absolutely crucial for the firm. Therefore, the first model will help the firms discover some of the factors that determine the involvement of these key players. The CEO allows the firm to set up two strategic lines (innovative culture and EO) that will help them to create a business philosophy based on the continuous improvement of the service from the involvement of these agents. In addition, the adoption of these strategies will increase the level of OID of FLE and CUS. In the same vein, OID will be a determinant of their incorporation into the NSD process. The human resources department will be also able to select the most suitable candidates to be involved in a SI project by analyzing the personality factors (individual creativity and openness to experience). In this way, this pattern can have strong implications for Business-to-Business sales professionals and clients. It suggests that managers will not derive a substantial benefit from simply matching salespeople and buyers randomly. Instead, managers may be able to improve their sales force's performance by hiring salespeople with the similar OID and personality factors to the clients' to identify potential areas of internal similarity and training them to foster innovative projects between them for the firm.

When comparing the influence of the participants in the new service project in part II, we find that FLE have a substantially stronger positive effect on competitive advantage than CUS do. Consequently, managers should not only work with CUS to develop a new service or modify the firm's services but also pay particular attention to training and motivating FLE for effective participation in the new service project. Furthermore, the managers should take into account the degree of novelty of the service before incorporating the FLE and CUS in each project, because a higher level of novelty means greater complexity. In this thesis, the results obtained help project managers to consider that the involvement of the CUS in a radical project has a negative impact on the firm's performance. However, FLE in this type of service project is a valuable asset. Then, with these outcomes not only is the problem of involving CUS in radical service projects demonstrated, but also, we recommend a solution to firms for CUS involvement which will be less damaging to the firm. That is, if the firm promotes the flow of information between FLE and CUS through meetings or creating information channels, this will help the ideas exchange based on the information presented by each of them and it will create a facility for receiving information from other more specialized departments. In this case, CUS involvement will provide better results for the firm.

Part III is, perhaps, the part that has greater managerial implications because of how we focus on each development stage of a new service. Firstly, by combining FLE and CUS involvement in the NSD process, service firms can produce different results such as innovation speed, project efficiency, competitive advantage and financial performance, depending on the stage that the FLE and CUS are involved. Therefore, bearing in mind the performance of each stage, this thesis will help the managers to form appropriate teams for each stage of the NSD process. For example, considering that in the idea generation stage, the companies are looking for new ideas through probing CUS' needs, wants, and preferences and their choice criteria (likes and dislikes), CUS involvement is crucial at this stage. The CUS can help by presenting his stated needs, critiquing the existing service, eliminating weak concepts and providing a wish list (service requirements). Thus, the firms in the NSD idea generation stage should identify unmet consumer needs, generate new service ideas, identify service concepts with the greatest profit potential, and define the desired benefits, features and rationale for purchase of the new service. However, in the development stage, firms should be careful with the involvement of FLE and CUS, because the involvement success happens in few performance dimensions and cases. In this situation, the firms could link the development staff with the FLE and CUS so that the technical information absence does not become a barrier to involvement. Additionally, the firm needs to know the CUS reactions or opinions before the launch. This is why CUS reactions to service prototypes enable developers to refine the service in a way that achieves unique and superior value as perceived by the target market. Furthermore, in the commercialization phase, firms should involve FLE via NSD team meetings and other means to thoroughly train and motivate them to effectively promote and deliver the new service. This effort is important, as well-prepared CUS-contact employees will positively affect CUS perceptions of the brand, service quality, speed of the process and project efficiency. In contrast, we find that by involving CUS in the NSD process when they are previously involved in the idea generation stage, service firms cannot produce good results in project efficiency and competitive advantage. However, as opposed to part II, managerial implications cannot be drawn considering the degree of service newness in each of the NSD stages.

In sum, these results show the firm, which is the best stage to involve FLE and CUS depending on the different performance aims of the firm. Finally and in broad terms, we can say on the one hand, that CUS involvement should be considered in the idea generation stage and on the other hand in the development stage when they have been involved in the idea generation yet. In the case of FLE involvement, they should

be involved in the commercialization stage or in the development stage to improve the firm's competitive advantage.

LIMITATIONS

As any research work this thesis is not exempt from any limitations, of which we are aware.

Before commenting on the limitations we believe it is necessary to point out that, although there are many studies that indicate the importance of the involvement of FLE and CUS separately, there are very few studies that have analyzed their impact from the joint and empirical view. This has required us to use some concepts which we have adapted. This is the case of the personal factors where we have used the same scales for FLE and CUS. Thus, we have sought theoretical and empirical support in the few studies that have explored these relationships. Also, the in-depth interviews have been employed to ascertain the support for these relationships. For all of these reasons, we are aware that there is a need to develop theoretically and empirically these antecedents in greater depth to provide precise dimensioning and greater methodological rigor.

Nevertheless, we must not forget that we are asking about activities that in many firms are not well defined and which are complex and uncertain. Consequently, one can speculate whether respondents actually were able to remember faithfully the data and the circumstances around the involvement that we asked them. Given that this study is based on retrospective data, this issue is relevant and should be considered to properly evaluate the contribution of this research study.

Specifically, the limitations of this thesis are mainly related to the definition of the object contrast model – that is, with the fact that some variables and not others have been introduced in the model – with the informant identification, with the constructs measurement using the information provided by the single firm member and with the sample used for contrasting the empirical model proposed. Overcoming these limitations is the future research line that we propose.

The model contrasted empirically is not as complete as we would like. In fact, in order not to build an excessively complex model, we have excluded from the thesis a group of variables that could be considered relevant background for the involvement of FLE and CUS. These omitted aspects relate to the company's strategy (for example, market acuity) and operational aspects (such as task formalization) during the NSD process. In addition, we have not used CUS loyalty generated by this involvement as a preliminary result of the process. Moreover, it would be interesting to look at the environment conditions in which these activities were carried out. For example, aspects related to market turbulence, competitive intensity or technological change. Without doubt, the incorporation of these and other variables should provide a more complete explanation of the background and the involvement results of these players.

Another possible limitation of the thesis comes from the person who answered the questionnaire. Our aim was that the respondents were the person in charge of the new service selected. For this reason, we incorporated this requirement previously in the mail as well as the questionnaire instructions. In this way, we tried to identify the person that we were looking for. In fact, we have evidence of in many cases this identification being carried out in several phases: in the first step, the person who received the mail assessed if he/she was the suitable person, after that he/she could respond or forward the email to the right person. In addition, we would leave open the possibility that several people who perform these tasks within the firm would respond to our questionnaire within the same company but they had to choose a unique SI project. Nevertheless, in spite of these precautions we are aware of that it would have been useful to confirm with the CEO, and even the FLE and CUS themselves, who was involved in the project. Indeed, in this way the possibility of an attribution bias would have completely disappeared. Even so, we have tested that they are the key informants who have a high knowledge of the service, the FLE and CUS involvement and the SI project results. Definitively, they have had a high involvement in the idea generation, development and commercialization of the service. In our favor is the fact that the key informant who could correctly describe the phenomenon (Weiss and Heide 1993) was considered and their perceptions are accepted generally acceptable and valid (Schwenk 1985).

Related to the above-mentioned section, we are also mindful that it would have been highly valuable to gather information from the FLE and CUS themselves who participated in the SI project. However, being a multi-sectorial study for which we were requesting a huge amount of information and for which we were pressured in regards

to the need to get a big enough sample, the use of multiple informants in each company was very complicated. However, we are aware that multiple informants would have been very useful to assess the response reliability received and offer a more enriching perspective. Nevertheless, the single factor of the Harman test reveals no evidence that a common factor distorts the responses provided by a single informant in each service project. Furthermore, the results of the analysis made using the Lindell and Whitney (2001) technique around the brand variable, suggest that the statistical procedure used to control the common method bias were adequate. In sum, that bias does not affect the interpretation of our results.

On the other hand, as we have noted, we opted for a multi-sectorial sample in our thesis. In making this decision we sacrificed the internal validity by obtaining a higher external validity. We are conscious that data collection from a single sector contributes to providing a greater internal validity to the research results by having a greater control over the variation of external sources from the sector characteristics (McDougall and Robinson 1990; Spekman and Gronhaug 1986), but at the same time it makes the generalizability of the results difficult.

In addition, due to the huge difficulty in obtaining company data, only information about a new service project developed by the firm was obtained. But it was not necessary for this project to have been either successful or unsuccessful into the market. In this sense, we know that there is a trend to select the most successful projects (Herstatt, Verworn, and Nagahira 2004).

FUTURE RESEARCH

In addition to the improvements identified in the thesis limitations, we consider several ways to improve this research. Firstly, we propose general lines of future research and secondly, we further explore each of the parts.

In the first place, the limitation of a single informant could be overcome with a triadic analysis. There is a strong interest in testing these relationships from the FLE and CUS perspectives. Especially, it would be interesting to achieve a better measurement and understanding of the antecedents that determine the involvement of these agents in SI projects. Additional research is needed to further refine the involvement of FLE and

CUS, and better understand how the non-linear, synergistic interactions of these actors engender knowledge, creativity, learning and value outcomes in the NSD process. Also, the analysis of the potential negative effects of involving FLE and CUS simultaneously in terms of perceived workload, organizational conflict, confidence, conflict of interests between them, loyalty and service performance, also deserve the attention of future research efforts. We need to understand to a greater extent, which variables are the key drivers and which costs are the greatest inhibitors of involvement. Likewise, to achieve a more holistic knowledge about the involvement of FLE and CUS, it would be advisable to carry out a longitudinal study to establish a clear relationship between the involvement of these stakeholders and their results. This would confer greater validity to the results obtained and it would establish clearer recommendations for management in the NSD process.

