

**UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL
ESCOLA DE ADMINISTRAÇÃO
PROGRAMA DE PÓS-GRADUAÇÃO EM ADMINISTRAÇÃO
MESTRADO EM ADMINISTRAÇÃO**

Rafael Toassi Crispim

**THE ELEMENTS OF INNOVATION CAPABILITIES IN SERVICE
ORGANIZATIONS**

Porto Alegre

2020

Rafael Toassi Crispim

**THE ELEMENTS OF INNOVATION CAPABILITIES IN SERVICE
ORGANIZATIONS**

Dissertação submetida ao Programa de Pós-Graduação em Administração da Universidade Federal do Rio Grande do Sul como requisito para obtenção do título de Mestre em Administração.

Orientador: Prof. Dr. Paulo Antônio Zawislak

Dissertation submitted to the Graduate Program in Business Administration of the Federal University of Rio Grande do Sul as a requirement for receiving the degree of Master of Science in Business Administration.

Advisor: Prof. PhD. Paulo Antônio Zawislak

Porto Alegre

2020

CIP - Catalogação na Publicação

Crispim, Rafael Toassi
The Elements of Innovation Capabilities in Service
Organizations / Rafael Toassi Crispim. -- 2020.
93 f.
Orientador: Paulo Antônio Zawislak.

Dissertação (Mestrado) -- Universidade Federal do
Rio Grande do Sul, Escola de Administração, Programa
de Pós-Graduação em Administração, Porto Alegre,
BR-RS, 2020.

1. Innovation capabilities. 2. Services. 3.
Innovative behavior. 4. Capabilities overlap. 5.
Multiple case study. I. Zawislak, Paulo Antônio,
orient. II. Título.

Rafael Toassi Crispim

**THE ELEMENTS OF INNOVATION CAPABILITIES IN SERVICE
ORGANIZATIONS**

Dissertação submetida ao Programa de Pós-Graduação em Administração da Universidade Federal do Rio Grande do Sul como requisito para obtenção do título de Mestre em Administração.

Dissertation submitted to the Graduate Program in Business Administration of the Federal University of Rio Grande do Sul as a requirement for receiving the degree of Master of Science in Business Administration.

Approved on **August 04, 2020**.

EVALUATION COMMITTEE

Chair:

Prof. Paulo Antônio Zawislak, PhD
PPGA/UFRGS

Examiners:

Prof. Fernanda Maciel Reichert, PhD
PPGA/UFRGS

Prof. Eduardo Raupp de Vargas, PhD
COPPEAD/UFRJ

Prof. Faïz Gallouj, PhD
Université de Lille

ACKNOWLEDGEMENTS

After a few years of professional experience through consulting projects and other services, which allowed me to meet dozens of established companies and startups, both large and small in varied economic sectors in my home state and elsewhere in Brazil, I was motivated to pursue a masters' degree to comprehend why Brazilian firms were said to be innovative, but the country still cared in social and economic development. By making the decision of enrolling in a graduate program, I was surely not foreseeing that this would be a life-changing adventure in many aspects.

Fortunately I had the opportunity to be engaged in a leading research group dedicated to innovation and technology studies. Participating on group's daily activities taught me the details of an academic career and pushed me intellectually. I run out of words to thank my friends, colleagues and advisors from NITEC, the Innovation Research Center at UFRGS, for this great experience. My period in this master's program was incredible because I had your support. Thank you Ariane Ávila, Denise Barbieux, Guilherme Camboim, Nathália Pufal, Ricardo Leo, and especially Paulo Zawislak. I also thank professors Fernanda Reichert, Eduardo Vargas and Faiz Gallouj for being part of the evaluation committee of this master's thesis.

On the personal side, I thank my father César, my brother Flavio, my aunts and uncles, my grandmother Leda, but particularly my mother Irani, for all the emotional and financial support. Their assistance was fundamental on critical moments, and they were always kindly available to me when needed. Still on the personal aspect, during this period of master's degree I have met the most committed, hardworking, and delicate person I have ever known. Thank you for reminding me how important it is to define clear goals in life and to celebrate our victories, my girlfriend Anelise. You inspire me.

Now that I have been through two years of intensive academic training, my career and research interests have adjusted from the original motivation. With all this new knowledge in perspective, my career plan is to be engaged in cutting-edge academic research that will influence both academics and practitioners. In addition, as a scholar I wish to be able to train the next generation of leaders, particularly in Latin America, and advise private and public organizations in their strategic decision-making. Ultimately, my goal is to lead research in the field of technology and innovation to move forward complex technological issues. This journey has just started.

ABSTRACT

The literature on innovation have been trying to answer the question of how to identify firms' innovative behavior using an evolutionary economics approach (Nelson & Winter, 1982; Dosi & Nelson, 1994), and has developed the concept of "innovation capability" as an analysis model, particularly for manufacturing firms. Zawislak et al. (2012) propose and operationalize a model that is simple and addresses either technological and business aspects of firm innovation. However, the case of service organizations demand a slightly different approach on innovation because of their particular characteristics. Production and consumption simultaneity, strong relational character, and a process-oriented value generation are all features that influence how service firms organize their innovation capabilities. Therefore, the objective of this study is to uncover the elements that comprise innovation capabilities in services and that manifest the innovative behavior of these firms. We conducted an explorative qualitative study, in which we interviewed top management executives of six service firms of multiple sizes and operating in varied industries. We have also gathered additional secondary data from multiple sources. The result is the four innovation capabilities (i.e. Development, Operations, Management, Transaction) proposed in Zawislak's et al. (2012) model adjusted to service organizations and depicted into 32 defining elements distributed through the innovation capabilities. The analysis also sheds light into the multiple overlaps between elements, exposing diffuse frontiers of those innovation capabilities, and emphasizes the relational character of services as it shapes how innovation is organized.

Keywords: Innovation capabilities, Services, Innovative behavior, Capabilities overlap, Multiple case study.

RESUMO

A literatura sobre inovação tem tentado responder à questão de como identificar o comportamento inovador das empresas usando a abordagem da economia evolucionária (Nelson & Winter, 1982; Dosi & Nelson, 1994), e desenvolveu o conceito de “capacidade de inovação” como um modelo de análise, particularmente para empresas de manufatura. Zawislak et al. (2012) propõem e operacionalizam um modelo simples e que aborda aspectos tecnológicos e de negócios da inovação nas empresas. No entanto, o caso das organizações de serviços exige uma abordagem ligeiramente diferente da inovação devido às suas características particulares. Simultaneidade de produção e consumo, forte caráter relacional e uma geração de valor orientada a processos são características que influenciam a maneira como as empresas de serviços organizam suas capacidades de inovação. Portanto, o objetivo deste estudo é descobrir os elementos que compõem as capacidades de inovação em serviços e que manifestam o comportamento inovador dessas firmas. Realizamos um estudo qualitativo exploratório, no qual entrevistamos executivos da alta administração de seis empresas de serviços de vários tamanhos e operando em diversos setores. Também coletamos dados secundários adicionais de várias fontes. O resultado são as quatro capacidades de inovação (ou seja, Desenvolvimento, Operações, Gestão, Transação) propostos em Zawislak et al. (2012) ajustadas às organizações de serviço e representadas em 32 elementos definidores distribuídos entre as capacidades de inovação. A análise também mostra múltiplas sobreposições entre elementos, expondo fronteiras difusas das capacidades de inovação e acentua o caráter relacional dos serviços como forma de moldar como a inovação é organizada.

Palavras-chave: Capacidades de inovação, Serviços, Comportamento inovador, Sobreposição de capacidades, Estudo de casos múltiplos.

LIST OF FIGURES

Figure 1. The Product Continuum	18
Figure 2. Innovation Capabilities Framework.....	34
Figure 3. Data Analysis Procedures.....	49
Figure 4. Relations of Innovation Capabilities in Services.....	68

LIST OF TABLES

Table 1. Service Rationales	21
Table 2. Various Concepts for Client Participation.....	22
Table 3. Innovation Capabilities Description.....	35
Table 4. Conceptual Differences Between Manufacturing and Services.....	37
Table 5. Selected Cases Overview.....	43
Table 6. Interviews Summary.....	47
Table 7. Documents Summary.....	48
Table 8. Elements of Development Capability.....	51
Table 9. Elements of Operations Capability.....	53
Table 10. Elements of Management Capability.....	56
Table 11. Elements of Transaction Capability.....	59
Table 12. Comparing Literature Review With Empirical Findings.....	63
Table 13. Capabilities Overlaps.....	65

LIST OF ABBREVIATIONS

ATM – Automated Teller Machine

B2B – Business to Business

B2C – Business to Consumer

CAC – Customer Acquisition Cost

CLV – Customer Lifetime Value

DC – Development Capability

GDP – Gross Domestic Product

ICT – Information and Communication Technologies

IHIP – Intangibility, Heterogeneity, Inseparability, Perishability

KIBS – Knowledge-Intensive Business Services

LTV – Lifetime Value

MC – Management Capability

NPS – Net Promoter Score

NSD – New Service Development

OC – Operations Capability

R&D – Research and Development

SMS – Short Message Service

TC – Transaction Capability

UFRJ – Federal University of Rio de Janeiro (Brazil)

TABLE OF CONTENTS

1. Introduction.....	12
2. Understanding Service Innovation	16
2.1. The Characterization of Services	17
2.1.1. Typologies of Services.....	19
2.2. Production and Consumption Simultaneity.....	21
2.3. The Relevance of Relationships.....	23
2.4. Innovation in Services	25
3. The Innovation Capabilities Approach	29
3.1. Definition and Origins	29
3.2. Innovation Capabilities in Services.....	30
3.3. Defining a Conceptual Model.....	33
3.3.1. An Innovation Capabilities Framework of Analysis	33
3.3.2. An Integrative Framework.....	35
4. Method	42
4.1. Cases Selection.....	42
4.1.1. TransportCo.....	44
4.1.2. FinanceCo	44
4.1.3. ConsultingCo.....	45
4.1.4. ChatCo	45
4.1.5. CoffeeCo	46
4.1.6. BurritoCo	46
4.2. Data Collection.....	46
4.2.1. Primary Data	47
4.2.2. Secondary Data.....	48
4.3. Data Analysis	48
5. Results and Discussion	50
5.1. The Elements of Innovation Capabilities in Services.....	50
5.1.1. Development Capability	50
5.1.2. Operations Capability	53
5.1.3. Management Capability.....	56
5.1.4. Transaction Capability	58
5.1.5. Validating previous literature with empirical findings	62
5.2. Towards a Model of Innovation Capabilities Suitable for Services.....	64
5.2.1. Capabilities Overlaps and Its Diffuse Boundaries.....	65

5.2.2. Services Relational Character in Shaping Capabilities	66
5.2.3. The Relations of Innovation Capabilities in Services	67
6. Conclusion.....	70
6.1. Study Limitations	71
6.2. Future Research.....	72
6.3. Managerial and Policy Implications.....	72
References	74
Appendix A – Interview Protocol.....	85
Appendix B – Secondary Data	88

1. Introduction

Services have increased their relevance to modern societies and economies during the last decades. On the one hand, there is an undeniable growth in participation of many service sectors of economic activity, which now correspond to over 60% of GDP and employment in developed economies (World Bank, 2018; Ostrom et al., 2010). But, on the other hand, other segments of the economy (notably manufacturing and agribusiness) have been affected by services pervasiveness and are becoming more used to different ways of adding value for their customers and realize the necessity of creating impactful experiences (Lightfoot, Baines and Smart, 2013). If we add the ongoing digital revolution to this, we have the perfect recipe for studying services. This three-fold changing dynamic of economic activity worldwide that we are witnessing can only be the result of one phenomenon: the rapid and effective change in service organizations' innovative behavior that differs from a traditional vision of innovation and now requires appropriate attention.

The high pace of technical change due to the digital transformation of industries and the increasing investment on knowledge now are able to shape market structure. Therefore, the intensive use of digital technologies and the speed of information bring service provider and market closer, increasing consumer engagement and awareness, and setting a new dynamic for business competition. In addition, services relational characteristic establishes low appropriability regimes of knowledge, making these activities easy to be developed and adopted, consequently enabling services accelerated diffusion.

Innovation, thus, is key if firms in all industries aim to keep growth, profitability and competitive advantages on the market. But while industry has a view of the manufacturing product as an inert good, which value is manifested in the manufactured artifact (Shostack, 1977; Vargo & Lusch, 2004), services demand a slightly different perspective. How do services change? How do they absorb technology? How do they impact other sectors? With all these questions in mind, this paper aims to dissect the innovative behavior of service providers.

For years services have reportedly been distinguished from goods and other economic activities. As widely described in the literature, services are intangible, heterogeneous, inseparable, perishable, and its production and consumption activities occur simultaneously (Zeithaml, Parasuraman, & Berry, 1985; Fitzsimmons & Fitzsimmons, 2000; Moeller, 2010). In addition, services rely on intense relationships with external actors, increasingly requiring customer participation during the process of providing the service. However, what is yet to

evolve in this discussion is precisely the description of how firms with such characteristics become innovators. In our argument, this mostly happens because, despite the minimum knowledge a firm possess to justify its own existence, services still require the relationship with users simply to be able to perform the service. And this drastically changes how the firm organizes innovation.

These characteristics impose barriers to the concept of dynamics and change, unlike industry that is generally based on technological innovation, with a process relatively sequential (Utterback & Abernathy, 1975; Teece, 1986; Rothwell, 1994; Pavitt, 2005). On contrary, the process of change (i.e. innovation) in a service organization is not necessarily strictly linear. In fact, many authors have been dedicated to uncover what differentiates service innovation (Barras, 1986, 1990; Gallouj & Weinstein, 1997; Sundbo, 1997). Most of these studies show that traditional innovation measures, like R&D expenditure, number of doctors, or patents, work well for some specific manufacturing industries, but limits the perception of innovation in different economic sectors, including services. As services are inherently knowledge-based, their process of change requires, unlike industry, a simultaneous external contribution to the service provision process, therefore creating a totally different logic for innovation. The question that arises, though, is how to identify the innovative behavior of service organizations if the practices carried out to innovate are dispersed throughout the organization, necessarily involve external actors, and are not embed in a traditional R&D department?

During the last twenty years the literature on innovation have been trying to answer this kind of question using an evolutionary economics approach (Nelson & Winter, 1982; Dosi & Nelson, 1994), and has developed the concept of Innovation Capability as an analysis model (Amit & Schoemaker, 1993; Helfat & Peteraf, 2003). In fact, some authors have already attempted to introduce a concept of innovation capabilities in services (see for instance Froehle & Roth, 2007; Agarwal & Selen, 2009; den Hertog, van der Aa & de Jong, 2010; Pöppelbuß et al., 2011; Gryszkiewicz, Giannopoulou & Barlatier, 2013; Kindström, Kowalkowski & Sandberg, 2013; Janssen, Castaldi & Alexiev, 2016). These authors frame their ideas around capabilities for new service development (NSD), or they have explored innovation within a dynamic capabilities approach. In our view, the analysis of service organizations should take into consideration a broader understanding of innovation capabilities and account for different forms of innovation. In addition, to capture the innovative behavior of service firms one must consider not only how firms adapt to their external context, but also how they coordinate those capabilities internally.