Specifically in part I, we suggest exploring the interaction effects between the strategic factors of the firm and the personal factors in the involvement of FLE and CUS. Also, it would be valuable to explore the possible quadratic relations between personality factors and their involvement. In the same line, we propose deepening research into the moderating effects of personal factors between the involvement of FLE and CUS and new service success factors.

In regard to the negative effect of CUS involvement, it would be interesting to explore in depth the effect of CUS involvement in a SI project when the FLE is already involved in it. In this sense, it would be necessary to explore what role the FLE plays in CUS involvement. On the other hand, the relationships in part II could be examined in a B2B vs. B2C context. Bearing in mind the peculiarity of these relationships, the effects might change depending on each environment.

Finally, part III is the area with a major study potential because of the key gap in the literature and its complexity. Therefore, studies that attempt to shed light on the stages of the NSD process would be considered interesting in this field. Specifically, we set out to explore the potential impact provoked by the antecedents of involvement of these actors in each stage of the process. In this way, it would be possible to demonstrate which are the most important factors in stakeholder involvement and the results at each stage. In the same vein, it is to be expected that each agent would present different success involvement determinants at each stage.

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ANNEXES

ANNEX I
LITERATURE REVIEW ABOUT
SERVICE INNOVATION

Table AI.1. Initial topics in open innovation phase

OFFERING DEVELOPMENT	Firm-level approach to designing and developing an offering. How to generate ideas and formalize them as concrete offerings
STRATEGY AND MANAGEMENT	Higher level of service innovation management issues related to the firm's overall strategy and marketing strategy
ORGANIZING	Managing of service innovation personnel and organizational structure
POLICY	Contributions to general discussions about the nature and theory of what service innovation is and its specific characteristics
MEASUREMENT	Investigation and development of methods for measuring service innovation performance or service innovation impact
CUSTOMER INVOLVEMENT	Means of involving customers in the service innovation process
REVIEW	Summaries of previous research in different forms of reviews
DEPLOYMENT	The later phase of service innovation; launching, selling, pricing, delivery, and implementation issues.
SERVICE PROFIT	How to create profitable service innovation
OTHER	Articles that did not fit into any of the other topic categories

Table AI.2. Final topics in open innovation phase

OFFERING DEVELOPMENT	Firm-level approach to designing and developing an offering. How to generate ideas and formalize them as concrete offerings
STRATEGY AND MANAGEMENT	Higher level of service innovation management issues related to the firm's overall strategy and marketing strategy
ORGANIZING	Managing of service innovation personnel and organizational structure
POLICY	Contributions to general discussions about the nature and theory of what service innovation is and its specific characteristics
MEASUREMENT	Investigation and development of methods for measuring service innovation performance or service innovation impact
CUSTOMER INVOLVEMENT	Means of involving customers in the service innovation process
REVIEW	Summaries of previous research in different forms of reviews
DEPLOYMENT	The later phase of service innovation; launching, selling, pricing, delivery, and implementation issues.
SERVICE PROFIT	How to create profitable service innovation
OTHER	Articles that did not fit into to any of the other topics
OPEN INNOVATION	Open Innovation means that valuable ideas can come from inside or outside the company and can go to market from inside or outside the company as well
FRONTLINE EMPLOYEE INVOLVEMENT	Means of involving frontline employees in the service innovation process
DIGITAL	The role of new technologies in on-line environments and social networks in the services innovation
TRANSFORMATIVE SERVICE RESEARCH	This concept lies at the intersection of service research and transformative consumer research and focuses on well-being outcomes related to service and services.

Table A1.3 Service innovation article frequency by topic and year

	1986	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
OFFERING DEVELOPMENT	1	1			4	1		1	1	1	1			1	3	2	3	1	2	5	9	11	10	8	6	44
STRATEGY AND MANAGEMENT						2		2		2			1	4	1	1	2		2	6	13	6	14	7	4	44
ORGANIZING						1	1		1				2	3	1	3	1	1	3	2	2	11	6	2	4	25
POLICY		1			1		1	1				1					1	2	3	2	3	6	8	11	2	30
MEASUREMENT			1				1				1				2	1	1		2	3	8	3	4	4	3	22
CUSTOMER INVOLVEMENT										1	1	1	1	2		2		1	3	1	12	15	6	12	2	47
REVIEW								1								1		2	3		3	4	3	4	1	15
DEPLOYMENT																1			3	2	4	3	3	3		13
SERVICE PROFIT																		2	1	1	2	2	6	2		12
OTHER																			3	1	1	2	8	7	1	19
OPEN INNOVATION																					7	9	16	23	12	67
FRONTLINE EMPLOYEE INVOLVEMENT																					3	4	5	5	6	23
DIGITAL																					7	7	1	1	2	18
TRANSFORMATIVE SERVICE RESEARCH																					1	1	4	6	5	17
TOTAL	1	2	1	0	5	4	3	5	2	3	3	2	4	10	7	11	8	9	25	23	75	84	94	95	48	524

Table A1.4. Service innovation article frequency by journal and year

	FORMATION PHASE										MATURITY PHASE					MULTIDIMENSIONAL PHASE					OPEN INNOVATION PHASE								
	1986	1992	1993	1995	1996	1997	1998	1999	2000	TOTAL	2001	2002	2003	2004	2005	TOTAL	2006	2007	2008	2009	2010	TOTAL	2011	2012	2013	2014	2015	TOTAL	
SERVICE RESEARCH											11						14						35						147
SIJ			1		1	1	1		1	5	1		1	3		5		2	2	4	6	14	18	13	18	5	11	65	
JOSM				3					2	1			1	3	1	5	1			3	3	7	5	8	9	6	9	37	
JSR										0		1	1	2		4				3	3	6	4	5	1	6	3	19	
JSM										0						0				3	2	5	2	4	1	3	4	14	
MSQ										0						0			1	2		3	2	3	1	6		12	
INNOVATION											8						9						28						74
RP	1			1		2	1			5		1	1	1		3	2		2	2	2	8	4	4	5	8	2	23	
JPIM					2				1	3	2		1	1		4	3		1	2	2	8	6	4	4	6	2	22	
T										0				2		2	1	2	2	4	1	10	2	7	1	3		13	
RDM										0						0		1	1			2	3	5	4	3	1	16	
GENERAL MARKETING											1						1						4						51
JAMS							1			1		1				1			1	1	2	1	1	3	3	1		9	
EJM										0						0	1					1	3	2	2	3	3	13	
IJRM										0						0	1					1	4	4	2	3		13	
JCR										0						0						0				1		1	
MS										0						0						0		2		1		3	
JMR										0						0						0	1	1	1	1		4	
JM										0						0						0	2	6				8	

Table AI.4. Service innovation article frequency by journal and year (continuation)

	FORMATION PHASE										MATURITY PHASE					MULTIDIMENSIONAL PHASE					OPEN INNOVATION PHASE								
	1986	1992	1993	1995	1996	1997	1998	1999	2000	TOTAL	2001	2002	2003	2004	2005	TOTAL	2006	2007	2008	2009	2010	TOTAL	2011	2012	2013	2014	2015	TOTAL	
B2B MARKETING											1						0						4						56
IMM	1										1						0	1	1				2	9	2	9	6	3	29
JBBM											0						0	1	1				2	1		1	1	3	
JBIM											0						0						0	2	1	3	16	2	24
OTHER BUSINESS											5						2						1						49
TFSC	1										2	1					1	1					1	3	2	3	1	1	10
JBR	1 1										3	1					1						0	3	4	20	9	3	39
ECONOMICS											0						0						4						19
JEE											0						0	1 2					3	1		3	2	6	
ICC											0						0	1					1	1	3	2	1	1	8
RIW											0						0						0	1		1	1	2	5
TOTAL	1	2	1	5	4	3	5	2	3	26	3	2	4	10	7	26	11	8	9	25	23	76	75	84	94	95	48	396	

ANNEX II
IN-DEPTH INTERVIEWS
PROTOCOL

ANNEX II. GUIDE TO CONDUCTING THE IN-DEPTH INTERVIEWS

QUESTIONS FOR THE PERSONS IN CHARGE OF THE NEW SERVICE DEVELOPMENT

The basic intention of this study is to bring us closer to firms that innovate in services. To do this, we intend to establish a clear differentiation between two target audiences:

- **Service firms (G1)**
- **Product firms that also launch new services (G2)**

On the one hand, services can improve the chances of any manufacturing or tertiary product. On the other hand, the services themselves need to be competitive.

The interactions between services and the rest of the economic sectors are strong. In fact, without dynamic and well established financial mechanisms, communications, distribution or transport, it is difficult to run the general economic system efficiently.

1. INTRODUCTION, CHARACTERIZATION AND CONTEXTUALIZATION

- Explaining the research aims.
- The conversation must begin with the allusion to the most successful service that the interviewee or the company has contributed.
- Commenting the service innovation concept
 - Why is innovation important in your firm?
 - Why are services important in your firm?

 - Could you define what service innovation is for you?
 - What role do services play in your company? Do you think that they increase the value of your company? If so, to what extent do?
 - What are the main services that increase the value of your company?

2. SERVICE INNOVATION (explaining that service innovation is a change or improvement in the firm's services)

- What impact does service innovation have on the service quality?
- To what extent does service innovation improve the innovative activity of the company (products, services, processes, management)?
- To what extent does service innovation lead to higher customer satisfaction?
- To what extent does service innovation lead to a higher innovation speed in the launch stage?
- To what extent does service innovation lead to a better design of your services?

3. THE INVOLVEMENT OF FRONTLINE EMPLOYEES AND CUSTOMERS.

- What are the roles of frontline employees and customers in your company?
- In what stage of the NSD process are the frontline employees and customers more involved?
- What type of relationship do the frontline employees and customers have with the firm? Are they collaborating with you? Are they involved on an occasional basis? Do they collaborate in the service design? Do they send suggestions to the company?
- Why do you think that the involvement of frontline employees and customers is important in NSD process?
- What are the success factors to take into account for involving frontline employees and customers in the service innovation project?

4. RESULTS OF SERVICE INNOVATION.

- What are the internal results that your company obtains after carrying out a NSD process?
- What are the internal results that your company obtains after involving the frontline employees and customers in service innovation projects?
- Does service innovation increase customer satisfaction, profitability, margin, sales volume, competitive advantage or other performance variables?
- Does the involvement of frontline employees and customers increase customer satisfaction, profitability, margin, sales volume, competitive advantage or other performance variables?

SUMMARY OF THE MAIN QUESTIONS

1. How important is service innovation in your company? Could you tell us how you carry out your services innovation projects?
2. Where do the ideas arise to improve the services? Could you describe a specific case?
3. What role does the innovative culture of the firm play in a new service? Is there some particular mentoring process?
4. What is the role of frontline employees and customers in developing a new service?
5. Does the firm have mechanisms to gather the information from frontline employees and customers? How is it the information processed? Do they have some incentive to innovate in services?
6. What role do the frontline employees play in the involvement of the customers? And vice versa?
7. In regard to the internal results of the firm, what results reflect the service innovation projects within the company? And also, what about the involvement of the frontline employees and customers in the internal results?
8. In regard to the firm's market performance, in which results is service innovation reflected (market share, sales, benefits, margin, costs, etc.)? And also, what can you say about the involvement of the frontline employees and customers in these results?

ANNEX III
PERSONALIZED E-MAIL

ANNEX III. PERSONALIZED E-MAIL SENT TO ENTERPRISES

Estimado/a Sr./Sra. XXXXXXX:

A pesar de que en muchas de las economías más desarrolladas los servicios llegan a ocupar el 75% del PIB, el diseño y desarrollo de nuevos servicios ha sido una actividad poco tratada por la investigación académica.

Somos un equipo de investigación integrado por profesores de diversas universidades españolas y extranjeras con una dilatada experiencia en el estudio de **la innovación de productos y servicios**. En la Web <http://www.imasdmasmk.es> puede encontrar al equipo, un panorama de los resultados de nuestras investigaciones, y que le pueden ser de gran utilidad si usted toma decisiones en el campo de la innovación de producto y servicio.

Actualmente estamos desarrollando un proyecto encaminado a analizar la **innovación de servicios a través de la participación del empleado y el cliente desde su gestación hasta su lanzamiento**. De todos los involucrados en este proceso, queremos contactar con la persona que ejerce un papel activo promoviendo/configurando el desarrollo de los nuevos servicios. Si no es usted la persona que lleva a cabo estas acciones le rogamos redirija este correo a dicha persona.

Si su empresa si ha desarrollado un proyecto de innovación en servicios en los últimos 3 años, por favor, inscribese en la web anteriormente citada (correo electrónico y password) y le rogamos rellene la encuesta. Tan sólo le llevará unos 13 minutos.

Todas las personas que respondan al cuestionario recibirán un **obsequio** (valorado hasta 25€) y tendrán **acceso al informe** con los resultados de esta investigación.

Esta investigación está financiada por el **Ministerio de Economía y Competitividad** y la información recogida será analizada de forma **anónima y global**. Si precisa de cualquier aclaración, por favor, contacte con nosotros.

Murcia, a 1 de abril de 2014.

Su ayuda es fundamental para avanzar en la investigación y queremos agradecerle su colaboración a la vez que aprovechamos para ponernos a su disposición.

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En cumplimiento de la **Ley Orgánica 15/1999**, de 13 de diciembre, de **Protección de Datos de Carácter Personal**, le informamos que los datos personales que nos suministre a través de la página web www.imasdmasmk.es, serán tratados de forma confidencial.

ANNEX IV
ONLINE QUESTIONNAIRE

ANNEX IV. DEFINITIVE QUESTIONNAIRE PRESENTED ON THE HOMEPAGE



UNIVERSIDAD DE MURCIA
CENTRO DE ORGANIZACIÓN E INVESTIGACIÓN DE MERCADOS

ESTUDIO SOBRE LA INNOVACIÓN DE SERVICIOS A TRAVÉS DE LA PARTICIPACIÓN DEL EMPLEADO Y EL CLIENTE

Antes de comenzar a rellenarlo debe tener en cuenta que no existen respuestas correctas o incorrectas, sólo nos interesa saber su opinión sobre cada una de las cuestiones que le planteamos. Toda la información que nos facilite será analizada globalmente, de forma confidencial y anónima. También es necesario que tenga en cuenta que necesitamos que seleccione **un nuevo servicio en el que hayan participado clientes y empleados**. Cuando hablamos de **empleados**, nos referimos a los empleados que están en **contacto directo con el cliente**.

En primer lugar, nos gustaría conocer ciertas características generales acerca de cómo su empresa aborda el desarrollo de nuevos servicios:

En relación a su sector, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Nuestro sector se caracteriza por una elevada competencia en precios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
En nuestro sector los servicios son difíciles de imitar	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
En nuestro sector los clientes no son sensibles a pequeños aumentos del precio	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Las empresas de nuestro sector ofrecen servicios muy especializados	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
En nuestro sector cada empresa intenta diferenciarse ofreciendo servicios únicos	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Nuestros servicios son difíciles de imitar por nuestros competidores	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●

Nuestra empresa se caracteriza por:

	Desacuerdo	Acuerdo
La tendencia a realizar las adecuadas actividades de planificación estratégica	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La habilidad para identificar necesidades y deseos de los clientes	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La insistencia en hacer nuestra visión de negocio una realidad	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La habilidad para identificar nuevas oportunidades de negocio	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
El diseño de los nuevos servicios a partir de la información obtenida del mercado	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La búsqueda activa de información sobre el mercado	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La utilización de la información del mercado para adaptarse a los cambios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
La utilización de los clientes como fuentes potenciales de nuevas ideas valiosas	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●

En relación con la cultura de la empresa, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Nuestra organización anima a realizar esfuerzos emprendedores y asume los riesgos derivados de ello	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Nuestra organización se basa en un fuerte compromiso con la innovación y el desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Nuestra organización anima a los empleados a incorporarse en actividades de nuevos servicios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Las recompensas son un medio para reconocer los esfuerzos de los empleados en el desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●

En relación al grado de formalización del proceso de desarrollo de nuevos servicios de su empresa, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Se emplean procesos formalizados para desarrollar nuevos servicios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Las etapas del proceso de desarrollo de nuevos servicios están formalizadas	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Se planifican todos los nuevos servicios siguiendo una secuencia fija de actividades	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●
Se emplean recursos y procedimientos estándar en el desarrollo de los nuevos servicios	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●

Progreso: Siguiente

SELECCIÓN DE UN NUEVO SERVICIO

A partir de este punto, es **IMPORTANTE** que seleccione un nuevo servicio que su empresa haya lanzado al mercado en los últimos tres años (desde 2010), no es preciso que haya tenido éxito en el mercado. Dicho servicio ha de cumplir las siguientes dos características:

1. Que Ud. haya tenido una participación y contribución decisiva
2. Que hayan participado empleados y clientes en el desarrollo del mismo.