Therefore, the gap we cover is the presentation of the elements of innovation capabilities in services, considering a broad vision of innovation and the internal and external interactions that must occur in order to organize these capabilities. We depart from Zawislak et al. (2012) model of innovation capabilities and build our own conceptual model that suits services specificities. Zawislak and colleagues (2012) propose a model that is simple and addresses either technological (Lall, 1992; Bell & Pavitt, 1995), and business aspects (Chandler, 1992; Teece et al., 1997; Dosi et al., 2000; Eisenhardt, 2000; Winter, 2003) of firm innovation. The model seeks to be succinct, while offering details of its Schumpeterian inspiration of the different forms of organizing innovation. It proposes that every firm has four fundamental capabilities, i.e. Development Capability (DC) for product, Operations Capability (OC) for process, Management Capability (MC) for strategy and administration, and Transaction Capability (TC) for supply chain, sales and marketing. In this model, capabilities are closely tied to the sequence of activities needed in bringing a product from idea to consumption. However, this model has mostly been used for manufacturing realities (Zawislak et al. 2012, 2013, 2014; Reichert et al., 2016; Alves et al., 2017).

In this sense, the research question for this project is “what are the elements of innovation capabilities that manifest the innovative behavior of service organizations”? The answer for this question requires an in-depth investigation of the distinct routines of innovation taken place in such firms. When well-orchestrated, these capabilities end up generating different kinds of innovation, i.e. product, process, management, or marketing.

The objective of this research is “to identify the elements of innovation capabilities in service organizations”. In this study, “element” is understood as the detailed routines, activities, resources, practices, and knowledges that are involved in performing an innovation capability. Depicting these elements permits the identification of avenues for promoting change in organizational forms and processes to drive the innovative behavior of service organizations. Therefore, the specific objectives for this study are:

- To characterize services and its specificities;
- To define innovation capabilities;
- To search the literature for adaptations to service characteristics of an innovation capabilities model;
- To identify detailed elements of innovation capabilities in services;
- To propose a model of innovation capabilities in service organizations.

This is an exploratory multi-case study. We conducted semi-structured interviews with top managers from six service firms of multiple sizes and operating in varied sectors. We have also collected additional secondary data, such as online videos, press articles, and companies documents, to form our data base.

Our main results show in detail the innovation capabilities of service organizations depicted into 32 elements distributed among the Development, Operations, Management, and Transaction capabilities. In fact, we were able to identify the existence of an overlap between elements due to what we called “diffuse boundaries” of innovation capabilities. Also, services relational character, which establishes an increasingly intimate relationship with the user, will shape how the firm organizes resources for generating innovation. In short, we can conclude that the study of innovation capabilities in services leads us to a model that understands that capability limits are on a level resolved internally by overlapping capabilities, and on other level complemented externally by the interactive relationship with the consumer and other stakeholders.

The remaining of this study is structured as follows. At the beginning, we outline fundamental services specificities that will guide our understanding of what needs to be taken into consideration to define innovation capabilities in services. Then, we characterize innovation capabilities and propose adaptations to services specificities to an established framework. The method, followed by a description of the cases we investigated comes next. Finally, we present and discuss our findings and make concluding remarks at the end.

2. Understanding Service Innovation

Since the late 1980's the world has observed a change in economic structure and the academic literature has followed it through. This strong transformation was led by the improvements on information and communication technologies that were more likely to widespread within service industries than in manufacturing sectors, which shed light into economic activities that had always been surpassed. These changes required the development of a theory of innovation in services (Barras, 1986, 1990; Miles, 1993). Particularly, the 1990's was marked for information systems that uncovered several possibilities for creating new services or ways to provide them. As Gadrey, Gallouj and Weinstein (1995) explain: "this is undoubtedly the most significant impact of information technologies: they themselves create a new dynamic of service innovation" (p. 7).

Although the literature of innovation has traditionally emphasized technological innovation, conventionally measured by R&D expenses, or by number of patents, the study of innovation in services expect a different approach. Of course, innovation management requires a rigorous process in a deliberate and systematic way, even for service firms. But while technological innovation is linear and more structured, service innovation is not necessarily technological, and is often realized without prior R&D (Sundbo, 1997; Gallouj, 2002). We assume that innovation in services differs from manufactured goods because of its nature of intangibility and strong need of customer interaction during service provision. By acquiring significant expertise in managing the interface with clients, and having also accumulated great breadth of experience in managing complex flexible projects, service firms have caught up industrial firms, and are now in a position to become sources of innovation in its own way (Gadrey, Gallouj, & Weinstein, 1995).

But there are other characteristics of services that demand a particular approach on innovation, which is markedly invaded by digital technologies and a transversal nature of services at the first decades of the 21st century. Services are naturally intangible activities, which means their output is not crystalized in an entity whose ownership is exchanged. In fact, the production and the consumption of services occur simultaneously, making customer's participation into the process extremely important for this kind of economic activity. Moreover, services relational character also affects how firms organize their own and third parties' resources in order to reliably deliver their offers into the market. In this sense, in our view one cannot analyze services without considering how it creates value by changing the state of

something while the result is consumed, how the firm keeps relationships with its users, and how all these characteristics will impact the way a service firm change itself. What we will see next are services dissected into those large dimensions.

2.1. The Characterization of Services

Modern economic thought embraced objects (goods) as its core unit of evaluation. Objects have innate properties and are measured in terms of price mechanisms and transactions, both by transferring its ownership and by physically distributing them (Lusch, Vargo & O'Brien 2007). But on contrary, a service is a set of integrated actions coordinated into a system that incorporates technological content, which is co-produced with the customer, and that operates in a different logic of value creation. It is defined as a process of transformation to alter characteristics of customers' information, goods or the person himself. It means that while a good is a thing, a service is an act. The former is an object, an article, a device, whereas the latter is a deed, a performance, or an effort (Rathmell, 1966).

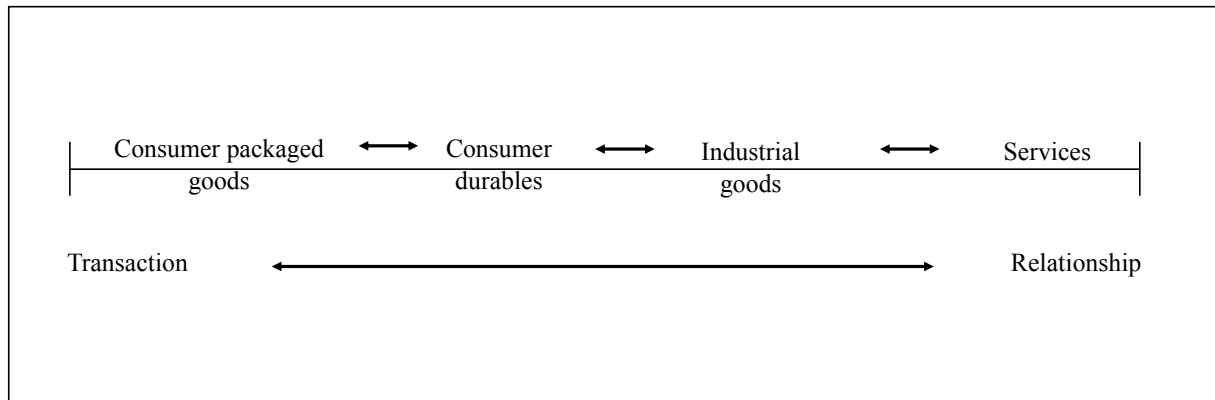
When in contact with services, customers (be they final consumers, or corporate clients) engage in a defined process that involves a value package (Corrêa et al., 2007). This package involves either goods (a device, a tool, a vehicle, etc.) and/or a person (or a group of them) performing the procedures to deliver the result expected by a customer. Because there is a blurring distinction between services and goods, a service value package includes explicit services, implicit services, facilitating goods, support facilities, and information (Corrêa et al., 2007). It is precisely on this distinction of what is a pure good and what is a pure service that authors have proposed a goods-service continuum¹ (Rathmell, 1966; Zeithaml, Parasuraman, & Berry, 1985; Grönroos, 1991). We represent it on Figure 1.

Figure 1 shows an apparent dichotomy between transactions and relationships. So here we need to make our point clear. Of course there is a transaction between a service provider and its customer in a transaction costs economics sense (Coase, 1937; Williamson, 1985). And there is also a degree of relationship between a manufacturer and its clients. The more commoditized the good, the less observable this relationship is, making price the ultimate factor influencing the “make or buy” decision. However in services, the transaction gains another dimension,

¹ It is worth noting that the literature also stresses the idea that there are very few pure goods or pure services (Rathmell, 1966; Zeithaml, Parasuraman, & Berry, 1985; Grönroos, 1991).

much more integrated, interactive, and connected. It means that the utility of a service lies in the nature of the action of making it available for the customer (Rathmell, 1966).

Figure 1. The Product Continuum



Source: Adapted from Grönroos (1991).

Service literature has also identified four main characteristics that differ them uniquely from other activities. Intangibility, heterogeneity, inseparability and perishability (IHIP) have been regularly cited as the fundamental differences of services and goods (Zeithaml, Parasuraman, & Berry, 1985; Fitzsimmons & Fitzsimmons, 2000; Moeller, 2010). In other words, services are irreversible, non-stockable, interactive and variable. Because of it, production and consumption of services occur simultaneously, and their highly variable performance difficult standardization.

These characteristics, i.e. IHIP, have influenced a focus on interaction and relationships (Vargo & Lusch, 2004) into the discussion of services. Once it is manufactured, a good usually acquires an autonomous physical existence. It enjoys a high level of exteriority vis-à-vis the person who made it and the person who is going to consume it. On contrary, services are intangible and do not possess that quality of exteriority. They are consubstantial with those producing them and with those consuming them, or in other words, they cannot be held in stock. In essence, they seldom exist outside of these individuals (Gallouj, 2002).

In this sense, the literature of services has also a concern on the aspect of process of service provision. The service process is the transformation of the user and the orchestration of resources to perform established procedures. Back-office and front-office operations are of great relevance and will have an impact on perceived quality (Parasuraman, Zeithaml, & Berry, 1988), for example. Increased service quality will lead to increased customer satisfaction, whilst loyalty may be amplified (Miles, 2013). Also, the process of service provision is customized to

the customer because of services inherent heterogeneous characteristic. The degree of customization affects the competencies required of frontline employees and the service operation as a whole. This way, resources must be invested in personnel selection and training, and in so doing, minimizing the probability of causing heterogeneity (Li, Yang, & Wu, 2009). Moreover, the more customized the service, the higher the required levels of social skills from frontline employees. The reverse is true to more standardized services.

Finally, the literature on service management also stresses the idea of service systems. The perceptions of value may be formed at the pre-purchase phase, post-purchase phase or, both (Boksberger & Melsen, 2011), and firms might also depend on third parties engaged in a service system to deliver the definite value. This way, service systems are characterized as value co-creation configurations of people and technology, and connect internal and external stakeholder that share information to enhance the service provision. Those complex sociotechnical systems comprise a configuration of a distinct set of interconnected resources, overcoming time and space constraints into where actors engage with one another (Maglio & Spohrer, 2008; Chandler & Lusch, 2015; Grotherr, Semmann, & Böhmman, 2018).

2.1.1. Typologies of Services

Scholars in the Economics field have proposed taxonomies for the production of goods and services. Indeed, to better understand how they are organized, it is important to define what services are and distinguish what they are not. This allows classifying service types and differentiate them from each other. In addition, this distinction is relevant because it favors precise measures of the complex outputs that different types of service activities provide.

Hill (1999) is one author that proposes a classification. Fundamentally, his intention was to describe the differences between tangible products, intangible products, and services. As the author argues, the ultimate characteristic of a service is that it must be provided to another economic unit, which means that one agent must act for the benefit of another (Hill, 1999).

A service, therefore, is some change in the condition of one economic unit produced by the activity of another unit. Its difference to tangible products, briefly, is that a good is an entity that exists independently of its owner and preserves its identity through time. Also, ownership rights can be established and transferred from one economic unit to another. On contrary, an intangible product, or an original², is the archetypal immaterial good. It is a good because it is

² Although services are recognizably intangible activities, Hill (1999) defines intangible products as “originals”, which are “entities originally produced as outputs by persons, or enterprises, engaged in creative or innovative

an entity over which ownership rights can be established and which is of economic value to its owner.

The outputs of service producers are measured in units of changes made in the persons or property of consumers. From an economic point of view, Hill explains that one actor is who owns the goods involved in a service relationship, and another controls the timing and location of production. This distinction makes a considerable difference between the production of goods and services (Hill, 1999).

While Hill differentiates services and goods, Gadrey (2000) offer a general definition of services considering various “demand rationales”. In opposition to many services classifications that define services as perishable, the author mentions that the outcomes of service activities are lasting and may even be susceptible of accumulation because they constitute genuinely material changes in the realities on which service providers work. Therefore, “the outcome of one hundred (successful) heart transplants is made up of an observable ‘stock’ of one hundred individuals with transplanted hearts or, if we prefer, a lasting change of state in those individuals’ ‘health capital’”. (Gadrey, 2000, p. 374).

Therefore, Gadrey (2000) defines that a service activity is:

An operation intended to bring about a change of state in a reality C that is owned or used by consumer B, the change being effected by service provider A at the request of B, and in many cases in collaboration with him or her, but without leading to the production of a good that can circulate in the economy independently of medium C. (p. 375)

This definition the author calls the “service triangle”. Gadrey (2000) uses this definition to classify the economic production of services into three different “rationales”. The first is when “an organization A, which owns or controls a technical and human capacity [...], sells [...] to an economic agent B the right to use that capacity and those competencies for a certain period in order to produce useful effects on agent B himself or on goods C that he owns or for which he is responsible” (p. 384). A second case of rationale “takes the form of an intervention, requested by B, in a medium C owned or controlled by B” (p. 384). Finally, a third rationale “is a human ‘performance’ (accompanied by its technical aids) organized by A and attended by B” (p. 384). These characteristics are summarized on Table 1.

activities of a literary, scientific, engineering, artistic or entertainment nature. Broadly speaking, the original intangibles consist of additions to knowledge and new information of all kinds and also new creations of an artistic or literary nature” (p. 438).

Table 1. Service Rationales

Rationale	Output
<i>Provision of technical capacities rationale</i>	Represented in terms of time units that vary in accordance with the mode of use (duration of call in the case of telephone systems, number of nights in the hotel trade, number of days' hire for rental cars, minutes of access to data-bases, etc.). However, other conventions and contracts are possible, although duration of use is almost always a key element.
<i>Assistance or intervention rationale</i>	Changes in the state of the realities subjected to intervention. The output of hospital services, for example, could be defined on the basis of direct treatments (medical "acts") or on the basis of the medium term improvement in patients' state of health
<i>Entertainment or performance rationale</i>	Usually pre-packaged sequences of performances, although there are different conventions for taking account of audience size when evaluating the output.