Tenga en cuenta que algunos de los ejemplos de participación de empleados y clientes en el proceso de desarrollo de nuevos servicios en la empresas son los siguientes: **entrevistas personales con empleados y clientes, observación de los empleados y de los clientes, grupos de discusión, buzón de sugerencias, encuestas de satisfacción, CRM, etc.**

Por favor, describa brevemente el servicio seleccionado:

Software de análisis de tendencias de innovación entre el empleado de primera línea y el cliente, bajo la supervisión de responsable del proyecto

En relación al nuevo servicio seleccionado, valore su grado de conocimiento sobre:

	Poco	Mucho
Este servicio	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados que participaron en el proceso de desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
Los clientes que participaron en el proceso de desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
El proceso de desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>

En relación a la innovación en el servicio seleccionado, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
El nuevo servicio fue una modificación o revisión de un servicio ya existente en la empresa	<input type="radio"/>	<input checked="" type="radio"/>
El nuevo servicio fue el reposicionamiento de un servicio ya existente en la empresa	<input type="radio"/>	<input checked="" type="radio"/>
El nuevo servicio era totalmente diferente en el mercado	<input type="radio"/>	<input checked="" type="radio"/>
El nuevo servicio ofrecía nuevas características en comparación con los servicios de la competencia	<input type="radio"/>	<input checked="" type="radio"/>
El servicio requería cambios en el comportamiento de compra del cliente (por ejemplo, en la forma de comprarlo o de utilizarlo)	<input type="radio"/>	<input checked="" type="radio"/>

Los principales departamentos (o unidades equivalentes) implicados en el proceso de desarrollo del nuevo servicio fueron (puede señalar todos los que participaron activamente):

I+D
 Administración/Finanzas
 Producción
 Compras
 Marketing
 Recursos humanos
 Dirección General
 Ventas
 Otros

Señalé que etapas ha seguido su empresa en el desarrollo del nuevo servicio seleccionado:

Generación de ideas
 Diseño/Desarrollo
 Prueba/Test
 Lanzamiento

En relación a los empleados y clientes que participaron en el proceso de desarrollo del nuevo servicio, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Los empleados y los clientes compartieron información entre ellos	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados y los clientes se prestaron atención en las decisiones del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados y los clientes intercambiaron ideas en base a la información expuesta por cada uno de ellos	<input type="radio"/>	<input checked="" type="radio"/>
La información de otros departamentos ayudó a empleados y clientes a realizar el proyecto conjuntamente	<input type="radio"/>	<input checked="" type="radio"/>

Progreso: Siguiente

encuesta / datos y selección de regalos

DETERMINANTES DE LA PARTICIPACIÓN DE LOS EMPLEADOS EN EL PROCESO DE DESARROLLO DEL NUEVO SERVICIO

En relación a la participación de los empleados en el proceso de desarrollo del nuevo servicio, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
GENERACIÓN DE IDEAS		
Los empleados tuvieron una participación alta	<input type="radio"/>	<input checked="" type="radio"/>
La frecuencia de las reuniones y consultas con los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	<input type="radio"/>	<input checked="" type="radio"/>
La implicación de los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
DISEÑO / DESARROLLO		
Los empleados tuvieron una participación alta	<input type="radio"/>	<input checked="" type="radio"/>
La frecuencia de las reuniones y consultas con los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	<input type="radio"/>	<input checked="" type="radio"/>
La implicación de los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
PRUEBA / TEST		
Los empleados tuvieron una participación alta	<input type="radio"/>	<input checked="" type="radio"/>
La frecuencia de las reuniones y consultas con los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	<input type="radio"/>	<input checked="" type="radio"/>
La implicación de los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
LANZAMIENTO		
Los empleados tuvieron una participación alta	<input type="radio"/>	<input checked="" type="radio"/>
La frecuencia de las reuniones y consultas con los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	<input type="radio"/>	<input checked="" type="radio"/>
La implicación de los empleados fue alta	<input type="radio"/>	<input checked="" type="radio"/>

En relación a los empleados que estuvieron relacionados con el desarrollo del nuevo servicio, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Demostraron originalidad en el proceso de desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
Generaron ideas nuevas y operativas relacionadas con el nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
Se enfrentaron de forma creativa a los problemas que surgieron en el desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados que participaron en el proceso de desarrollo del nuevo servicio se sentían identificados con la empresa	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados con más experiencia en la empresa participaron más en el desarrollo del nuevo servicio	<input type="radio"/>	<input checked="" type="radio"/>

En relación a los contactos de los empleados, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Los empleados tenían contactos con nuestros clientes	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tenían contactos con los proveedores relacionados con el servicio de la empresa	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados tenían contactos con otros agentes distintos a los mencionados anteriormente (Consultorías, organismos públicos, universidad, centros tecnológicos, etc.)	<input type="radio"/>	<input checked="" type="radio"/>
Los empleados compartían ideas con personas ajenas a la empresa (amigos, familiares, etc.)	<input type="radio"/>	<input checked="" type="radio"/>

Imagine que el círculo  representa la forma de ser o identidad de su empresa, y el otro círculo  representa la de sus EMPLEADOS. Marque la opción que mejor describa la relación que hay entre las dos identidades, la de su empresa y la de sus empleados.

1	2	3	4	5	6	7
						
						

Progreso:  Siguiente

encuesta / datos y selección de registros

DETERMINANTES DE LA PARTICIPACIÓN DE LOS CLIENTES EN EL PROCESO DE DESARROLLO DEL NUEVO SERVICIO

En relación a la **participación de los clientes en el proceso de desarrollo del nuevo servicio**, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
GENERACIÓN DE IDEAS		
Los clientes tuvieron una participación alta	● ● ● ● ● ● ● ●	
La frecuencia de las reuniones y consultas con los clientes fue alta	1 1 1 1 1 1 1 1	
Los clientes tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	
La implicación de los clientes fue alta	1 1 1 1 1 1 1 1	
DISEÑO / DESARROLLO	Desacuerdo	Acuerdo
Los clientes tuvieron una participación alta	● ● ● ● ● ● ● ●	
La frecuencia de las reuniones y consultas con los clientes fue alta	1 1 1 1 1 1 1 1	
Los clientes tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	
La implicación de los clientes fue alta	1 1 1 1 1 1 1 1	
PRUEBA / TEST	Desacuerdo	Acuerdo
Los clientes tuvieron una participación alta	● ● ● ● ● ● ● ●	
La frecuencia de las reuniones y consultas con los clientes fue alta	1 1 1 1 1 1 1 1	
Los clientes tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	
La implicación de los clientes fue alta	1 1 1 1 1 1 1 1	
LANZAMIENTO	Desacuerdo	Acuerdo
Los clientes tuvieron una participación alta	● ● ● ● ● ● ● ●	
La frecuencia de las reuniones y consultas con los clientes fue alta	1 1 1 1 1 1 1 1	
Los clientes tuvieron un papel fundamental en las reuniones y consultas con el equipo de desarrollo de nuevos servicios	● ● ● ● ● ● ● ●	
La implicación de los clientes fue alta	1 1 1 1 1 1 1 1	

En relación a los **clientes que estuvieron relacionados con el nuevo servicio**, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Demostraron originalidad en el proceso de desarrollo del nuevo servicio	● ● ● ● ● ● ● ●	
Generaron ideas nuevas y operativas relacionadas con el nuevo servicio	1 1 1 1 1 1 1 1	
Se enfrentaron de forma creativa a los problemas que surgieron en el nuevo servicio	● ● ● ● ● ● ● ●	
Los clientes que participaron en el proceso de desarrollo del nuevo servicio se sentían identificados con la empresa	1 1 1 1 1 1 1 1	

En relación a los **contactos de los clientes**, valore su grado de acuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Los clientes tenían contactos con nuestros empleados	● ● ● ● ● ● ● ●	
Los clientes tenían contactos con los proveedores de la empresa	1 1 1 1 1 1 1 1	
Los clientes tenían contactos con otros agentes distintos a los mencionados anteriormente (Consultorías, organismos públicos, universidad, centros tecnológicos, etc.)	● ● ● ● ● ● ● ●	
Los clientes compartían ideas con personas ajenas a la empresa (amigos, familiares, etc.)	1 1 1 1 1 1 1 1	

En relación a los **clientes que participan en el proceso de desarrollo del nuevo servicio**, valore su grado de acuerdo o desacuerdo con las siguientes afirmaciones:

	Desacuerdo	Acuerdo
Realizaban la mayor parte de sus compras a nuestra empresa	● ● ● ● ● ● ● ●	
Cuando tenían que contratar algún servicio pensaban en nuestra empresa como primera opción	1 1 1 1 1 1 1 1	
En los próximos años siguieron contratando los servicios con nuestra empresa	● ● ● ● ● ● ● ●	

Imagine que el círculo ○ representa la forma de ser o **identidad de su empresa**, y el otro círculo ● representa la de sus **CLIENTES**. Marque la opción que mejor describa la relación que hay entre las dos identidades, la de su empresa y la de sus clientes.



CARACTERÍSTICAS GENERALES

Para finalizar, le vamos a realizar algunas preguntas generales sobre su empresa.

¿Cuál es el sector industrial en el que opera su empresa?

Número aproximado de empleados a 31 de diciembre del año 2013

Cifra aproximada de ventas en millones de euros en el año 2013

La cifra de ventas más importante de su empresa corresponde a:

- Servicios de consumo Servicios Industriales

¿Cuántos nuevos Servicios ha lanzado su empresa en los últimos 3 años?

¿Porcentaje de productos comercializados en los últimos 3 años que están todavía en el mercado? %

¿Cuál es su posición en la empresa?

- Presidente, propietario o Director General Director de Marketing/Comercial Director de I+D
 Director de Producción/Operaciones Otros

¿Cuántos años lleva trabajando en este tipo de actividades?

Progreso:

encuesta / datos y selección de regalos

 UNIVERSIDAD DE MURCIA
DPTO. DE COMERCIALIZACIÓN E INVESTIGACIÓN DE MERCADOS

LE AGRADECEMOS SU COLABORACIÓN E INTERÉS Y QUEDAMOS A SU DISPOSICIÓN. MUCHAS GRACIAS.

Para que pueda recibir como obsequio el libro que usted seleccione de entre los propuestos y un informe ejecutivo con los resultados de esta investigación, por favor, rellene la siguiente información.

Nombre:
Empresa:
Dirección:
Ciudad y Código postal:
Teléfono:
* Opcional

Progreso:

encuesta / datos y selección de regalos

 UNIVERSIDAD DE MURCIA
DPTO. DE COMERCIALIZACIÓN E INVESTIGACIÓN DE MERCADOS

SU FORMULARIO HA SIDO ENVIADO CORRECTAMENTE, GRACIAS.

Ya puede cerrar esta ventana...

ANNEX V
GIFT OFFERED TO THE
PARTICIPANTS

ANNEX V. GIFT OFFERED TO THE PARTICIPANTS

LE AGRADECEMOS SU COLABORACIÓN E INTERÉS Y QUEDAMOS A SU DISPOSICIÓN. MUCHAS GRACIAS.

A continuación le ofrecemos la posibilidad de obtener un obsequio:

Cambio tecnológico e innovación en las empresas



Esta obra es una primera aproximación a los valores y al conocimiento más destacado en este ámbito. Describe la economía del cambio tecnológico y su importancia para las empresas; las formas en las que fluyen las ideas y el conocimiento, y los modelos de cooperación entre las organizaciones en la búsqueda de la innovación. Asimismo proporciona un panorama de las técnicas y herramientas más utilizadas en la medición de la innovación y trata sobre algunos de los más notables métodos de decisión en un entorno de innovación constante.

Casos de marketing estratégico en las organizaciones



Son dieciocho casos que se presentan en este manual, confeccionados por veinticinco expertos de diez universidades y cinco empresas, con una amplia experiencia docente y profesional en el campo del marketing estratégico, están destinados a todos aquellos que quieren saber sobre la empresa lo que sólo sus directivos saben.



Dirigir, liderar, motivar, comunicar, delegar, dirigir reuniones

Recoge y sintetiza, de modo claro y ameno, lo más nuevo en eficacia directiva y manejo profesional. El objetivo de este libro es proporcionarle mayor eficacia, facilitándole la dirección de su equipo, la relación con compañeros, clientes y proveedores; y la comunicación con todo su entorno.

El plan de marketing en la PYME



Hay muchas razones para pensar que no sólo merece la pena planificar sino que es totalmente necesario para la supervivencia de las pymes. Una de ellas es que está constatado que quien utiliza adecuadamente la planificación de marketing aumenta la rentabilidad de su empresa. Y lo consigue porque el plan de marketing obliga a hacer una vigilancia más sistemática de la evolución del mercado y aumenta la capacidad de reacción ante los imprevistos.

Gestión eficaz del tiempo y control del estrés



Gestión del Tiempo ofrece una visión clara y amena, tan rigurosa como práctica sobre los problemas habituales en el manejo cotidiano de ese recurso que se nos escapa entre los dedos. Su sistema, que ha sido calificado como ingeniería del tiempo no está orientado a exprimir -¡aún más!- al ya presionado directivo. Ofrece las claves para descubrir lo que pasa y, sobre todo lo que funciona. Su objetivo no es tanto permitirle que trabaje más, sino que lo haga mejor, que controle y dirija su vida y que sea incluso más feliz.

Liderazgo y motivación de equipos de trabajo



Una de las principales implicaciones que han supuesto los constantes cambios en los que se ven envueltas las organizaciones, y su necesidad continua de adaptación, con objeto de mantener su competitividad en un entorno cada vez menos predecible, es la forma de entender la organización del trabajo, adquiriendo los sistemas de trabajo en equipo una importancia fundamental.

Marketing de los servicios



Este manual trata las causas económicas que explican el crecimiento de los servicios, la implantación del marketing en las empresas que los proporcionan y los elementos claves para desarrollar una planificación estratégica.

Implantación del marketing en las empresas de servicios, planificación y desarrollo para los servicios, los precios de los servicios y distribución y comunicación de los servicios.

Progreso:



Siguiente

encuesta / datos y selección de regalos

SPANISH REPORT

(RESUMEN EN CASTELLANO)

La innovación es la fuerza que está detrás de las empresas que tienen un mayor rendimiento. Las empresas que innovan tienen mayores tasas de crecimiento y sus clientes están más satisfechos que los de la competencia, debido a que disfrutan del mayor valor que proporciona un nuevo producto o servicio. Empresas como 3M y Google han demostrado ser líderes en innovación, convirtiéndose así en empresas de referencia mundial. Por otro lado, Apple ha logrado ser la empresa más conocida y rentable de la historia reciente a través del lanzamiento de una serie de “conceptos” que han cambiado la naturaleza de la música, el ocio, las telecomunicaciones y la industria del consumo electrónico. El desarrollo de nuevos productos (DNP) ha sido estudiado desde hace varias décadas por numerosos académicos, constituyéndose una gran área de conocimiento sobre el proceso de DNP y los factores clave de su éxito (Hauser, Tellis y Griffin 2006; Henard y Szymanski 2001). Sin embargo, estos estudios están fuertemente orientados hacia la innovación de productos, lo que nos lleva a preguntarnos qué ocurre con la innovación de servicios.

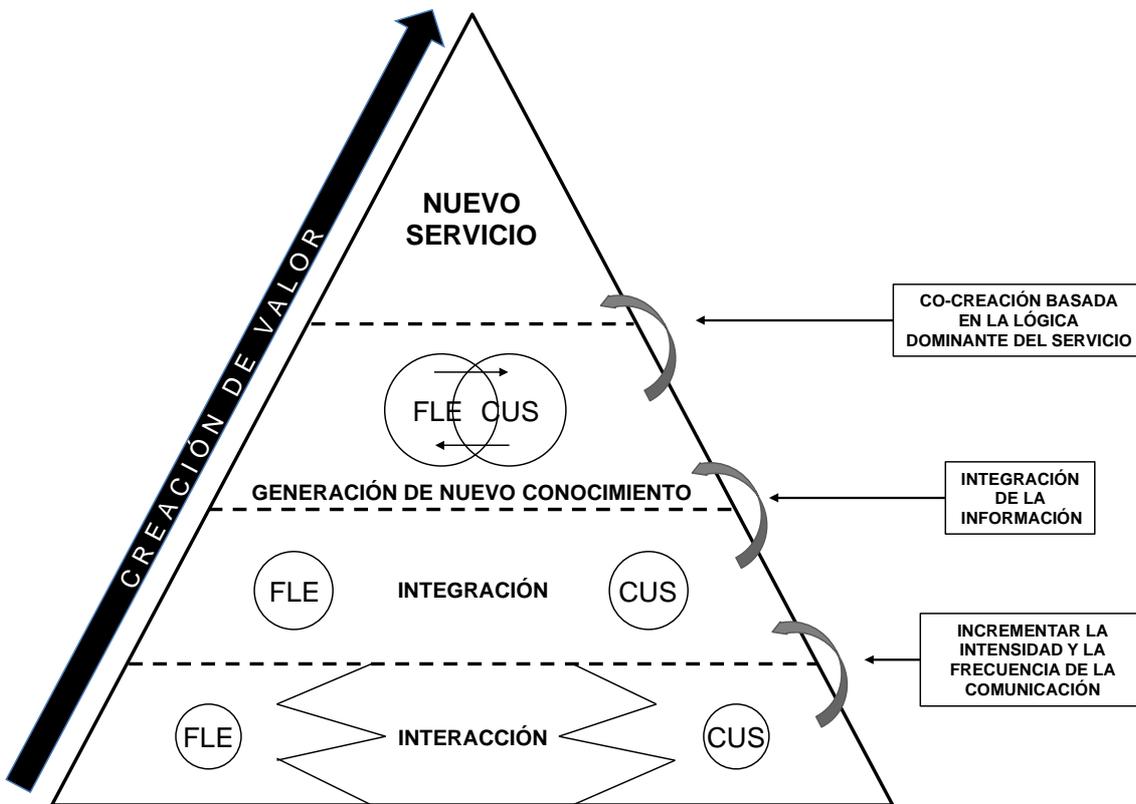
Los sistemas económicos más avanzados del mundo están dominados por los servicios, que a menudo generan más del 80% de su producto interno bruto (Ostrom et al. 2010; Gustafsson, Brax y Witell 2010; Gustafsson et al. 2015). En 2015, los consumidores gastaron aproximadamente el 60% de su cartera en servicios (bea.gov – Bureau of Economic Analysis, 2015). El sector de los servicios también es el que emplea al mayor número de trabajadores, y el que más crece en términos de creación de empresas y contratación de personal. Incluso las empresas manufactureras se están dando cuenta de que se pueden diferenciar mejor de su competencia añadiendo servicios a sus principales productos, transformando productos en servicios o siendo suministradoras de soluciones (Gebauer, Gustafsson y Witell 2011; Witell et al. 2011). Claramente, los servicios constituyen una gran fuente de crecimiento, creación de valor y bienestar para las empresas y sus clientes (Anderson y Ostrom 2015). Por consiguiente, la investigación en innovación de servicios supone un impacto directo en la sociedad (Biemans, Grifo y Moenaert 2015).

Esta tesis tiene como objetivo profundizar en el estudio de la implicación de los empleados de primera línea junto con los clientes en proyectos de innovación de servicios. La revisión de la literatura desarrollada en los dos primeros capítulos destaca la importancia de la innovación de servicios, incluyendo la implicación de los empleados de primera línea y de los clientes como determinantes de la competitividad de la empresa, además de explorar los determinantes de su participación. También, se examina de forma especial la relevancia de llevar a cabo un proceso de desarrollo de

nuevos servicios (DNS) por etapas y las dificultades que se derivan de la implicación conjunta de estos actores en cada una de las etapas del proceso.