Source: Adapted from Gadrey (2000).

Evidently, activities falling within the scope of the provision of technical capacities rationale are more susceptible to benefit from gains of scale and superior productivity, which is less apparent in activities on the realm of more interactive or relational variants of the performance and the assistance rationales. As a majority of productive systems become increasingly complex, comprehending the differences on those typologies of services is particularly relevant for understanding innovation. Information and communication technologies (ICT) have become major driving forces of services development. This changes traditional services deliveries and generates a variety of new service offerings in many markets. Therefore, constantly identifying and solving problems of final consumers or business users stands at the core of service innovation (Gallouj et al., 2015). In order to successfully implement these changes, it is thus important to recognize how innovation activities are carried out in distinct service types.

2.2. Production and Consumption Simultaneity

The definition of services presented in previous sections drives the conclusion that the fundamental characteristic of every service activity is client participation in various forms during the production of the service (Gallouj & Weinstein, 1997). If providing a service means

changing the state of a reality, then the service is consumed precisely in the moment it is being produced, despite of spatial proximity between producer and consumer.

As Gallouj and Weinstein (1997) summarize, various concepts have been developed in order to account for client participation (see Table 2). Regardless of service rationale, be it more relational or more technical, at the interface between the service provider and its client different types of interaction occur. Also, various types of elements are exchanged, such as information, knowledge, or emotions (Sundbo & Gallouj, 2000).

Table 2. Various Concepts for Client Participation

Concept	Meaning
<i>Interface</i>	(physical or virtual) point of contact between customer and service provider (or his technical systems)
<i>Interaction</i>	exchanges of information, knowledge and civilities, performance of repair/rectification tasks
<i>Co-production</i>	extensive and balanced interaction (essentially operational)
<i>Servuction</i>	the process of creating a service by linking up various elements: the customer, the physical medium, contact personnel, the service, the system of internal organization, other customers
<i>Socially regulated service relationship</i>	manifestation of new forms of the social regulation of relationships between producers and consumers
<i>Service relationship</i>	“mode of coordinating the actors on the supply and demand sides” for services or for goods. Operational relationships (co-production) + social relationships for the control and regulation of action programme

Source: Adapted from Gallouj & Weinstein (1997).

Another relevant aspect is that most service activities are to a large extent tacit and difficult to codify, particularly those in which the intangible and relational aspects are more significant. Because production and consumption happen simultaneously, most services necessarily are subject to informational asymmetry. In fact, “when buying services, the uncertainty of the buying decision is therefore assumed to be higher than deciding on already completed transformations leading to goods, which can be tested and returned” (Moeller, 2010, p. 366). An emphasis on quality and trust is therefore an important dimension of service activities (Sundbo & Gallouj, 2000).

Finally, the production of a service involves integrating customer resources (e.g. information, goods, data, etc.) and some customer activity. These resources are combined with the so-called provider resources (e.g. knowledge, equipment, personnel, etc.) resulting in a

transformation of customer resources (Moeller, 2010). This process occurs even in service systems in which the consumer makes direct use of his knowledge and competences, for instance in self-service situations, or hiring of various equipment (Gallouj & Weinstein, 1997). Therefore, the consumption of the service already begins just as the customer engages into the service production process and provides its resources.

2.3. The Relevance of Relationships

For any service to be performed it is necessary a defined customer integration and the incorporation of its resources into the processes of a company. As we have mentioned, customer integration is defined as the combination of customer' resources (persons, possessions, nominal goods, personal data, etc.) with the firm' resources, in order to transform customer resources (Moeller, 2010). Therefore, it is a relationship between both parties by definition. Value is thus defined by and co-created with the consumer rather than embedded in output (Vargo & Lusch, 2004). Ritala, Hyöttylä, Blomqvist, and Kosonen (2013) go further and explain that the nature of the process of service production and consumption depends on the interaction between customer and provider. In essence, it "does not exist beforehand, but is provided through a unique, context- and customer-dependent process" (Ritala et al., 2013, p. 489).

Although Gadrey (2000, p. 373) argues that "many service activities (as defined in the current classifications) are not very 'relational' at all, characterized as they are by very restricted interaction with customers or users, self-service or the anonymous provision of standardized services", that are particular services characteristics that are prevalent despite services typology. For instance, the necessity of customer resources integration and the co-production of services are both aspects that are present in any act of service provision.

It is also important to consider that all these characteristics will influence services organizational capabilities. User and producer interact through an interface in a dynamic process where production and consumption happen at the same time. Therefore, "it is rather in the very nature of services to focus on their dynamic nature as activities, deeds and experiences, involving different parties in the co-creation process" (Ritala et al., 2013, p. 489), which means that the ability to offer a service can be increased by increasing the participation of the client into the process and co-producing it, discharging firm's workforce. In addition, such practices of customer interaction may facilitate gathering customer insights, creating compelling narratives and making the service experience more tangible (Karpen, Gemser, & Calabretta, 2017). Organizational constraints for service provision are also present in firms operating in

varied industries, including manufacturing. As Lenka, Parida and Wincent (2018, p. 328) explain, “adopting a service-oriented approach entails significant organizational change from top to bottom, which affects individuals, teams, units, and the organization”.

Moreover, companies have traditionally benefited from information asymmetry between consumer and firm (Prahalad & Ramaswamy, 2004), but the necessity of sustaining a trustful relationship with customers is at the core of a service provision. Consequently, services face the necessity to change perspectives on many management practices. Providing information access, for instance, is essential to collaborate for value co-creation³, but also exposes the firm to higher risks. This is a complete shift on the logic of operations and development in many manufacturing industries, however necessary in the case of services. It also influences customers’ perceived quality, such as the capability of the provider to be reliable, responsive, and empathetic (Parasuraman, Zeithaml, & Berry, 1988).

The importance of relationships for service operations stretches beyond customers to multiple stakeholders. A firm’s set of relationships with other organizations is fundamental for leveraging resources that will deliver the value expected by customers and provide the right experience. This includes the establishment and orchestration of relationships with partners, suppliers, and other key stakeholders. As Agarwal and Selen (2009) explain, “it is a managerial capability and a skill that largely reflects knowledge sharing, communication, and the learning ability of the firm” (p. 433).

Through interacting with these multiple stakeholders, firms gain information on the changing needs, expectations and spending patterns of its customers. The challenge, though, is how to manage all this information on scale (Kandampully, 2002). This interaction also provide insight about the competencies that are not within the realm of the firm, but if the firm had them, could benefit its customers. In this cases, Kamdampully (2002) suggest that relationships in horizontal or vertical strategic alliances with external partners help cover this gap. As he mentions, “external relationship networks have become an essential prerequisite if a firm is to achieve the capabilities and knowledge required to serve the holistic needs of customers” (p. 19). In this sense, the firm’s ability to nurture enduring relationships within networks of stakeholders strengthens its competitive advantages.

³ In this highly cited paper, Prahalad and Ramaswamy (2004) explain the changing process of value creation exclusively by a firm, to a process where value is co-created with the consumer. We argue that this is a defining aspect of services. On authors’ words: “In the conventional value creation process, companies and consumers had distinct roles of production and consumption. Products and services contained value, and markets exchanged this value, from the producer to the consumer. Value creation occurred outside the markets. But as we move toward co-creation this distinction disappears. Increasingly, consumers engage in the process of both defining and creating value. The co-creation experience of the consumer becomes the very basis of value” (p. 5).

We have seen so far two fundamental characteristics that define a service that is ready to be provided. On the one hand, when offering a service, a provider needs to take into consideration that the production and the consumption of the service will be simultaneous. Another key aspect is maintaining a positive relationship with customers and other stakeholders. But what lies behind all this process?

We argue that the knowledge of the provider and its own resources are not sufficient *per se* in order to deliver a whole value package. Services need a strong internal integration, but also a constant external interaction. This is visible precisely when defining innovation. There is some innovation that comes from firm's own processes, yet many inputs for leveraging innovation in services will come from external sources (e.g. data collected from customers usability, or partners feedbacks). We expand this argument as follows.

2.4. Innovation in Services

Innovation in service organizations is a process that is performed through a firm's given technological setting and through established routines, which involves both firm's own and customer's resources. In this matter, value is co-created by provider and customer in an interactive process, both internally and externally (Sundbo & Gallouj, 2000). More precisely, Gustafsson, Snyder and Witell (2020) define innovation in services as "a new process or offering that is put into practice and is adopted by and creates value for one or more stakeholders" (p. 4).

Evidently, innovation in services shares commonalities with the traditional concept of innovation and benefit from innovation strategies and capabilities that have been found in the manufacturing sector (Leiponen, 2012). It follows the steps of first sourcing information for ideas generation, to finally leveraging something new into the market and trying to find means of protecting the innovation. But services, in essence, are a performance, they are processes coordinated to deliver a result.

For that reason, service innovation does not follow a technological path, but trajectories in which technologies are only one vector among several others (Gallouj & Weinstein, 1997; Sundbo, 1997; Toivonen & Tuominen, 2009). For instance, "the use of formal R&D or patents systems are much less relevant in service-based firms than for goods-based ones" (Rubalcaba et al., 2012, p. 698). Likewise, many ideas for service innovation come from daily business activities and from the interaction with customers and partners. Direct customer requests,

follow-up of customers' problems and acquisition of customer feedback are all information sources that can result in new ideas (Toivonen & Tuominen, 2009). This way, innovation in services may deal with changes in the product, the process, the organization or managerial practices, and the market a firm serves (Sundbo & Gallouj, 1998). In essence, a better service offering is possible through both radical or incremental changes to improve capacity management, customer interaction, personnel behavior, and many more reasons. These changes can be implemented using or modifying service organizations' existing resources and capabilities (Agarwal & Selen, 2009). Hence, service innovation in general involves the development of new procedures and concepts rather than new core technologies (Nijssen, Hillebrand, Vermeulen, & Kemp, 2006).

Today's theories of service innovation share a broad view of innovation, understanding that this process is not serial, but interactive through cross-functional actors (Toivonen & Tuominen, 2009). For instance, the development of relations between firm and customers through stronger engagements becomes pivotal in the development, design, and delivery of new products and services (Agarwal & Selen, 2009). In fact, service innovation aligns internal and external actors and their knowledge and resources as parts of an interdependent service system (Jonas, Roth, & Möslein, 2016). This characteristic adds complexity to the process, but also provides a competitive advantage for the firm that is able to properly manage these relationships. To achieve that, a firm integrates stakeholders by "balancing resources, embracing cultural as well as environmental challenges, and making decisions about timing, communicating with stakeholders in the right way, and establishing or maintaining a stake created with the respective service innovation" (Jonas, Roth, & Möslein, 2016, p. 321). As the literature shows (Jonas, Roth, & Möslein, 2016), external relationships with suppliers, partner organizations, outside collaborators (such as non-users), the public, universities, research centers, funding agencies, and associations, make the integration of such external resources and outside knowledge a "potential to foster unique service innovations and more radical innovation" (Jonas, Roth, & Möslein, 2016, p. 322).

One might suppose that innovations might happen during the execution process because every delivery is different from another. From one perspective it is true, even though variability is an intrinsic characteristic of services. However, in this point we agree with Drejer (2004), who argues that "an innovation, which can contribute to economic development and promote growth and welfare, has only taken place when a new element is developed, which can be applied in relation to several customers" (p. 557). Therefore, an activity that is performed during a single case is only considered a piece of learning, not an innovation. The formalization of this

new knowledge is required to change the service itself or to create a new service. Though each service act includes some unique features, they are not innovations, just as tailor-made solutions are not. An innovation will be developed, however, if its replicable elements are identified and applied in other cases (Toivonen & Tuominen, 2009). On a time frame, formalization occurs after the provision of the service and, in general, is not performed by the front line operator, but by a back-office actor supporting the process. As Toivonen and Tuominen (2009) explain: “the clarification of the service offering achieved through formalization provides new added value both to the service provider and the client, and makes the service easily reproducible” (p. 900).

Yet, it is important to differentiate innovation in services from organizational learning. In the case of services, innovation “is not based on scientific development as a R&D department but on its function of generating and collecting ideas and sorting them according to the strategy. The innovation process is generally an unsystematic search-and-learning process” (Sundbo, 1997, p. 453). In this sense, the service innovation process is essentially interactive, in which the service provider maintains internal and external links that lead to innovation (Vargas & Zawislak, 2006).

The factors described in previous sections also make clear the importance of clients and their interface in the innovation process. In addition, there is a multiplicity of possible actors involved in innovation, causing firms to more frequently apply interactive models of innovation over the traditional linear models structured around the existence of a specialist R&D department (Djellal & Gallouj, 2001). Hence, recently scholars have combined this different approach of the innovation process with other perspectives, such as open innovation (Chesbrough, 2011, 2012), servitization (Lightfoot, Baines, & Smart, 2013; Kreye, Roehrich, & Lewis, 2015; Peillon, Pellegrin, & Burlat, 2015), and platforms (Gawer & Cusumano, 2014; Lusch & Nambisan, 2015).

A final remark on this topic is that, as we argue, what lies behind innovation in service firms is the importance of knowledge and how it flows in the organization through those internal and external links. Knowledge as a competitive asset is particularly critical to sustaining firms’ innovative performance (Mina, Bascavusoglu-Moreau & Hughes, 2014; Schneckenberg, Truong, & Mazloomi, 2015). Service firms have also been found “to rely heavily on information and communication technologies and non-R&D innovation expenditures and seem to use more external knowledge sources than manufacturing. They also appear to collaborate more frequently with their customers and suppliers” (Mina, Bascavusoglu-Moreau & Hughes, 2014, p. 854). The degree of similarity between services and manufacturing innovative behavior increases as the intensity of knowledge applied into the business also increases (Mina,

Bascavusoglu-Moreau & Hughes, 2014). Particularly, knowledge-intensive business services (KIBS) have been reported as playing “a role in diffusing knowledge to the various firms and organizations they work with through contract research, educating students and providing training to personnel of client firms” (Den Hertog, 2000, p. 518). As those businesses cooperate with clients, strengthening their innovation capabilities, KIBS also take advantage of these knowledge resources that are developed and interchanged during the service provision (Den Hertog, 2000).

While services are recognizably relational activities and their production occurs simultaneously with consumption, understanding the innovative behavior of a service provider means understanding the very logic of services. As the frontiers of knowledge that will support a service are more fluid and less determined, exchanges with customers are not only of value. We can say that a service is essentially an activity based on knowledge and knowledge dynamics. And this means knowledge’s internal and external dynamics and its dynamic of change over time. What we mean is that innovation happens, of course, in a more traditional way, on purpose, as a result of an effort to do so, but at the same time it happens within an interactive relationship. In this sense, the innovative behavior of service organizations is not a linear, procedural task. It is, above all, relational. And that should have an impact on the innovation capabilities of service providers. This is what we address next.