Hemos encontrado que la mayoría de los trabajos publicados hasta la fecha estudian la implicación de estos actores por separado. Aunque recientemente hay unos pocos trabajos (Melton y Hartline 2010, 2015 y Ordanini y Parasuraman 2011) que han abordado empíricamente el efecto que tiene la implicación de los empleados de primera línea y de los clientes de forma conjunta en los resultados de la innovación de servicios. Una vez realizada la revisión de la literatura, en la que se ha explorado la importancia de la interacción y la integración de los empleados de primera línea y los clientes, se ha demostrado la influencia que la nueva lógica dominante del servicio tiene en el concepto de co-creación. Presentamos una síntesis que aglutina gráficamente la esencia de esta investigación (ver Figura 1).

Figura 1. Razonamiento teórico



FLE: Empleados de primera línea; CUS: Clientes

Esta pirámide muestra la evolución desde la relación comercial básica que ha existido y que existe entre los empleados de primera línea y los clientes, hasta una relación de creación de valor para la empresa y para cada uno de los agentes que se implican en un proyecto de innovación de servicios. La base de esta pirámide muestra la situación inicial entre estos actores, donde se puede observar la visión tradicional de estos actores, donde cada uno trabaja y se relaciona en función de sus objetivos individuales e intereses personales. Pero esta situación cambia conforme las empresas aumentan la intensidad y la frecuencia de la comunicación con estos agentes. Es decir, en la medida en que las empresas consultan a cada uno de estos agentes por separado, se convierten en fuentes de información (Kristensson Matthing y Johansson 2008). Este cambio de mentalidad por parte de las empresas se ha reflejado en una nueva corriente de investigación que ha demostrado que la implicación de los empleados de primera línea y de los clientes en proyectos innovadores de servicio es positiva para la empresa (Ordanini y Parasuraman 2011). Avanzando un paso más en nuestra propuesta teórica, en la tercera fase de la pirámide, se evidencia que la información obtenida de cada uno de estos actores podría estar condicionada por la estrecha relación que existe entre ellos. Por tanto, la integración ayudaría a estos actores a compartir conocimientos y así generar un nuevo conocimiento de mayor valor. Por último, como consecuencia de la integración de la información de estos actores se llegaría a la co-creación basada en la lógica dominante del servicio, que determina que la incorporación de estos actores ayuda a la creación de valor del nuevo servicio (Ostrom et al 2015). El resultado sería un nuevo servicio a partir de la implicación óptima de los empleados de primera línea y de los clientes.

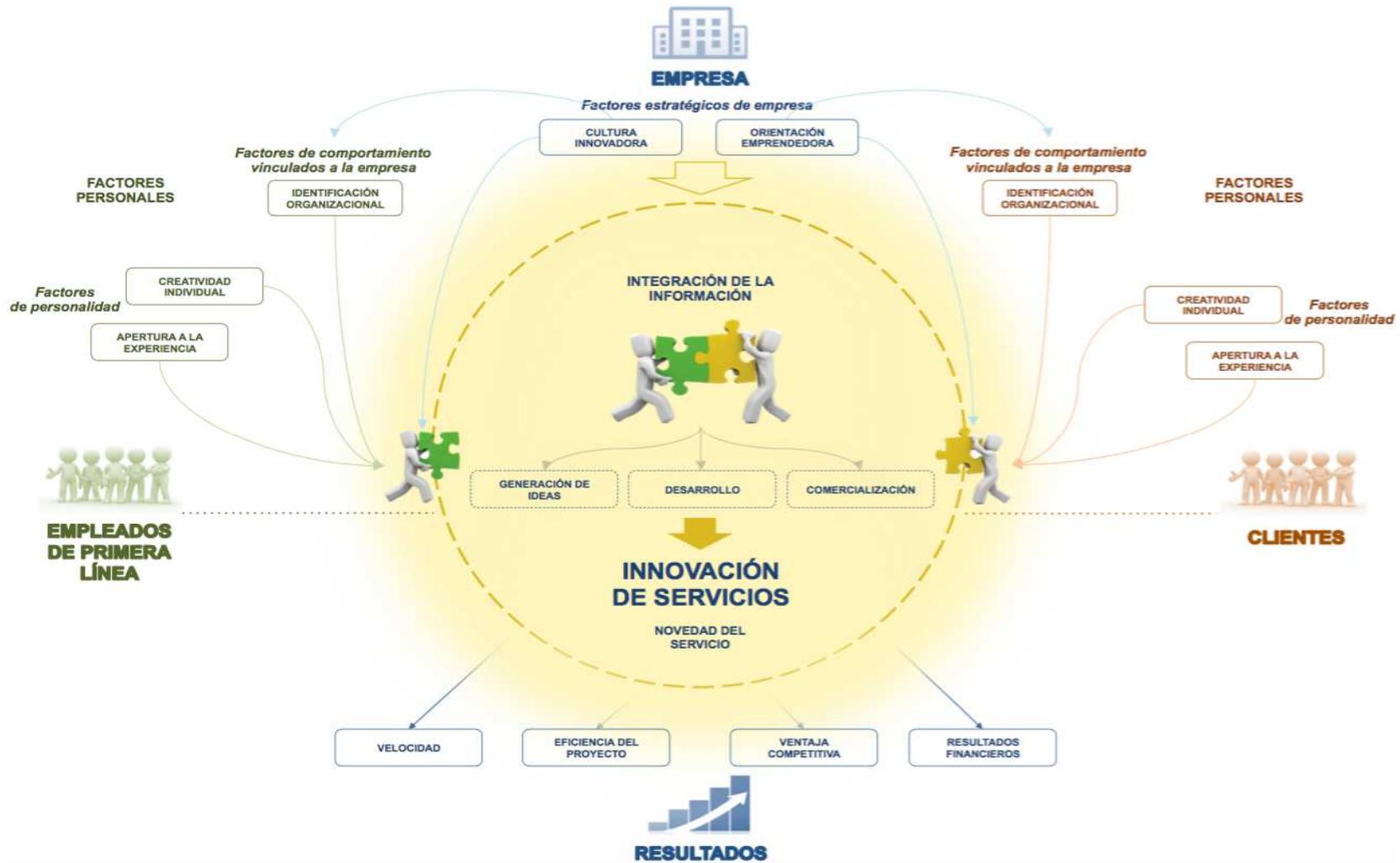
Por lo tanto, es necesario seguir profundizando en las relaciones entre estos dos actores en un entorno de innovación. Por este motivo, esta tesis estudia los antecedentes que determinan su implicación y los efectos de su implicación conjunta en los resultados del proyecto de innovación de servicios.

Se ha considerado necesario llevar a cabo en primer lugar un estudio exploratorio porque la literatura sobre la implicación de los empleados de primera línea y de los clientes en el mismo proyecto es casi inexistente y es preciso identificar previamente los aspectos clave que pudieran ser determinantes en la investigación. Así, en el capítulo tres se presentan los resultados de las entrevistas en profundidad, lo que nos permite fortalecer el planteamiento de la hipótesis y establecer las bases para el estudio cuantitativo. Entre las principales conclusiones de este estudio podemos

destacar que las empresas reconocen el papel fundamental de los empleados de primera línea y de los clientes como fuentes relevantes de información de la empresa para crear, desarrollar o lanzar nuevos o modificados servicios al mercado. Además, la interacción y la integración de la información entre ellos se han puesto de manifiesto por los encuestados como elementos cruciales a tener en cuenta en los nuevos proyectos. Además, se analizaron las estrategias que llevaban a cabo las empresas que pudieran facilitar la implicación de estos agentes en proyectos de innovación de servicios. Dos estrategias sobresalieron del resto: tener una cultura innovadora dentro de la empresa y una orientación emprendedora. También, se ha detectado el papel determinante que juegan los factores personales (tanto de la personalidad como del comportamiento) en la implicación de ambos actores (empleados de primera línea y clientes) en los nuevos proyectos innovadores.

Tras la mencionada revisión de la literatura y el estudio exploratorio, se ha propuesto un modelo teórico (ver figura 2) que pretende responder a varias preguntas agrupadas en tres partes: 1. ¿Cuáles son los factores que determinan la implicación de los empleados de primera línea y de los clientes en proyectos de innovación de servicios? 2. ¿Qué resultados se obtienen de implicar a empleados de primera línea y a clientes teniendo en cuenta el grado de novedad del nuevo servicio?, y ¿qué papel juega la integración de la información entre estos actores en los resultados del proyecto? 3. ¿Es necesario implicar a los empleados de primera línea y a los clientes en todas las etapas del proceso de desarrollo de nuevos servicios? ¿Qué sucede si tenemos en cuenta en su implicación el grado de novedad del proyecto de innovación de servicios?

Figure 2. Modelo teórico global



En la primera parte se formularon las hipótesis (H1-H16) sobre las relaciones entre los antecedentes (factores estratégicos de la empresa y factores personales) y la implicación de empleados de primera línea y clientes (ver figura 3). La segunda parte (H1-H5) se centra en las relaciones entre la implicación de los empleados de primera línea y de los clientes y la obtención de una ventaja competitiva en el nuevo servicio lanzado al mercado, teniendo en cuenta el grado de innovación del servicio y el nivel de integración de la información entre los actores (ver figura 4). La tercera parte (H1a-c – H2a-c y H3d-e – H4d-e) profundiza en el análisis de la implicación de los empleados de primera línea y de los clientes en las diferentes dimensiones de resultado del nuevo servicio, teniendo en cuenta la/s etapa/s en la que están implicados estos actores y el grado de innovación del servicio (ver figura 5).