3. The Innovation Capabilities Approach

It has been reviewed so far services specificities, and the defining characteristics that differ them from other economic activities. Intangibility, heterogeneity, inseparability and perishability impose lots of challenges to service firms, adding to them the crucial role of customers to provide their own resources for the service to be produced. What we argue next is that innovative firms are those who manage resources in a process of constant learning, which knowledge is translated into routines that sustain competitive advantages for the firm. The collection of those routines are called innovation capabilities. However, innovation capabilities in services should take into consideration services specificities on how to change those routines.

3.1. Definition and Origins

Mainstream microeconomics tells us little about the dynamic allocation of resources, and the sources of firm-level competitiveness, innovation, and ultimate growth in profits (Teece, 2019). It is true that every firm is embedded in a sectoral environment with a given technology as standard, that is, with elements that give certain homogeneity to its actors (Dosi, 1982; Nelson, 1990). However, when firms compete on a market what makes difference are not the elements they share, but precisely what each firm can do differently. In essence, how the firm manages its innovation capabilities. It is firm's accumulated knowledge on how to innovate that can make them successful and sustain competitive advantages. Dosi, Nelson and Winter (2000) address those issues through an heterogenous perspective of economic agents and explain that "to be capable of some thing is to have a generally reliable capacity to bring that thing about as a result of intended action" (p. 2). Therefore, through the analysis of firm capabilities it is possible to conceptualize the elements of continuity and idiosyncrasy that are central to the evolutionary view of firm behavior.

The literature on "capabilities" has introduced different concepts around the term, and in many cases even treat them as synonyms. Some recognizable micro level concepts on how firms manage their resources strategically are, for instance, technological capabilities (Lall, 1992; Bell & Pavitt, 1995), absorptive capacity (Cohen & Levinthal, 1990; Zahra & George, 2002), core competences (Prahalad & Hamel, 1990), organizational capabilities (Chandler, 1992; Dosi, Nelson, & Winter, 2000), dynamic capabilities (Teece, Pisano, & Shuen, 1997;

Eisenhardt, 2000), and innovation capabilities (Guan & Ma, 2003; Yam et al., 2004; Wang et al., 2008; Forsman, 2011; Zawislak, et al., 2012).

In this sense, in our understanding, innovation capabilities are a set of knowledge and other resources (e.g. know-how, financial or physical assets, human capital etc.) that are firm specific and are needed to develop efficient solutions in different dimensions of the business. These assets are incorporated into routines that convey the ability to mobilize these resources and perform coordinated activities to achieve a goal that purposefully create, extend or modify a firm's resource base in a process of constant learning and exchanging information through the firm's human capital (Nelson & Winter, 1982; Amit & Schoemaker, 1993; Helfat & Peteraf, 2003; Winter, 2003).

3.2. Innovation Capabilities in Services

Although innovation in services is relational and there is simultaneity between production and consumption, making the role of customers extremely relevant, the innovation process begins at the provider. Innovation capabilities are, therefore, a firm's ability to integrate key capabilities and resources to successfully stimulate innovation (Lawson and Samson, 2001). So the study of innovation capabilities in services has to start precisely from where the innovation process begin: the provider.

These capabilities are defined on how the firm manages resources that are valuable, rare, non-imitable and irreplaceable (Barney, 1991). However, for services, a portion of the resources needed to provide them do not have these characteristics. Consumer resources are actually accessible to all competitors in the market. So, what will really be a differentiator is how the firm orchestrates its service delivery system so that it is able to realize the real needs of their customers and develop offerings that solve problems efficiently and effectively. Moreover, for services it is also required to understand how the relationship with customers and other stakeholders will influence the way the service provider organizes the resources from all these actors and learn in this process.

The literature on service innovation has identified the need to define how firm capabilities, processes, and tools might support a better understanding and improvement of how to make things different (Rubalcaba et al., 2012). This is why some scholars have discussed service innovation capabilities and crafted their own conceptual models. A majority of studies on this topic date roughly from the last fifteen years, which indicates still available gaps to be covered. Although some of these studies have gathered empirical data to measure the fitness of

their propositions, others rely on theoretical assumptions and come up with a new conceptual model. Notably, most of these studies have focused their discussion on two separate characteristics that express our argument of internal and external influence of service innovation. First, they frame their ideas around capabilities for new service development (see Froehle & Roth, 2007; Gryszkiewicz, Giannopoulou & Barlatier, 2013), which in our view represents internal determinants of innovation; or second, they have explored innovation within a dynamic capabilities approach (see also Agarwal & Selen, 2009; den Hertog, van der Aa & de Jong, 2010; Pöppelbuß et al., 2011; Kindström, Kowalkowski & Sandberg, 2013; Janssen, Castaldi & Alexiev, 2016), expressing the firm's ability to interact with the external environment and adapt to it.

Froehle & Roth (2007) propose a theoretical framework that integrates process- and resource-oriented perspectives of new service development (NSD). For doing this, they scan the literature and ask experts to find constructs of practices adopted in many organizations. Also, Gryszkiewicz, Giannopoulou and Barlatier (2013) recognize a majority of conceptual papers on the topic of innovation capabilities in services. From that, they have carried out field work and found capabilities and practices, but also focused exclusively on new service development.

On a second stream of studies, Den Hertog, Van der Aa and De Jong (2010) identify a set of six dynamic capabilities for managing service innovation and organize them in a conceptual framework. The authors propose that “successful service innovators outperform their competitors in at least some of these capabilities” (p. 505). Their effort was to link a service perspective to a dynamic capability view of firms. Another conceptual study about dynamic capabilities and its linkage to services was made by Pöppelbuß and colleagues (2011). These authors based their study on a literature analysis and propose a new framework which structures service innovation capability into the areas of sensing, seizing, and transformation. In addition to those works, Kindström, Kowalkowski and Sandberg (2013) conducted a qualitative study with eight manufacturing firms. As the authors explain, “there is a need for product-centric firms to compete in the market by adding services to their portfolio, which requires a greater focus on service innovation if they are to remain competitive” (p.1063). Therefore, they assume that firms must develop dynamic capabilities to enable service innovation and suggest “micro-foundations” for sensing, seizing, and reconfiguring capabilities. In conclusion, the study claims that the “research extends the existing literature on dynamic capabilities by specifically addressing their application to service industries” (Kindström, Kowalkowski & Sandberg, 2013, p. 1070) and acknowledges that “because service innovation requires changes throughout

the organization, firms must adopt a multidimensional perspective on service innovation” (p. 1071).

Still on a dynamic capabilities approach but now on a quantitative basis, Agarwal and Selen (2009) depart from the dynamic capability view and explain that “higher-order capabilities” emerge within service organizations through collaboration and education of the stakeholders and these capabilities will lead to “elevated service offerings”. The authors mention that they have “primarily employed qualitative methods to explore and demonstrate the existence of collaborative structures across partnering organizations” (p. 444), and they have also collected survey data. They conclude that there are some capabilities that impact service innovation, particularly those involving collaboration. On this same quantitative scheme, Janssen, Castaldi and Alexiev (2016) draw upon the work of Den Hertog and colleagues (2010), operationalizing a refined version of their model of dynamic service innovation capabilities. The authors found that, although distinct, the dynamic capabilities they tested were correlated (Janssen, Castaldi & Alexiev, 2016). They have also argued that many papers on firm-level capabilities for service innovation are conceptual frameworks and suggest their final model as a tool to measure and compare innovation results.

Here we should mention how we think different from current literature and make clear the gap we are trying to cover. In our view, the analysis of service organizations should take into consideration a broader understanding of innovation capabilities and account for different forms of innovation. As well as new offerings (NSD), service organizations also deliberately alter their internal resources and routines to come up with different organizational processes, achieve new markets, design a new business model, or even define a new interaction form with their customers. This argument agrees with Schumpeter’s (1934) seminal definition of innovation, which comprehends the introduction of new products, new methods of production, opening new markets, and so on. In addition, the dynamic capabilities approach, although relevant for comprehending how firms adapt to their external context, in our view does not independently capture the innovative behavior of service firms. The capabilities it presents are spread through the organization in a complex way, making it hard to recognize how to coordinate those capabilities. More importantly, this characteristic difficult practitioners comprehension of how to implement such changes.

This way, we suggest the analysis of innovation capabilities in service organizations should consider two distinct moments in an integrated way. The first is dedicated to internal development and definition of the service contours, the processes, the management model. The other moment takes into consideration the external relations, where the boundaries of

capabilities are shaped as the service is provided, in particular with the participation of users. The conceptual model we present next takes this approach into consideration.

3.3. Defining a Conceptual Model

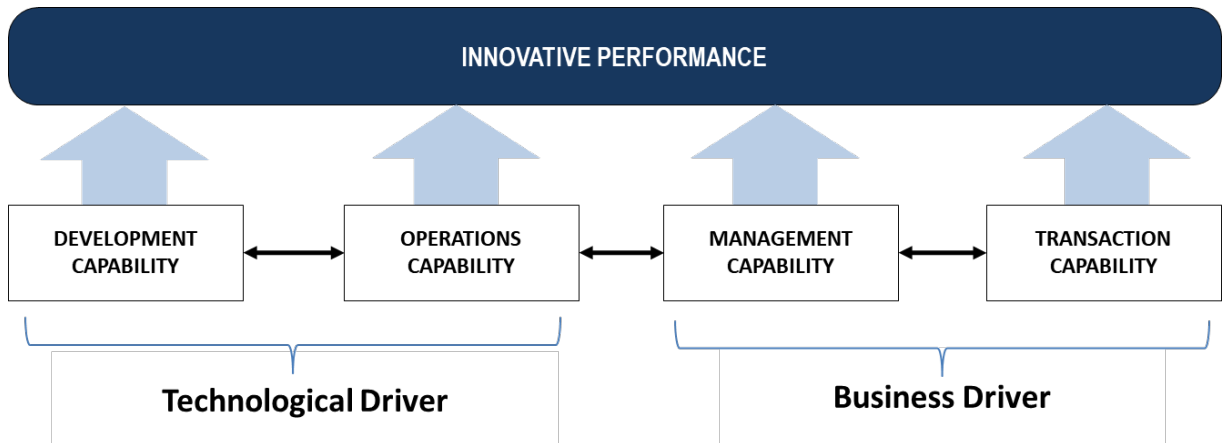
We present next a comprehensive framework of innovation capabilities that establishes four key capabilities which account for multiple forms innovation. The model has been previously tested, and from it we will draw adaptations to the specificities of services. This way we will be able to depict the elements of innovation capabilities in services in more detail and get closer to a practical verification.

3.3.1. An Innovation Capabilities Framework of Analysis

Early studies on capabilities have focused their arguments on firm's "technological capability" (Lall, 1992; Bell & Pavitt, 1995) as the required structure to innovate, which is manifested in R&D departments. Other authors have appropriated the term "innovation capabilities" and tried to operationalize it (Guan & Ma, 2003; Yam et al., 2004). In both those streams, the capabilities a firm organizes to innovate are considered exclusively in an industrial setting. However, since innovation may be the result of a complex process and depend on a set of complementary capabilities, it is often dispersed throughout company's structure (Zawislak, Fracasso & Tello-Gamarra, 2018). Moreover, firms that generally do not invest in technological capabilities, which is the case of services, may also present innovative performance.

Considering those arguments, Zawislak et al. (2012) propose a model that understands innovation capabilities as the firm's technological learning process, translated into product development (Development Capability) and operations of that technology (Operations Capability), as well as managerial (Management Capability) and transactional routines (Transaction Capability). The integration between those four capabilities effectively promotes innovation, which creates competitive advantages for the firm (Zawislak et al., 2012, 2013, 2014; Alves et al., 2017). This particular framework is the result of a series of studies and have been empirically tested with a sample of over 1.300 firms in multiple manufacturing sectors. Because of that, Zawislak's et al. (2012) presents a model which validity and applicability have already been proved. The framework is described in Figure 2.

Figure 2. Innovation Capabilities Framework



Source: Adapted from Zawislak et al. (2012)

The model is composed by two main drivers: the Technological Drive and the Business Driver. The technological aspect concerns knowledge creation, assimilation and application, and implies product and process innovation. Business capabilities are more related to strategy and administrative issues, transforming knowledge into management of people and organizational capacity on the one hand, and marketing and customer relations on the other. The model thus considers organization and firm on an integrated way, or in other words, it understands the necessity of a coordinator-entrepreneur that is able to both create demand for the firm but also to organize its resources in a proper manner. It is that ability that makes a firm capable of constantly change itself to respond to market necessities. Initially developed focused on manufacturing settings, the model assumes that every firms should have, even in different measures and impacts, all four capabilities (Reichert et al., 2016; Alves et al., 2017). Therefore, on Table 3 we present the definitions Zawislak and colleagues provide for each innovation capability, as well as which innovation types they produce as outcome.

Table 3. Innovation Capabilities Description

Capability	Definition	Innovation types
<i>Development Capability (DC)</i>	The ability that any firm has to interpret the current state of the art, absorb and eventually transform a given technology to create or change its operations capacity and any other capability aiming at reaching higher levels of technical-economic efficiency.	This type of innovations encompasses the development of new design, new materials and new products. In addition, they include the development of machinery, equipment and new components.
<i>Operations Capability (OC)</i>	The ability to perform the given productive capacity through the collection of daily routines that are embedded in knowledge, skills and technical systems at a given time.	This type of innovation encompasses new processes, improvements in existent processes, introduction of modern techniques, new layouts, etc. It allows the firm to produce products with quality, efficiency, flexibility with the lowest possible cost.
<i>Management Capability (MC)</i>	The ability to transform the technology development outcome into coherent operations and transaction arrangements.	This type of innovation encompasses the development of management skills which reduce the “internal friction” between different areas of the firm. It is intended to create new methods of management and new business strategy, improve decision making and inter-functional coordination, etc.
<i>Transaction Capability (TC)</i>	The ability to reduce its marketing, outsourcing, bargaining, logistics, and delivering costs; in other words, transaction costs.	This type of innovations encompasses the development of ways to minimize transaction costs with suppliers and customers. It is intended to create new commercial strategies, improve relationships with suppliers, streamline market knowledge, etc.

Source: Adapted from Zawislak et al. (2012, 2013).

Zawislak’s et al. (2012) innovation capability model seems to be a coherent framework to depart our discussion. Although markedly adjusted to manufacturing firms, the model is concise, simple, and is applicable in many industries. Still, it lacks some core characteristics of service organizations. As already mentioned, services operate in a different logic when compared to manufacturing industries, especially because of its relational character and the simultaneity of production and consumption. Thus, the following section draws a literature review to describe the key characteristics that should be integrated into a framework of innovation capabilities in service organizations. We stretch the discussion for each of the four innovation capabilities proposed in Zawislak et al. (2012), adapting it to a service setting.