Figura 3. Parte I

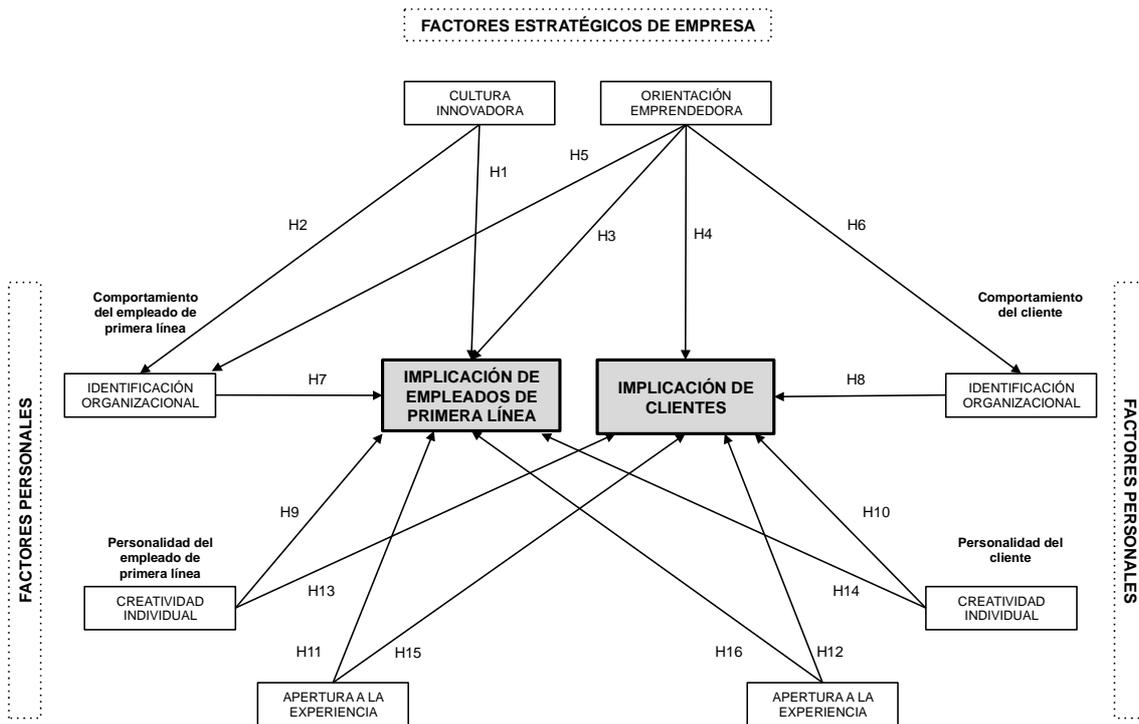


Figura 4. Parte II

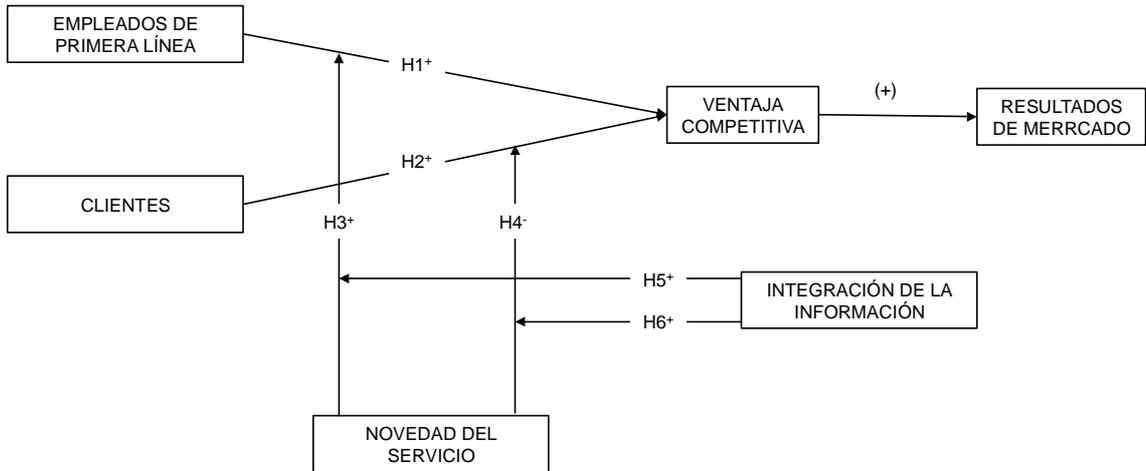
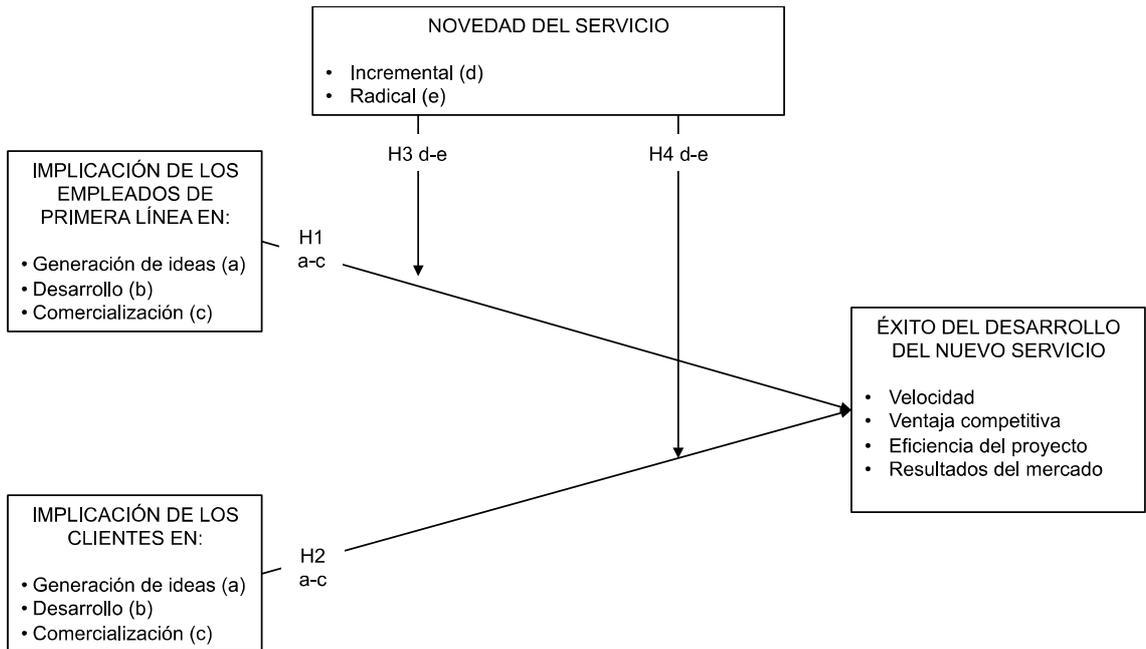


Figura 5. Parte III



Para el preceptivo contraste de las hipótesis se ha realizado una recolección de datos y una evaluación de los mismos compleja y laboriosa. Se obtuvieron datos de 231 empresas innovadoras pertenecientes a diferentes sectores. Se usó un cuestionario online para la recogida de información a través de la plataforma web del equipo de investigación que apoya esta tesis (www.imasdmasmk.es). Finalmente, una vez terminada la recogida de información que se presenta en el capítulo 4, se ha

contrastado empíricamente el modelo teórico dividido en las tres partes mencionadas anteriormente que ha permitido la validación de la mayoría de las hipótesis planteadas.

El análisis de los resultados obtenidos ha permitido verificar el impacto de la implicación de los empleados de primera línea y de los clientes sobre el desempeño del proyecto que han sido expuestos en el capítulo 5. Así, se desprende que una gestión eficaz de los empleados de primera línea (FLE) y de los clientes (CUS) proporcionaría a las empresas un mejor rendimiento del nuevo servicio. A continuación, resumimos los efectos para cada una de las partes anteriormente mencionadas.

PARTE I. ¿Cuáles son los factores que determinan la implicación de los empleados de primera línea y de los clientes en proyectos de innovación de servicios?

Los resultados obtenidos en el contraste empírico confirman la influencia de los factores estratégicos de la empresa y de los factores personales de los FLE y de los CUS en su implicación en proyectos de innovación de servicios. Por un lado, se corrobora que la cultura innovadora influye en la implicación de los FLE. Además, se ha encontrado que esta estrategia fomenta la identificación organizacional de estos empleados. Por otro lado, se confirma débilmente que la orientación emprendedora influye en la implicación de los FLE y de los CUS. Asimismo, podemos concluir que la cultura innovadora y la orientación emprendedora son factores estratégicos de la empresa que facilitan la implicación de los FLE y de los CUS en la innovación de servicios. Además, estas estrategias tienen una fuerte influencia en la identificación organizacional de los FLE y de los CUS, siendo mayor en la identificación organizacional del cliente.