3.3.2. *An Integrative Framework*

Service innovation, in search of tangibility and replicability, presupposes the construction of a “productive process” more complex than a simple act of production and

consumption. While, on the one hand, the growing technological content of services gives them an increasingly focused character on development and management activities, on the other hand, relational content reinforces operational and transactional routines. In this sense, the formulation of an integrative framework of innovation capabilities in services should incorporate the interaction with customers in several phases of the innovation process. A service is provided by a firm, but it always only “materializes” within the interaction with the consumer. For the service to be provided, though, firms need to integrate resources they do not possess. It means that firms do not control customers’ resources. Therefore, firms need to create an environment into which the customer engage to get the result it expects. Also, each customer has heterogeneous resources by definition, theoretically making every service provision customized, constraining firm’s gains in scale, and elevating uncertainty. This will surely influence firm’s innovation capabilities.

Additionally, the critical point of service management is that customer relationship is also on the definition of service provision. Without customer interaction during the production/consumption process, the relation between both parties would be only transactional. Moreover, in many cases services also demand firms to collaborate with different players in a horizontal structure in order to deliver more specialized offers. Thus, service firms need on the one hand to create the settings and the environment to provide their offer, and on the other hand they need to engage and manage customer’s experience and their relationship with stakeholders. Therefore, when considering the service innovation characteristics mentioned above and coupling it with Zawislak’s et al. (2012) model of innovation capabilities, we suggest that a service innovation capabilities framework comprehends four capabilities which represent the basic innovation process: it starts from idea generation and knowledge searching, ending at the delivery of value for a customer. But distinctively, learning and structuring new solutions involve direct customer interface, the management of customer experience and the integration of external resources. Essentially, innovating through these capabilities alter the service encounter and concern efficiency, productivity and optimization gains. Accordingly, from this constant interaction, firms are able to continuously collect data on how to improve processes and overall performance. Combined, the four innovation capabilities affect firm’s innovative performance. Therefore, on Table 4 we present again the current definition of innovation capabilities provided by Zawislak et al. (2012), associating it with the literature they draw upon. In addition, we display specific elements of services that should be integrated into that definition for each innovation capability, also emphasizing the literature we are based.

Table 4. Conceptual Differences Between Manufacturing and Services

Capability	Manufacturing	Authors	Services	Authors
<i>Development Capability (DC)</i>	The ability that any firm has to interpret the current state of the art, absorb and eventually transform a given technology to create or change its operations capacity and any other capability aiming at reaching higher levels of technical-economic efficiency.	Lall (1992); Bell & Pavitt (1995); Iammarino, Padilla-Pérez, & Von Tunzelmann (2008).	<ul style="list-style-type: none"> • Arranging available technology; • Co-creation; • Interactive process. 	Gallouj & Weinstein (1997); Prahalad & Ramaswamy (2004); Djellal, Gallouj & Miles (2013).
<i>Operations Capability (OC)</i>	The ability to perform the given productive capacity through the collection of daily routines that are embedded in knowledge, skills and technical systems at a given time.	Hayes & Pisano (1994); Ward et al. (1998); Chandler (1992).	<ul style="list-style-type: none"> • Uncertainty, variability, prevision difficulty; • Definition of rigorous, repeatable standard operational procedures; • Effectively communication with customers; • Adjustable user-producer interface; • Resource flexibility; • High customization; • Customer' resources integration into the service system. 	Schmenner (2004); Moeller (2008, 2010); Corrêa et al. (2007).
<i>Management Capability (MC)</i>	The ability to transform the technology development outcome into coherent operations and transaction arrangements.	Penrose (1959); Barnard (1966); Mintzberg (1973); Chandler (1977); Zawislak et al. (2012, 2013).	<ul style="list-style-type: none"> • Higher risk adoption; • Risk sharing with customers; • Managing the degree of interaction between employees and customers; • Effectively personnel training and engagement. 	Li, Yang, & Wu (2009); Lightfoot, Baines, & Smart (2013); Chang (2016).
<i>Transaction Capability (TC)</i>	The ability to reduce its marketing, outsourcing, bargaining, logistics, and delivering costs; in other words, transaction costs.	Coase (1937); Williamson (1985, 1999, 2002); Teece (1986); Argyres (1996, 2011); Madhok (1996); Langlios & Foss (1999); Cannon & Homburg (2001); Kotabe, Srinivasan, & Aulakh (2002); Mayer & Salomon (2006); Zawislak et al. (2011, 2012).	<ul style="list-style-type: none"> • Keeping the relationship during and after the service provision; • Trust and commitment; • Information sharing and transparency; • Informal exchange; • Managing customer experience and journey; • Customer retention and life-time value; • Loyalty programs. 	Berry (1995); Zeithaml, Bitner, & Gremler, 2010; Gaiardelli, Martinez, & Cavalieri (2015); Kreye, Roehrich, & Lewis (2015); Lemon & Verhoef (2016); Kumar & Reinartz (2016).

Source: Adapted from Zawislak et al. (2012, 2014).

Source: Elaborated by the authors.

In the case of service organizations, the Development Capability (DC) accounts for a different understanding of the development process. While in manufacturing this process is based on new technology for the creation of new products, materials, processes, etc., services concern much more new ways of arranging the available technology to deliver value for customers (Menor, Tatikonda, & Sampson, 2002). For doing this, managers in service organizations must be aware of the quality of co-creation experiences. Quality depends on the infrastructure for interaction between companies and consumers, and is oriented around the capacity to create a variety of experiences. Thus, the firm must efficiently afford experience environments that enable a diversity of co-creation events (Prahalad & Ramaswamy, 2004). The co-creation of new services occurs in an iterative way, as it promotes forms of tailor-made and ad-hoc innovation, implying an interactive organization of innovation rather than a linear organization (Djellal, Gallouj & Miles, 2013). The unique characteristics of services also influence the difficulty of patenting a new way of delivering a service or a new business model. That is why a technological capability is one in many other relevant factors to alter services innovation processes (Gallouj & Weinstein, 1997).

Now taking into consideration Operations Capability (OC), due to IHIP characteristics, the degree of uncertainty over the results that are delivered are generally high in service operations. Thus, this capability involves the routines to reduce uncertainties for both the customers, in the case of restrict means for previously evaluating outcomes (Moeller, 2010), and for the firm, that suffer from perishable resources. This reduction of uncertainty is made by defining rigorous repeatable standard operational procedures and effectively communicating it (Schmenner, 2004). Co-creation of value also acts reducing uncertainties, which demands in-depth and very time-consuming dialogue. Learning how the firm intensively interacts with customers (Prahalad and Ramaswamy, 2004) and change its processes, while keeps operational efficiency, is a key aspect in this capability as well. In addition, the degree of intensity of interaction between customer and service processes demand adjustable user-producer interfaces, greater resource flexibility, and a higher level of customization of the value package delivered (Corrêa et al., 2007). Because customers input their own resources (Moeller, 2008) and competencies (Gallouj and Weinstein, 1997) in order to receive the value they expect for, the operations of a service provider must be structured to incorporate it properly. The problem placed, as we have already mentioned, is that the firm who delivers the service does not own these resources, thus it can only orchestrate it indirectly. It is made by creating a system into which the firm learns, interacts, and responds to customer/user's resources while also deploying its own resources during the service provision.

For Management Capability (MC), one relevant aspect is that a firm cannot manage the resources it doesn't control. Therefore, this capability concerns the effective interaction with customers' and its resource integration. This elevates uncertainty for both firm and customer, which in turn raise the risks of a service operation (Li, Yang, & Wu, 2009). The risk that customers may take when consuming the service are, for instance, choosing his or her dish they want to eat in a restaurant, or the location they want to sit on a flight. They don't know how their experience will be. How it affects firm's operational efficiency and how to manage the resources in order to prevent issues becomes utterly important. In essence, a firm needs to take risks (i.e. higher costs) in order to provide its customers the possibility of deciding themselves how to use the service provided. Examples on this are the no-show prediction problems that airline or health companies face. As Lightfoot, Baines and Smart (2013) explain: "risk adoption (when a service provider undertakes activities that were formerly the customer's responsibility) and value creation appear to be pivotal factors when considering the design of service-oriented market propositions" (p. 1425). Thus, it is necessary for a firm to understand how to share the risks of operations with customers, rather than assuming all of it. This will establish the parameters for firm's managerial decision making on the degree of interaction between employees and customers during the service encounter, and also how the user experience, the perceived quality and the customer's expectations are managed and constantly adapted to face customers' needs (Chang, 2016). In such cases, the attitude of the employees, the level of their training and their engagement with the company alter the quality of the service delivery and the satisfaction perceived by customers. All those risks mentioned will affect the strategic diversification of offers that the service firm carries out, the business model it applies and the strategic management for evaluating what competitive advantages the firm will perceive. In addition, Management Capability encompasses ensuring quality and standardization of services provided in every office, operation, or unit of the company, either proprietary or franchised units.

Finally, in contrast with goods transactions, the relationship between customer and service provider doesn't end right after the transaction itself. A Transaction Capability (TC) in services encompasses the ability to keep this relationship and collect feedback on the utility of the service that has been provided. The superior consumer centricity that services employ make a shift from a transaction to a relationship focus (Vargo & Lusch, 2004), thus the transaction is encompassed in this relation of using and producing the service, which occur simultaneously. Likewise, as the level of service firm's offerings increase in complexity, it becomes important to comprehend how they develop and maintain relational capabilities (value-in-context) instead

of an only contractual capability (value-in-exchange) (Gaiardelli, Martinez, & Cavalieri, 2015). Therefore, a capability to maintain relationships is “derived from values and processes in the exchange relationship and incorporates the following: trust and commitment, relational capital, information sharing routines and informal exchange” (Kreye, Roehrich and Lewis, 2015, p. 1235). Coupling access to information with transparency enhances the consumer’s ability to make informed choices and impacts its perception of quality. Also, the combination of transparency and risk assessment enhances firm’s ability to co-develop trust (Prahalad and Ramaswamy, 2004). Innovating in the whole customer experience, retention actions, relationship management, trust building and customer education are all relevant components to be covered (Lemon & Verhoef, 2016; Kumar & Reinartz, 2016). Hence, successful firms recognize the necessity to ensure close customer relationships and establish routines that grow new relationships with higher levels of customer engagement and intimacy (Berry, 1995). There is a move to diverge from transaction economics that raises challenges to the development of more relational approaches of management, considering approaches that also account a social dimension of business exchange (Lightfoot, Baines and Smart, 2013).

It is interesting to notice that all four innovation capabilities in services present aspects that are either internal (based on firm’s competences) or external (based on relationships). For instance, the Development Capability of service firms involves, as we have seen, an internal activity of assimilating available technology into the processes that already exist inside the firm. At the same time, the development process may also involve external actors for co-creation. On the other hand, in the case of Operations Capability it may be more evident its external character because there is a clear interface with customers in providing the service. However, there are also many production routines that take place internally before and after having contact with customers. Management Capability is perhaps the most internally predetermined among the others, that is, with less external influence. As we have seen, it involves goals and indicators that will guide the provider’s decision making process on how to maintain efficiency and quality at low risk. Finally, the Transaction Capability is the most likely to external influences of all capabilities in our model. It is shaped according to the interaction with customers and partners.

Until now we have described a characterization of services, identified key characteristics that influence service organizations (i.e. production and consumption simultaneity, focus on relationships, and innovation), and defined innovation capabilities. Based on the framework proposed by Zawislak and colleagues (2012), we have also provided

conceptual adaptations to be made into their four innovation capabilities (e.g. development, operations, management, and transaction) to incorporate some services specificities. But as we mentioned, we still cannot precisely define the elements comprised in this set of capabilities in detail because we still need to verify their empirical fitness. Moreover, some links in our argument are still missing, for instance the impact of multiple stakeholders orchestration for service delivery, how the close relationship with customers influence the innovation process and shape firms' capabilities, or how each capability relates to the others. To address those issues, we carried out an exploratory empirical research, thus the following section comprehends the method of this investigation.

4. Method

The literature review presented so far indicates some efforts on current literature that enabled us to build a conceptual model of innovation capabilities in service organizations, but there are gaps still to be covered. Thus, following the objective of this research “to identify the elements of innovation capabilities in service organizations”, it becomes necessary an empirical effort with a qualitative approach to uncover what routines and activities comprise those capabilities. Therefore, the following step in this study was to perform a firm-level research with an exploratory character to verify how firms organize their innovation capabilities. We selected six service organizations and conducted semi-structured interviews with managers and executives. We also collected secondary data in multiple sources in order to validate the content of the interviews. The procedures to carry out all these steps are described as follows.

4.1. Cases Selection

An exploratory research using case study method requires strict criteria to select the targeted firms (Yin, 2001). Additionally, as suggested in the literature (Stake, 1995), for this kind of research the case studies play a supportive role, illustrating the understanding of a theory. Because of that, we designed a deep investigation of six service firms following the typology proposed by Gadrey (2000) and presented in previous sections⁴. As the author mentions, there are three “demand rationales” for services: assistance or intervention rationale, provision of technical capacities rationale, and entertainment or performance rationale. For the purpose of this study, we decided to encompass only the first two rationales. The decision to not consider “live performance rationale” services is because of its little potential to increase productivity, depending basically on human interaction. As Gadrey (2000) explains:

For its part, the live performance rationale remains characterized by the simultaneity and spatial proximity of production and consumption. Broadcast performances depart from this rationale to move closer to one based on access to broadcasting capacities, although those capacities are sustained by programming activity. The situation is, therefore, a hybrid one. (p. 385)

⁴ Some recent studies have cited Gadrey’s (2000) work as well. Although not using Gadrey’s rationales as categories of service firms as we do, those studies express the importance of comprehending the interaction between many actors involved into the process of service provision (forming the “service triangle”). For further reading, see Spring and Araújo (2009), Den Hertog, Gallouj, and Segers (2011), Grönroos (2012), Kaczor and Kryvinska (2013), and Carlborg, Kindström and Kowalkowski (2014).

This would also be close related to Hill's (1999) "intangible products" concept mentioned before, which is also not our interest in this study. A hybrid situation is also not interesting because it may generate imprecision on the results that follows. In addition, "it is interesting to note that 'Baumol's law'⁵ on the cost disease that afflicts certain services applies in particular, ill the famous illustrations provided by the author, to the live performance rationale" (Gadrey, 2000, p. 385).

Therefore, there are two main criteria to select the cases for this research. First, we searched for mature firms that have, at least, five years of operations and stable revenue streams. The reason for this is that mature companies have well-defined routines and capabilities, which is exactly what we want to identify. On contrary, less mature companies do not have a consolidated structure. In addition, the innovation capabilities model proposed in Zawislak's et al. (2012) study assumes that every firm has all four capabilities and none of them are null, thus scrutinizing a successful innovative firm should unveil how innovation is organized. A second criterion for selecting cases is that the group of firms in the study should cover both those that provide services to corporate clients (b2b) and those dedicated to final consumers (b2c). This allows a clearer perspective of the nuances that different service activities may present in terms of customer relationship, internal organization, etc. The selected firms are listed on Table 5.

Table 5. Selected Cases Overview

Firm	Type	Market	Sector	Foundation	Employees	Revenue
<i>TransportCo</i>	Assistance/ Intervention	B2C	Transportation	1939	1.100	R\$ 300M
<i>FinanceCo</i>	Technical capacity	B2C	Financial services	1902	28.000	R\$ 1B
<i>ConsultingCo</i>	Assistance/ intervention	B2B	Management consulting	2007	350	R\$ 100M
<i>ChatCo</i>	Technical capacity	B2B	Information technology	2003	200	R\$ 350M
<i>CoffeeCo</i>	Assistance/ intervention	B2C	Food services	2004	160	R\$ 16M
<i>BurritoCo</i>	Assistance/ intervention	B2C	Food services	2010	36	R\$ 5M

Source: Elaborated by the authors.

The companies were carefully selected to represent diverse economic sectors, therefore minimizing sectoral biases on the results. Another relevant aspect is that firms are also diverse in size (both in number of employees and annual revenue), which aims likewise to mitigate size

⁵ cf. Baumol & Bowen. (1996).

bias. This way, the cases selected for this study represent diverse types of services, operate in varied markets and sectors, and have different sizes. All those characteristics enable the identification of distinct forms of how firms organize their innovation capabilities according to their idiosyncrasies. It is also worth mentioning that the firms selected are original from three different Brazilian states (Rio de Janeiro, Santa Catarina, and Rio Grande do Sul), but many of them operate in multiple locations across the country. A brief description of each firm covered in this study is presented next. It is worth mentioning that the cases were analyzed and the results will further be presented not individually, but on an integrated way.

4.1.1. TransportCo

TransportCo is a company founded in 1939 by two cousins in a small city in the countryside of Rio Grande do Sul. Now in its third generation, the company is still directed by the founding family, but has also invested in professionalizing its executive board. The sector in which they operate is primarily long-distance road passenger transportation, although the group operates in other segments as well (i.e. short distance transportation, water transportation, small packages shipping services, and snacks bars). The company has 1.100 employees and a fleet of over 200 buses.

The clients of TransportCo are in essence people who travel to visit a relative, eventual tourists, liberal professionals who travel on business, students, and there is also those clients who travel to make a medical appointment in another city. Their lines of buses for passenger transportation are present in nine different states in Brazil, reaching over 400 destinations. The company has more than 450 thousand passengers registered on their client base, which generated a total of R\$300 million in revenue in 2019.

4.1.2. FinanceCo

In the early 20th century, the first credit union in Latin America was founded in Rio Grande do Sul (Brazil) as the germ of what would become FinanceCo nowadays. The company had several ups and downs, but reorganized itself during the 1980s and grew thoroughly in the 1990s. Today, FinanceCo is a major financial institution in Brazil, with over 28.000 employees spread in more than 1.900 agencies across the country. FinanceCo controls more than R\$120 billion in assets, and has a revenue of one billion Brazilian reais a year.

Their portfolio of over 300 services cover credit, investments, credit cards, payments, insurances, and many other offerings that make them a complete financial services provider. Their 4.5 million clients are located particularly on small and medium-sized cities, making the company relevant mainly because of its presence where there is no other financial institution. The company has a strong proximity to farmers and is specialized in the provision of agricultural credits.

4.1.3. ConsultingCo

ConsultingCo was founded in 2007 by four friends in their mid-twenties who were finishing their master's degrees in Production Engineering at UFRJ but did not see themselves in the academic career. Instead, they preferred to put into practice the knowledge they acquired and decided to open a management consulting company. Their objective was to bring together the best of both worlds: the same conceptual strength they had as academics, with a market orientation. The firm now has over 350 employees distributed in five offices in Brazil and a revenue of around R\$100 million per year.

The firm offers management consulting services integrating three major competencies: technology, analytics, and management. This way, ConsultingCo services cover many management practices, such as strategy, finances, and operations, and they are able to support clients in many industries. Clients are usually large organizations, both private companies and public agencies.

4.1.4. ChatCo

In 2003, two young friends recognized the possibility of entering the market of customer relationship after having succeeded in a previous web-based business. That was the source of ChatCo, a software company located in Porto Alegre, Rio Grande do Sul. What once was a business born in the garage of one of the partners' grandfather's house, now is a software company with 200 employees, 8.300 clients, and over R\$350 million in revenue per year.

ChatCo offer a communication solution between their clients and end-users. Their purpose is to empower companies so that they can improve their communication and interaction with their customers. ChatCo tools work with multiple medias (text, voice, etc.) through varied platforms, such as messaging apps, email, and specially SMS. Among their clients are large Brazilian banks, retailers, and e-commerces, but the majority of customers are small businesses.

4.1.5. *CoffeeCo*

CoffeeCo is a sixteen-year-old coffeeshop found by a couple in Florianopolis (Santa Catarina) and located just by the beach. She was born in Brazil and is the granddaughter of Italian coffee farmers. He is from the USA and is also the grandson of Italian immigrants, who made their life with businesses in gastronomy. The couple met while she was studying in California and they decided to come to Brazil to combine their passion for special coffees.

Nowadays, CoffeeCo is a chain of 14 units located in Santa Catarina, and they also have another 4 units to open in three more Brazilian states. On total, the company has 160 employees and a revenue of R\$16 million a year. Their headquarter centralizes their concept store, which they call “flagship”, a coffee roasting business, which supplies the brand’s units and external clients, and the administration office. CoffeeCo serves more than 60.000 customers every month in all their units. Their expansion business model is through franchising and they plan to reach 250 units within the next years.

4.1.6. *BurritoCo*

BurritoCo was created in 2010 by three college colleagues in Porto Alegre, Rio Grande do Sul. At the time, they were 21 years old and were Business Administration students who had just arrived from international exchange programs. From the idea of bringing Californian Burrito to Brazil, the entrepreneurial spirit led them to create a business plan, get a loan and gather a team of people to develop the restaurant’s products and environment.

Today the company has three units: one located in São Paulo, another in Rio de Janeiro, and the parent unit in Porto Alegre. BurritoCo now has 36 employees in all their units (including their administration office) and a revenue of R\$5 million per year. Their goal is not to take the customer to Mexico or California, but to bring some of these places to Brazil. Therefore, they offer simple but quality burritos, tacos and nachos to their 15.000 monthly customers. The firm is also present in delivery platforms, which they mention represents a large portion of their income.

4.2. Data Collection

Qualitative research demands gathering multiple sources of data in order to mitigate biases and to validate the information. Interviews were made through videocalls and secondary

data were found on pages available on the internet. It is worth noting that all field research was carried out during the Covid-19 pandemic, in 2020.

4.2.1. Primary Data

We designed an interview protocol (Appendix A) based on the conceptual model presented on previous section and summarized on Table 4. Then we conducted semi-structured meetings with top management from the six firms selected. The aim was to obtain an in-depth perspective of how firms organize innovation through their different routines and activities. The protocol was divided in six parts. The first and the last parts correspond respectively to general information about the firm and broad questions about innovation. The other four parts include questions relative to each innovation capability. In those parts, the questions aimed to make a description of the main activities for that capability, how it is affected by relationships with customers and partners, how firms managed that capability, and how they promote change in that particular group of routines. All these detailed information will allow further analysis to depict the elements of innovation capabilities this study is looking for. Table 6 presents a summary of the interviews.

Table 6. Interviews Summary

Firm	Interviewees roles	Duration	Date
<i>TransportCo</i>	Chief Innovation Officer	75 minutes	March, 20 2020
<i>FinanceCo</i>	Head of Product (Manager) Product Analyst	73 minutes	March, 30 2020
<i>ConsultingCo</i>	Partner (Head of Innovation)	64 minutes	March, 31 2020
<i>ChatCo</i>	Chief Marketing Officer	61 minutes	March, 31 2020
<i>CoffeeCo</i>	Head of New Businesses Franchise Manager	84 minutes	May, 07 2020
<i>BurritoCo</i>	Chief Executive Officer	109 minutes	May, 07 2020
<i>Total</i>	<i>8 interviewees</i>	<i>466 minutes</i>	

Source: Elaborated by the authors.

On total, eight people were interviewed (both FinanceCo and CoffeeCo had two participants during the conversation). All interviews were recorded and transcribed for further

analysis. The duration of interviews sum 466 minutes, or approximately 8 hours of raw audio material.

4.2.2. *Secondary Data*

It is important to consider that the use of multiple sources of evidence is relevant to give significance to case studies results (Gil, 2007). Thus, we searched different sources of information, such as companies webpages, press articles, internet reviews, etc., to complement the discoveries, and requested firms' documents to triangulate the findings. Appendix B contains a list of the documents accessed, and Table 7 summarizes the 107 records consulted. A majority of records was found online, but the researchers also had access to documents provided by the firms studied.

Table 7. Documents Summary

Type of document	Number of records
Press articles	27
Slides decks	2
Videos	69
Webpages	9
<i>Total</i>	<i>107</i>

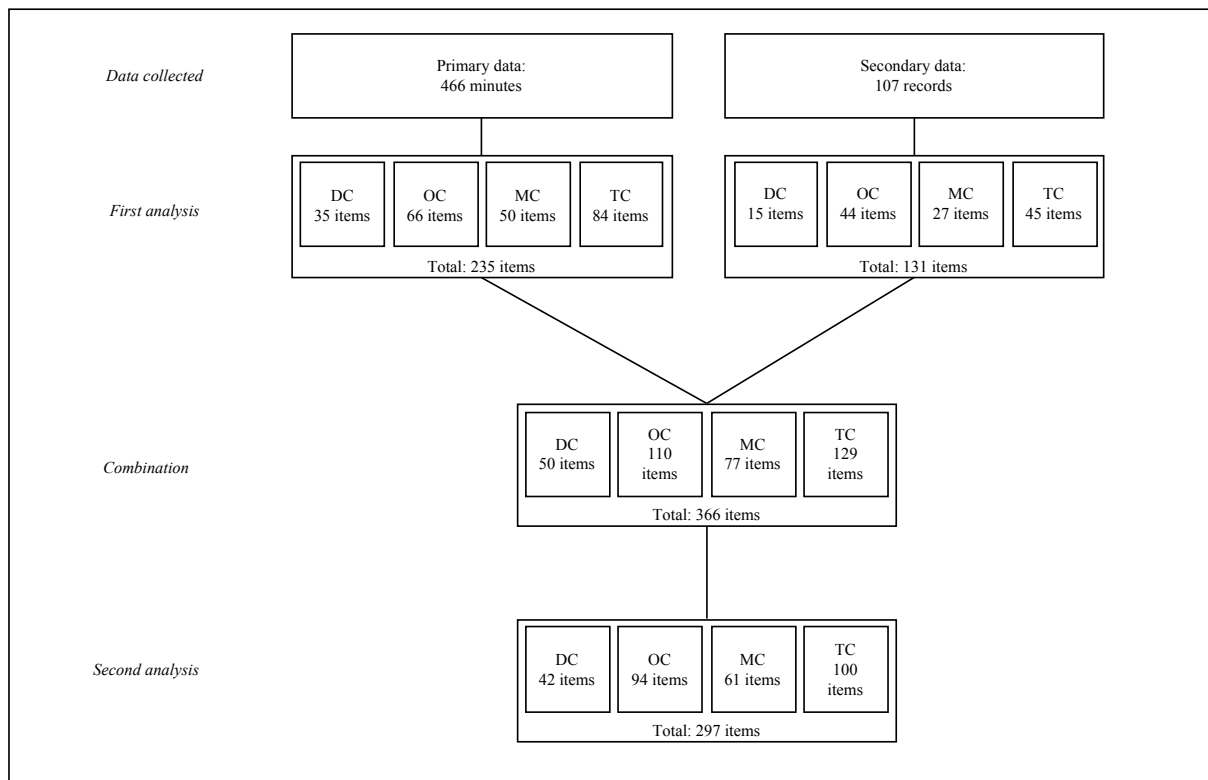
Source: Elaborated by the authors.

4.3. **Data Analysis**

All data collected was systematized for further content analysis (Bardin, 2009; Minayo, 2008) using MS Excel. According to Bardin (2009), this technique represents a set of communication analysis that aim to obtain, by systematic and objective procedures, the message content and indicators that allow the inference of relative knowledge. Therefore, on a first round of analysis, primary and secondary data were codified and classified into the four categories of analysis, which are the innovation capabilities in the model (i.e. DC, OC, MC, TC). The codification of primary data followed the structure of the research protocol already presented. It means that the items identified as comprised on "Operations Capability" derive from answers to questions on this segment of the research protocol. The same procedure was performed to all four categories of analysis. For secondary data, items were codified through first extracting the

content from the record being analyzed, and then approximating the content to the existing pool of items already codified as primary data. This way, we found 235 codified items in our primary data source and 131 codified items in secondary data. Those findings of both data sources were then combined, producing 366 codified items on total. A second round of analysis aimed to eliminate duplicate information, in which 297 codified items remained. The items in this final round were grouped into similar codes that we call “elements”, which will be presented on the results section next. The elements we found, therefore, are the routines, activities and processes we were able to extract and synthesize from each codified item. The procedures followed to analyze and codify all data is described on Figure 3.

Figure 3. Data Analysis Procedures



Source: Elaborated by the authors.

5. Results and Discussion

The main results of this study are twofold. First, it was possible to depict the innovation capabilities of service organizations, defining the elements each capability comprises. Second, some additional characteristics were able to be identified, leading us to an adjusted definition of innovation capabilities in service organizations. One of the characteristics this analysis sheds light is the multiple overlaps between routines, processes, and resources. Therefore, those routines, which in the case of manufactured goods the boundaries are sharper, present diffused boundaries in the case of services. Moreover, as a consequence, the clear identification of the elements enables the definition of an adjusted model of innovation capabilities in services. We discuss these issues as follows.

5.1. The Elements of Innovation Capabilities in Services

The elements that constitute an innovation capability provide the detailed routines, activities, resources, and knowledges that are involved in this category. Depicting these elements permits the identification of avenues for promoting change in organizational forms and processes to drive the innovative behavior of service organizations. As you will notice, some elements will appear in more than one capability. As we argue, this means that innovation capabilities in services are overlapped and that their boundaries are diffused. We stretch the discussion on this topic later.

Therefore, in this section we present the elements depicted from each innovation capability in service organizations and present a brief description of them. We support these findings with the data collected, quoting our interviewees to illustrate when appropriate (the quotes were translated from Portuguese to English). It is worth noting again that all case studies were analyzed together and are presented in an integrated way.

5.1.1. Development Capability

The results present six elements of Development Capability in services, which are synthesized on Table 8. This capability comprehends both external activities, such as interactions with multiple agents to gain insights or to co-create solutions, and internal activities like data collection and analysis and innovation projects management.

Table 8. Elements of Development Capability

Capability	Elements
<i>Development Capability</i>	<ul style="list-style-type: none"> • External interaction • Innovation management • Insights/cocreation • Quality and improvement • Research and development • Service design

Source: Elaborated by the authors.