Respecto a los factores personales, los resultados arrojan luz sobre los determinantes que más influyen en la implicación de los FLE y de los CUS. En el caso de los factores de comportamiento vinculados a la empresa, la identificación organizacional se confirma como un factor determinante para la implicación de FLE y CUS. Además, esta influencia es mayor en la implicación de los FLE que en la participación de los CUS. De hecho, la influencia de la cultura innovadora en la participación de los FLE está mediada por la identificación organizacional de los FLE. Para el caso de los factores de personalidad podemos concluir que son éstos los que más determinan la

implicación de FLE y CUS. La creatividad individual y el grado de apertura hacia a la experiencia son factores clave en la implicación de los FLE y de los CUS. Además, hemos encontrado que los factores de personalidad tienen una mayor influencia en los CUS que en los FLE. Por último se confirma que la personalidad de los FLE, su creatividad individual y su grado de apertura hacia la experiencia, también influyen en la implicación de los CUS. Pero en el caso de la personalidad de los CUS, sólo su creatividad individual es determinante de la implicación de los FLE. Ante estos resultados también se revela que la interacción entre estos dos actores debe tenerse en cuenta cuando la empresa quiere contar con estos agentes para desarrollar un nuevo servicio.

PARTE II. ¿Qué resultados se obtienen de implicar a empleados de primera línea y a clientes teniendo en cuenta el grado de novedad del nuevo servicio? Y ¿qué papel juega la integración de la información entre estos actores en los resultados del proyecto?

Como se ha mencionado, los FLE y los CUS son fuentes de información utilizadas para llevar a cabo proyectos innovadores de servicios. Sin embargo, se han detectado algunos escenarios donde la participación puede no resultar beneficiosa para las empresas cuando los FLE y los CUS participan conjuntamente. Esta situación conlleva a la cuestión de si la implicación de estos dos actores siempre conduce a la obtención de mejores resultados para el servicio.

En la primera etapa del análisis, y sin tener en cuenta ninguna influencia adicional en la implicación de los FLE y de los CUS, podemos aseverar que la implicación de estos actores mejora la ventaja competitiva del nuevo servicio. Además, los resultados muestran que los FLE tienen mayor influencia cuando están implicados conjuntamente con los CUS. En la segunda etapa del análisis, consideramos que la novedad del servicio debe ser tomada en cuenta a la hora de implicar a los FLE y a los CUS. Efectivamente, a pesar de los resultados iniciales que muestran un efecto positivo de ambos agentes en la ventaja competitiva, la novedad del servicio modera este efecto. Por tanto, se puede decir que la novedad del servicio afecta a la implicación de FLE y CUS. Mientras que un mayor grado de novedad refuerza positivamente la implicación de los FLE en la ventaja competitiva, un mayor grado de novedad en el servicio disminuye el efecto positivo que tenía la implicación de los CUS en la ventaja competitiva. En otras palabras, la influencia positiva que el CUS tenía en términos de ventaja competitiva se ve disminuida si el proyecto tiene un alto grado de novedad. Es

por ello que podemos concluir que el grado de innovación del servicio juega un papel clave a la hora de implicar a los FLE y a los CUS.

Pero esta investigación va un paso más allá al tratar de explicar y resolver este efecto negativo de la novedad del servicio y la implicación del CUS en la ventaja competitiva del nuevo servicio. Para ello se ha explorado si el nivel de integración de la información entre FLE y CUS mejora el efecto negativo mencionado anteriormente. Los resultados demuestran que una mayor integración de la información entre FLE y CUS mejora el efecto negativo que la novedad del servicio tenía sobre la implicación de los CUS en la ventaja competitiva del proyecto. Es decir, se puede concluir que la implicación de los FLE y de los CUS en proyectos de innovación de servicios depende de la novedad del servicio y del nivel de integración de información entre ellos, especialmente en el caso de la implicación de los CUS.

PARTE III. ¿Es necesario implicar a los empleados de primera línea y a los clientes en todas las etapas del proceso de desarrollo de nuevos servicios? ¿Qué sucede si tenemos en cuenta en su implicación el grado de novedad del proyecto de innovación de servicios?

Se ha hallado que la implicación de los FLE y de los CUS en los resultados del nuevo servicio dependen de la etapa en la que estén involucrados. En particular, esta investigación analiza el efecto que podría tener cada etapa sobre las otras. Además, en esta parte se particulariza en el efecto moderador del grado de novedad del servicio en cada una de las etapas. Asimismo, se ha llevado a cabo un análisis minucioso del impacto de la implicación de FLE y CUS en cada una de las etapas por separado y el efecto sobre las diferentes dimensiones de resultado de los nuevos servicios (la velocidad de desarrollo y lanzamiento del servicio, la eficiencia del proyecto, la obtención de ventaja competitiva y los resultados financieros).

Como hemos mencionado, los resultados de la implicación de FLE y CUS dependen de la etapa en la que estén implicados. Esto se debe a la propia idiosincrasia de estos actores y a la influencia que pudiera tener una etapa sobre la siguiente. En el caso de los FLE, se verifica que su implicación en la etapa de desarrollo disminuye la velocidad del proceso pero aumenta la ventaja competitiva del nuevo servicio. Esto se debe a que los FLE y CUS son recursos exclusivos de la propia empresa, es decir, la competencia no dispondría de ellos para el desarrollo del nuevo servicio. Esta situación permitiría a la empresa mejorar su posición competitiva en el mercado tras el

lanzamiento del nuevo servicio. También se destaca que la implicación de los FLE en la etapa de comercialización del nuevo servicio, si previamente han sido implicados en la etapa de desarrollo la mejora de la velocidad de desarrollo y lanzamiento del nuevo servicio. Pero no sólo la implicación del FLE mejora la velocidad del proyecto, sino que su implicación también disminuye los costes presupuestados. Al mismo tiempo y sorprendentemente se concluye que la implicación de los FLE en la etapa de generación de ideas cuando se implican en el mismo proyecto los CUS, provoca que la influencia de los FLE sea inexistente. En esta investigación se demuestra que las ideas aportadas por los CUS tienen un impacto en los resultados muy superior a las ideas que aportan los FLE cuando ambos están implicados en el mismo proyecto. La implicación de los CUS en esta etapa mejora todas las dimensiones de resultados analizadas (velocidad, eficiencia, competitividad y resultados financieros). Sin embargo, este impacto positivo no sólo se consigue cuando los CUS están implicados en la etapa de generación de la idea. Cuando analizamos el efecto que pudiera tener una etapa sobre otra vemos que la implicación de los CUS en la etapa de generación de ideas mejora la velocidad y la eficiencia del nuevo servicio. Pero constatamos que para que el nuevo servicio fuera más competitivo y obtuviera un mayor rendimiento en los resultados financieros, el cliente debería continuar implicado en la etapa de desarrollo.

Contrariamente a los resultados encontrados en los trabajos analizados (Carbonell, Rodríguez-Escudero y Pujari 2009, Melton and Hartline 2010), podemos concluir que la implicación de los CUS en la etapa de comercialización del servicio cuando previamente se han implicado en la etapa de generación de ideas es negativa para la empresa. Entre las posibles explicaciones podríamos destacar en primer lugar que su implicación incrementa los costes previstos en el proyecto. La empresa simplemente vería aumentados los gastos previstos inicialmente ya que las etapas no son consecutivas en el tiempo y los clientes tendrían que volver a testar el servicio y a ayudar en su lanzamiento. Y en segundo lugar, su implicación disminuye la ventaja competitiva del nuevo servicio. Como evidencian los resultados las empresas perderían competitividad ya que los CUS que pudieran estar implicados no representarían una muestra suficiente de su mercado objetivo.

Además, se confirma que el grado de novedad de los servicios no es determinante en la implicación de FLE y CUS en cada una de las etapas de desarrollo de nuevos servicios. Aunque si bien es cierto que se ha demostrado que un mayor nivel de novedad del servicio disminuiría el efecto de la implicación de los FLE en los

resultados financieros del nuevo servicio. Sin embargo, no hemos podido demostrar este efecto en el resto de etapas y variables de resultado utilizadas. Resumiendo, se puede decir que aunque muchos investigadores se han centrado en la implicación de los FLE y de los CUS como factores clave del éxito del desarrollo de nuevos servicios (Melton y Hartline 2013, 2015; van der Heijden et al. 2013), esta tesis ha ido un poco más allá y ha realizado un análisis de cada una de las etapas del proceso de desarrollo de nuevos servicios. Esta es una de las principales contribuciones del proyecto, ya que nunca antes se ha realizado. Y por último, también se realiza un análisis de la influencia que las etapas pudiesen tener entre ellas y de la influencia del grado de novedad del servicio.

Como en todo trabajo de investigación, éste no está exento de limitaciones y posibles mejoras. La limitación fundamental de este trabajo ha sido no poder preguntar directamente a los empleados de primera línea y a los clientes, teniendo un único informante (el responsable de desarrollo del nuevo servicio lanzado al mercado). Pero, ya se están desarrollando nuevos proyectos de investigación que forman parte de las futuras líneas de investigación planteadas en la tesis. Concretamente, la implantación de estos modelos en sectores y empresas específicas, el contraste de estos modelos en base a muestras de empleados de primera línea y de clientes y la profundización en futuras relaciones que esclarezcan la relación de valor que se establece entre estos actores con el fin de desarrollar nuevos servicios.