External Interaction. This element corresponds to the involvement in innovation ecosystems, acquisition of players to expand service portfolio, strategic partnerships, or even external technical assistance to develop new offers. TransportCo, for instance, have a partnership with a major vehicles manufacturer which they collaborate for the development of in-car solutions that add value to their customers. Also, CoffeeCo uses the technical expertise of some suppliers in their development process. As the respondents of CoffeeCo mention: “It is really a partnership. He is a gastronomic super chef, we create together, he comes up with ideas and we develop together”. Another example of this element is provided by ChatCo. They have acquired a smaller company that provides a different technology, adding voice services to their prior text-only portfolio.

Innovation Management. Involves the definition of methods for innovation management, establishing criteria to determine R&D projects, activities for managing the innovation projects portfolio, and the definition of new projects success indicators. FinanceCo mentions the necessity of keeping track of new projects effectiveness: “[...] but with each update of our application, there will be some improvement that has been implemented. In fact, everything we implement within our teams has data monitoring, we have indicators on whether the change was worthwhile or not and we monitor it”. TransportCo corroborates with the relevance of monitoring indicators and of project management: “within the innovation area we are responsible for project management. We have tools for managing these projects and we also make bimonthly meetings for reporting to the board. We have indicators from the innovation area itself that serve as support, such as financial indicators, project success, project status, delivery on time or not, among others”.

Insights/Cocreation. This elements stands for the formalization of learnings during service provision, deliberately finding opportunities for new services during service execution, and the engagement of multiple actors to co-create solutions. The interview with ConsultingCo evidences the importance of finding opportunities during service provision: “I would say that it

is a more tacit process that is going on throughout the day-to-day of the project. You are there on a day-to-day basis, talking to the client, he will tell you about the pains he has, you will talk about the experiences you have had, then things will get together until you arrive at a concrete opportunity”. In addition, BurritoCo explains the moments they engage actors to generate insights when the firm cannot come up with solutions for a problem by itself:

The store is there selling 160 grant and it doesn't grow any more than that and then you look and think “we can't stand still”. That's when I say, since we don't have the idea, since we don't have the innovative insight, let's shake up the information, let's shift and bring new insights. This is one of the objectives, it is when we have a creative drought. Then you use a loyal customer, a friend, a friend of a friend, “no goers” (the guys that you know don't like the brand), so you bring the guys here. It's a brainstorming.

Quality and Improvement. In the case of Development Capability, this element represents the activities of standardization of methods and tools, or even the definition of teams to manage service improvements. For instance, ChatCo mentions that they have a dedicated team to deliver new features of their services: “customers of this new offer will not be served by a regular service cell, they are served by our Product Manager, by the product person”. At ConsultingCo and also at FinanceCo, teams are distributed across the multiple line of services. Each of these teams is responsible to develop their own tools and methodologies and to standardize their usage among every employee.

Research and Development. This element involves the group of activities of gathering information and translating it into projects of new services or processes improvements. In an early stage, this means being aware of market trends, understand consumers' behavior, conduct surveys with customers, partners and employees, promote technical visits, and attend fairs. FinanceCo synthesizes:

For example, for a credit product I cannot ignore data from outside because there is a lot of information available today. We also take into account what other financial institutions are doing, a lot of market analysis. But what we also use user research. We produce the data, either with our database or with other databases. In short there are several forms. I've done all kinds of research: online, interview, focus group. We have done a lot of things.

Service Design. Related to using design thinking and user experience techniques to develop new offerings. This element also involves formatting services according to customer segments and validating those new offerings. As TransportCo explains: “There is a whole methodology for this. We analyze customers' profiles, the business model, prototype, see adherence, test, retest, until arriving at a new service”.

5.1.2. Operations Capability

The elements comprised in the Operations Capability of service organizations are presented on Table 9. They account for all the aspects of running the service system smoothly from a firm perspective, and conveniently from a user perspective. Constant interactions between provider and consumer are at the core of this kind of capability.

Table 9. Elements of Operations Capability

Capability	Elements
<i>Operations Capability</i>	<ul style="list-style-type: none"> • Availability • Information sharing/communication • Breadth of knowledge • Quality and improvement • Service design • System orchestration • User engagement/trust • User integration

Source: Elaborated by the authors.

Availability. This means the ability to provide the service on multiple channels, including on digital. Expanding the network of physical service units, and implementing self-service tools are also relevant aspects. FinanceCo, for instance, offer their services through agencies spread over the country, internet banking, ATMs, mobile app, and telephone. CoffeeCo, on the other hand, currently has fourteen units and will open another four soon, all of them in different cities.

Information Sharing/Communication. This element consists on the definition of rules of use and informing users about benefits, rights and duties they have with the service. It is the firm's ability to reduce customer uncertainties regarding the result they will receive with the service, or even answering questions and providing follow-up information during the service provision. TransportCo has defined standard procedures and is a good example of this element in the Operations Capability. They offer a Frequently Asked Questions page on their website with the major doubts about the benefits and obligations in relation to the purchased tickets. As the passengers board the bus, the driver also makes a presentation, explaining details about the trip. He explains what items are available in the vehicle, how customers should behave in relation to seatbelt, where stops will be made along the way, smoking or not smoking rules, and about toilets usage. In addition, they also have a customer service center available for any

queries, both for interstate and inter-municipal follow-up. TransportCo interviewee also specifies:

There are rules since the customer buys (a ticket), he has a purchase agreement term and usage rules, what he can take inside luggage, whether he can transport animals or not, rules regarding cancellations or travel postponements, the services we provide him inside the vehicle, internet on board, entertainment. Some modalities have some treats, like water, blanket, or even a snack. So he knows this through either what is available on e-commerce, or also through a presentation by the driver himself.

Breadth of Knowledge. This element consists on the definition of areas of expertise the firm is able to operate in, and combining the different expertise to form multiple scope possibilities and customize the service to solve particular customer's problems. It also means the formalization of practical knowledge. Firms operating on a B2C market, like CoffeeCo, may diversify their offerings and reach new markets within their areas of expertise. For instance, this firm explains that the knowledge they have on coffee roasting for their own operations will now be sold in external retail stores as packaged products, and they will start to supply other coffee shops. ChatCo and ConsultingCo are both directed to B2B markets and also represent the element Breadth of Knowledge well. The former firm knows how to develop a software to send SMS, but they also have expertise on creating digital campaigns to attract customers to an e-commerce website. Therefore, they have developed a great software, however they also help their clients on converting users online. The latter firm uses diverse knowledge acquired from past clients to deliver better solutions to the new ones. As ConsultingCo explains:

We had a previous project in a Telecom company. So what did we need to do? We needed to take the methodology from an area that we had on one side, take the methodology from another area that we had on the other, and put it together in a framework that showed in a few steps how we were going to solve our new customer's problem.

Quality and Improvement. This element for the Operations Capability represents the application of production management tools to standardize routines and train frontline employees. It also stands for the implementation of quality and continuous improvement programs, measuring efficiency indicators. At BurritoCo they pursued making production processes simple. As they mention:

We made the processes really simple. Make the seasoning there, let it marinate, use the right equipment that is associated for this, and you will have your preparation ready. Everything well manualized and processes well divided into parts. The movement we are making now is precisely in the direction of removing some kitchen processes in the expansion of new stores.

FinanceCo has mentioned they have internal references of best practices, such as the time for opening an account, and that they follow up an "efficiency index" among every unit.

As they explain: “Almost all financial institutions measure this indicator very closely, so it serves as a comparison. We are always measuring, always evaluating which are the main processes that are affecting our efficiency index and trying to attack the main ones”.

Service Design. In the case of Operations Capability, this element means monitoring user experience during service provision, and collecting contextual data. This is made through the identification of users’ needs, the collection of suggestions from employees and service usability data. Both CoffeeCo and ChatCo mentioned they identified they had some offerings available that not much customers could perceive value. Therefore, both firms have implemented changes on how they communicated these offering (the former), or added partners on the provision of these services (the latter) to facilitate customer actual usage of the service they had paid for.

System Orchestration. This element corresponds to guaranteeing that every aspect necessary to deliver the service is ready. Thus it involves the courtesy of frontline employees, providing a pleasant service environment, the maintenance of equipment, managing partners to perform non-core processes, the definition of teams to support the front-line operation, and many other activities. CoffeeCo and BurritoCo, for instance, certificate suppliers and add them into their production process to reduce the necessity of labor on their kitchens. FinanceCo keeps their units always clean and have a great architectural design to impress their clients. ConsultingCo and ChatCo have great offices that are perfect to meet with clients, but are also pleasant for employees. TransportCo guarantees the setup and hygiene of their vehicles before every trip and keep preventive or corrective maintenance reviews up to date.

User Engagement/Trust. This element stands for involving the customer on the provision of the service, collecting customer suggestions during the progress of the service, and offering means to make the provision of the service more convenient for the user. ConsultingCo explains that engaging the client to participate in the service is fundamental: “The client will always know much more about the company and the context of the company than we do. By giving us a clearer view of the company’s context, we are able to deliver a solutions better targeted to what the company really needs”.

User Integration. It is literally the integration of the user into the service system. Therefore, this element consists on the group of routines that will define how to register the user into the customer base so that the service may start, and creating means to check customer documentation, the establishment of a contract, and so on. According to their market segments and regulations, some firms require more strict documentation, like TransportCo and

FinanceCo, but other businesses are less rigorous and clients consume more easily, which is the case for CoffeeCo and BurritoCo.

5.1.3. *Management Capability*

The group of activities comprised on Management Capability concerns the organization structure as a whole that sustains the operations running smoothly. It involves more objective activities, such as defining a strategic plan or defining back-office routines and measures, but it also involves broad activities, like stimulating collaboration between peers and managing the company's culture. All these features are presented on Table 10.

Table 10. Elements of Management Capability

Capability	Elements
<i>Management Capability</i>	<ul style="list-style-type: none"> • Engagement/collaboration • Organizational structure • Partners orchestration • Quality and improvement • Recruitment, training & development • Risk management • Routine management • Strategic planning

Source: Elaborated by the authors.

Engagement/Collaboration. This element corresponds to engaging employees with the company and implementing tools for collaboration. It also involves assessing organizational climate and employees satisfaction, encouraging team integration and sharing ideas. It is, in general, managing the company's culture. As FinanceCo explains, in their case having multiple teams working on different services is a strength: "the teams are not very big, so we can be much more united, share ideas and grow together". Another example is TransportCo, which reported they have implemented a digital collaboration tool. BurritoCo changed their culture and now all employees are willing to know the results they have achieved as a group.

Organizational Structure. This element is about defining a management model and structuring the firm's back-office. Investing in professionalizing internal management and regularly monitoring performance indicators are also key activities. ConsultingCo, for instance, mentioned they hired professionals from other companies for their leading roles in HR and Finance:

We recently focused very strongly on structuring our management system. We created several new roles to support that. Today we have a CFO, so we got a financial director from the market and brought the person in, which will help us implement control systems, costs, cash flow. We also brought an HR Head from the market, with experience in large companies to help structure and systematize our people management rituals and processes, performance evaluation, among other activities.

Partners Orchestration. This element means the establishment of a network of partners through strictly selecting them, then offering trainings and evaluating the quality those partners are able to provide. TransportCo explains the importance of local representatives at bus stations on selling travel tickets for the firm. Being aware that they cannot totally control this important point of contact with the client, TransportCo have defined procedures to reduce inconveniences:

So someone who represents our company receives all training, has a system too. Within the state of RS, the bus station does not only sell to us, but sells to other companies. We understand that he is an important actor who represents the company. Even though he is a dealer, he has to have a proactive attitude, in short, he is a salesman. So we try to train these partners for the best customer service to stimulate sales and the agents themselves in the same way. There is a whole training about how the sales technology system works, all of which we pass on.

Quality and Improvement. In Management Capability, this element stands for the definition of internal committees to guide improvements, the formalization of new projects for the company, and seeking specialists, internally or externally, to implement new projects. As an example, ChatCo respondent mentioned they had three new project to put forward but could not depend on their managers for those jobs in order to not overload them. This way, they found experts on the market and brought them to implement those projects.

Recruitment, Training and Development. This element consists on mainstream people management activities. In essence, training frontline employees, performance assessments, rigorous selection of new people, and ensuring the team has the necessary competence to provide the service. ConsultingCo explains how this works at their firm:

I think there are three things. First, selection process. We invest a lot of effort in the selection of our consultants because we are the ones that hire, we have to bring in very good people with a lot of potential for the company. We usually bring people at the beginning of their careers and train them. Second thing, it is the coaching part, feedback all the time, trying to train people, then the work of partners, managers, even senior consultants, all the time giving feedback to people, guiding them. And a third thing is that you are right in the level of challenge that people have. It has to be a level of challenge sufficient for them to feel a little insecure, a little bit challenged, insecure outside their safe zone, but at the same time not let the guy try to do something that he can't do without having a support from someone more senior accompanying

him. You have these three things for very good people, you challenge them but with someone more senior to guide and does this guidance well, this evolution, things end up working well.

Risk Management. This element comprises establishing failure prevention mechanisms, and also defining a reliable back-office structure to support front-line operations to guarantee customer satisfaction. This may also mean the ability to adapt the service provided to customer needs not initially agreed. Another important aspect consists on the activities to comply with rules and regulations. TransportCo mentions they are very concerned to provide constant training for their drivers, for example when they are admitted into the company, and they also keep track of tools for monitoring driver's behavior on the road. FinanceCo mentions that all their processes are audited by the Brazilian Central Bank, which regulates the financial market.

Routine Management. This element is about using agile methodologies for projects and teams management, setting horizontal and shared decision making processes, implementing information systems, and integrating areas to improve internal processes. For instance, ChatCo mentions: "Since 2015 we have been adopting agile methodologies within the company. This goes through using Kanban, and agile planning methodologies, like Scrum. Strategically speaking, we adopted an agile planning model". In addition, CoffeeCo explains that all areas have clear responsibilities, but are always working together: "We try to divide the work very well, even if the areas help one another a lot, but respecting each other's range of action".

Strategic Planning. This element means, evidently, the activities around strategy setting, defining business models for the service offerings, and evaluating competitors and market penetration space. It also involves planning the geographic expansion of customer support and service units and the relationship with investors for fundraising. As examples, CoffeeCo has set a target of opening two hundred new units in five years. BurritoCo mentions that having clear goals and targets attached to it made their results improve in every unit. On ConsultingCo, periodic board meetings are used to make strategic decisions and to define courses of action.

5.1.4. Transaction Capability

The majority of elements were identified on Transaction Capability, totalizing ten elements. They express the strong necessity of customer interaction and the effort of the organization to deliver a segmented and customized service for users particular necessities. Marketing and sales activities are fundamental, but managing points of contact with users, like

employees and partner organizations, is also particularly relevant to provide the right experience. Table 11 has a synthesis.

Table 11. Elements of Transaction Capability

Capability	Elements
<i>Transaction Capability</i>	<ul style="list-style-type: none"> • Customization/segmentation • Employee competence • Information sharing/communication • Marketing • Partners orchestration • Profit leverage • Quality and improvement • Sales • Service design • User engagement/trust

Source: Elaborated by the authors.

Customization/Segmentation. This element comprises many activities to customize the service for a particular user, or segments of users. Therefore, it involves defining scope and deadline for providing the service, enabling the customization of offers in different service units or channels, and even mapping the customer journey. ConsultingCo mentions that a majority of their services are customized for a distinct need of each client: “In the first conversation with a client I give examples of things I’ve seen and test if it works and if the client likes the ideas. Then I talk to different internal areas to organize and structure the scope of our proposal”. BurritoCo mentions that they are evaluating their clients’ current request which is the possibility of a higher customization of the burritos. The problem is that the firm would face a cost constraint if they implement such changes, so they haven’t decided how to manage this issue yet. Another example is TransportCo. They explain how they segment their customer base:

We do an analysis of the customers, do the marketing personas. We analyze from the past, relating big data, for example, what we have, we can identify the relationship and also do targeted marketing, identify the profile of our customers from age group, social class, which is the customer profile, who buy a more expensive quality, or a lower quality.

Employee Competence. This element stands for ensuring autonomy for frontline employees to manage the relationship with their customers. It means demonstrating technical knowledge and excellence in conducting the service. Activities of establishing internal networks of specialists in a particular subject are also important. For instance, ChatCo and

FinanceCo frontline people manage multiple accounts, therefore they are trained to perform a positive interaction with every client. A passage from ConsultingCo adds a great insight:

A very important thing is that in meetings with customers we always have to demonstrate control, not control in the operational sense of detail, but that we have a clear view of the schedule, that we are following the deliveries and that we know where the service should go.

Information Sharing/Communication. It means explaining the service technically and how the delivery process will occur. In addition, this element stands for providing ongoing support to customers, including providing channels for solving problems and answering questions. ChatCo, for instance, supports customers during their first steps in a process they call “onboarding”. Another example is that while some service providers are not involved with how their customers will use their offerings, ConsultingCo, on the other hand, explains *a priori* how the service will take place in details.

Marketing. This element encompasses those activities related to branding and managing firm’s reputation. Market positioning, identifying niches of customers, creating campaigns to stimulate recurring clients or attract new customers, and monitoring target audience consumption behaviors are all referred here. CoffeeCo explains that: “Today we also look a lot on social media to work on brand positioning issues, from the posts we make to the way we communicate with the audience”. FinanceCo also mentions their activities, emphasizing the role of face-to-face services: “We want people to be with us because it makes sense for their lives, not only to increase our customer base. We obviously have campaigns, ads, and the units themselves, which are physical sales channels that work very well”.

Partners Orchestration. This element means either using partner organizations as channels to provide the service, or integrate partner offers into the service portfolio. TransportCo, for instance, uses partner online platforms as channels to sell tickets and integrate those external systems through API with their proprietary e-commerce. FinanceCo, in turn, offers insurance services from partners to form a package with their own services.

Profit Leverage. The routines comprised in this element correspond to the identification of margins of customer segments, controlling customers acquisition costs, making several sales to users already in the customer base, effectively using CRM tools, and the definition of loyalty programs. BurritoCo and TransportCo have established loyalty programs. ChatCo, in its turn, is categorical on this topic: “This is the science of our business, getting customers at a low acquisition cost and being able to make them have a very high life cycle. We always look at these digital indicators, for example CAC, CLV, LTV”. In addition, CoffeeCo explains the importance of margins monitoring:

You have to think about product margin, how much each store is earning, how much the store will have to sell from it. It is not enough to just sell what is less profitable. Anyway, we do not design anything to not earn money. Everything on the menu has a mark-up above 250% and I have items that have a mark-up of 620%.

Quality and Improvement. This element appears once again in this capability. In the case of Transaction Capability, it stands for assessing customers' satisfaction and perception of quality. It also means monitoring the effective usage of service benefits. As an example, TransportCo explains the attributions of their quality department:

We have a quality department that conducts satisfaction surveys and through the NPS, a customer satisfaction index with various topics that he has to understand, for example, satisfaction with the purchase, satisfaction during the trip, perception regarding the hygiene of the vehicle, safe driving, shopping, entertainment on board.

Sales. This element means expanding sales channels and offering customers alternative means of payment. It also represents the sales management activities, such as monitoring sales profile in each service unit and defining a sales process. ChatCo says that sales have increased since they adopted credit card payment. Another example is FinanceCo, which developed a mobile channel targeted to young users where they have access to all financial services from their smartphones.

Service Design. The routines contained in this element encompass the identification of similar customer pains, opportunities for new offers in the environment and during service provision, and structuring solutions to these problems. As an example of identifying opportunities in the environment, TransportCo explains that "many municipalities in the countryside organize for their inhabitants a medical consultation schedule or a hospital procedure in the state' capital, and the city hall grants a roundtrip to its inhabitants". Aware of that, TransportCo framed a service specific for these passengers. Another interesting passage was provided by BurritoCo. The firm mentions the issues of identifying the wrong problems from customers: "In an eagerness to meet specific customer complaints, we began to have a lot of operational complexity. We were increasing the menu just to serve a few customers who didn't like us. You also need to say no to some customers".

User Engagement/Trust. This element stands for the necessity of creating routines to encourage customer participation in the service delivery process, include customer opinions when performing the service, and strengthen the relationship with the customer during the execution of the service. In addition, informal interactions, creating a user community, and participating in events of interest to users were also found to be relevant. ConsultingCo explains how they build trust with their clients:

There are some extra conversations that are important too, over coffee, or having lunch with the client, or inviting the client to some event, where we act as “trusted advisor” and he will be able to put a series of perceptions, doubts that he has, not only about the project, not only about the company, but also about the market, what he is seeing, so he can talk to us, he has someone smart on the other side, who adds value to him, that he leaves enriched from that conversation with us is super important too.

5.1.5. Validating previous literature with empirical findings

Now that we have described the elements found for each innovation capability, we are able to contrast them with the characteristics we had already identified in the literature. In fact, our previous review has found that services specificities involve a great amount of relations with stakeholders that will influence the innovative behavior of firms. This is consistent with our empirical findings.

In addition, many elements uncovered in our empirical analysis of firms’ capabilities had already been pointed out on our literature investigation of previous sections. For instance, the necessity of effectively communication with customers during service provision had been cited as an Operations Capability feature. The same occurs for a characteristic of creating risk sharing mechanism as a routine of Management Capability. But on contrary, some elements empirically found had not been previously indicated. It is the case for collecting data from customer interaction, or investing in external interactions for developing new services. Therefore, the integration of findings from both specialized literature and empirical investigation permits the validation of our previous assumptions and stretches our further discussion. We compare our literature review (cf. Table 4) with the empirical findings we had on Table 12.

Table 12. Comparing Literature Review With Empirical Findings

Capabilities	Prior literature	Empirical findings
<i>Development Capability</i>	<ul style="list-style-type: none"> • Arranging available technology; • Co-creation; • Interactive process. 	<ul style="list-style-type: none"> • External interaction; • Innovation management; • Insights/Cocreation; • Quality and Improvement; • Research and Development; • Service design.
<i>Operations Capability</i>	<ul style="list-style-type: none"> • Uncertainty, variability, prevision difficulty; • Definition of rigorous, repeatable standard operational procedures; • Effectively communication with customers; • Adjustable user-producer interface; • Resource flexibility; • High customization; • Customer' resources integration into the service system. 	<ul style="list-style-type: none"> • Availability; • Information sharing/Communication; • Breadth of Knowledge; • Quality and Improvement; • Service design; • System orchestration; • User engagement/Trust; • User integration.
<i>Management Capability</i>	<ul style="list-style-type: none"> • Higher risk adoption; • Risk sharing with customers; • Managing the degree of interaction between employees and customers; • Effectively personnel training and engagement. 	<ul style="list-style-type: none"> • Engagement/Collaboration; • Organizational structure; • Partners orchestration; • Quality and Improvement; • Recruitment, Training & Development; • Risk management; • Routine management; • Strategic planning.
<i>Transaction Capability</i>	<ul style="list-style-type: none"> • Keeping the relationship during and after the service provision; • Trust and commitment; • Information sharing and transparency; • Informal exchange; • Managing customer experience and journey; • Customer retention and life-time value; • Loyalty programs. 	<ul style="list-style-type: none"> • Customization/Segmentation; • Employee competence; • Information sharing/Communication; • Marketing; • Partners orchestration; • Profit leverage; • Quality and Improvement; • Sales; • Service design; • User engagement/Trust.

Source: Elaborated by the authors.

In our literature review, we had found characteristics of Development Capability in services, such as that it arranges available technology and co-create process solutions through interactive processes. Our data confirms and presents an extension of this first impression.

Defining spaces for co-creating solutions is indeed important but, beyond that, a Development Capability in services involves defining methods for innovation management and systematic research opportunities within the firm or externally.

The analysis of Operations Capability show that some findings on our literature review match the empirical evidence, for example user integration and communication with customers. However there are some new relevant data that this study haven't already identified. Granting service availability in multiple channels, or engaging users during the service provision are some of these new elements that encompass fundamental service operational routines.

In the case of Management Capability, the data collected in this study expresses some crucial elements for service organization that the authors had not described. For instance, ensuring the collaboration between employees has been cited as an important managerial concern for many firms in our study. In addition, defining strict processes for selecting partners, or creating formal procedures for running improvements projects are activities relevant for establishing a strong Management Capability.

Finally, many services specific characteristics of a Transaction Capability had already been anticipated. Just to mention a few, being able to build trust, promote informal exchanges with customers, or establishing loyalty programs have been cited as important features. But some aspects are new for this capability. For example, it became clear the necessity of collecting data from customers interaction and offering customized services for defined user segments.

5.2. Towards a Model of Innovation Capabilities Suitable for Services

As we have seen, the innovation process in service organizations has a starting point: the provider's resources and its own knowledge base. But our investigation shows that there are a number of elements on capabilities that need additional support. Internally, the firm manages the capabilities spread throughout the organization to complete any insufficiency and is able to purposefully alter its capabilities. Likewise, the relationships the firm nurtures while facing the external environment during service provision also is a form it learns and changes.

Therefore, what we observe next are the consequences of such internal and external mechanisms that impact service organizations' innovative behavior. There is a clear overlap between elements of innovation capabilities, which provide them an internal cohesion. In addition, services relational character and constant external interaction shape how firms organize their capabilities. These topics are discussed in further details as follows.

5.2.1. Capabilities Overlaps and Its Diffuse Boundaries

The analysis of the elements found for each innovation capability shows that some elements repeat and are present in more than one capability. Table 13 lists the elements that repeat and distinguishes in which capability they are present. As we argue, there are clear overlaps between every innovation capability.

Table 13. Capabilities Overlaps

Elements/Capabilities	Development	Operations	Management	Transaction
Quality and Improvement	x	x	x	x
Service Design	x	x		x
Information sharing/ Communication		x		x
User engagement/Trust		x		x
Partners Orchestration			x	x

Source: Elaborated by the authors.

The elements “User engagement/Trust” and “Information sharing/Communication” are found in both OC and TC. “Partners Orchestration” is present in MC and TC. “Service Design” appears in DC, OC, and TC. Also, the element “Quality and Improvement” is found in all four innovation capabilities. In this sense, what we mean by “overlap” is that it is difficult to clearly define which elements exclusively constitute each capability. Although similar, the elements descriptions made in previous sections express the organizational routines or activities that will influence the coordination of innovation throughout the firm. However, those descriptions differ from one capability to the other.

Take for instance the element “Partners Orchestration”. The description for this element of Management Capability was: “this element means the establishment of a network of partners through strictly selecting them, then offering trainings and evaluating the quality those partners are able to provide”. For Transaction Capability, this same element means: “either using partners as channels to provide the service, or integrate partner offers into service offerings”. Those two aspects of “Partners Orchestration” are evidently complements. For integrating partners as channels or offering their services, it is first necessary to select them, and then train and evaluate their performance. Thus, the relationship with partners is a Management or Transaction issue? How this responsibility is shared within the organization?

Another example is the element “Quality and Improvement” as long as it appears in all four innovation capabilities. This clearly expresses the processual character of services and how innovation takes place in these organizations. In that sense, incremental innovation may indeed

be predominant for service innovation, as already noticed on the innovation literature (Toivonen & Tuominen, 2009; Rubalcaba et al., 2012). There is an evident need for firms to build capabilities to track the process of service provision and to define a concise service system that will deliver efficiently and effectively the experience customers demand. In sum, the fact is that this element (i.e. Quality and Improvement) definitely requires a special mobilization of resources to take place that will probably involve many areas of the organization.

We argue that innovation capabilities overlap in services precisely to solve internal insufficiencies. It means that the knowledge or the resources of service organizations are not dedicated to only one function, but rather they serve at the same time to multiple purposes. Evidently, this adds a dose of complexity in the way services organize their innovation efforts, but, the way we see, the mechanism of capabilities overlapping through its diffuse boundaries results in a stable body for the combination of innovation capabilities.

Considering the examples mentioned and the other duplicity of elements found, we also recognize that it is difficult to come up with a precise association of causes to the innovative behavior of services. In other words, the effects of a modification in the organizations' existing resources and capabilities (Agarwal & Selen, 2009) are not immediately evident. However, those firms that do learn how to take advantage of those blurred internal boundaries are probably more likely to define innovative routines and processes that will lead them to a better competitive position.

5.2.2. Services Relational Character in Shaping Capabilities

The previous analysis of depicted innovation capabilities evidences services relational character through many elements. Despite the capability, there are routines and activities that demand facing external actors to be performed, which means the clear necessity of building relationships that intersect and shape the firm's innovation capabilities. This occur specifically because service organizations face the necessity of orchestrating resources that are not owned by the firm itself. In this sense, we argue that, in order to effectively perform an innovation capability, it is mandatory for services the understanding of how they integrate external resources to change their own set of resources and their knowledge base. Essentially, the relational character of service organizations is what ends up drawing the contours the diffuse boundaries of innovation capabilities in services will have. In short, without external relations (in particular with consumers), innovation capabilities are not complete.

In our model, Operations and Transaction capabilities are probably the first to notice this characteristic, but Development and Management capabilities likewise require interaction with external stakeholders. In the case of relationship with customers, these relations have been cited as important aspects for many elements, for instance the firm's ability to gain insights and engage users during service provision. Partners are also relevant relationships, particularly on outsourcing operational procedures and serving as delivery channels. In both cases, there is a strong need for firms to learn how to control those relationships and absorb knowledge from this interaction. These characteristics appear to be relevant in many elements in all four innovation capabilities we investigated.

Not surprisingly, Transaction Capability (TC) is presented as central in our findings because it represents this relational aspect more than any other innovation capability in our conceptual model. In addition to being the capability concerned to stakeholders relationship, customization, and sales, we also notice this relevance of TC by the number of codified items found on Figure 3, and the number of elements on Table 12. Still, TC is the capability that most overlaps with the others, as Table 14 exposes. In this sense, what we argue is that TC influences the other three innovation capabilities, and may even moderate the effects of different capabilities on firms' innovative performance.

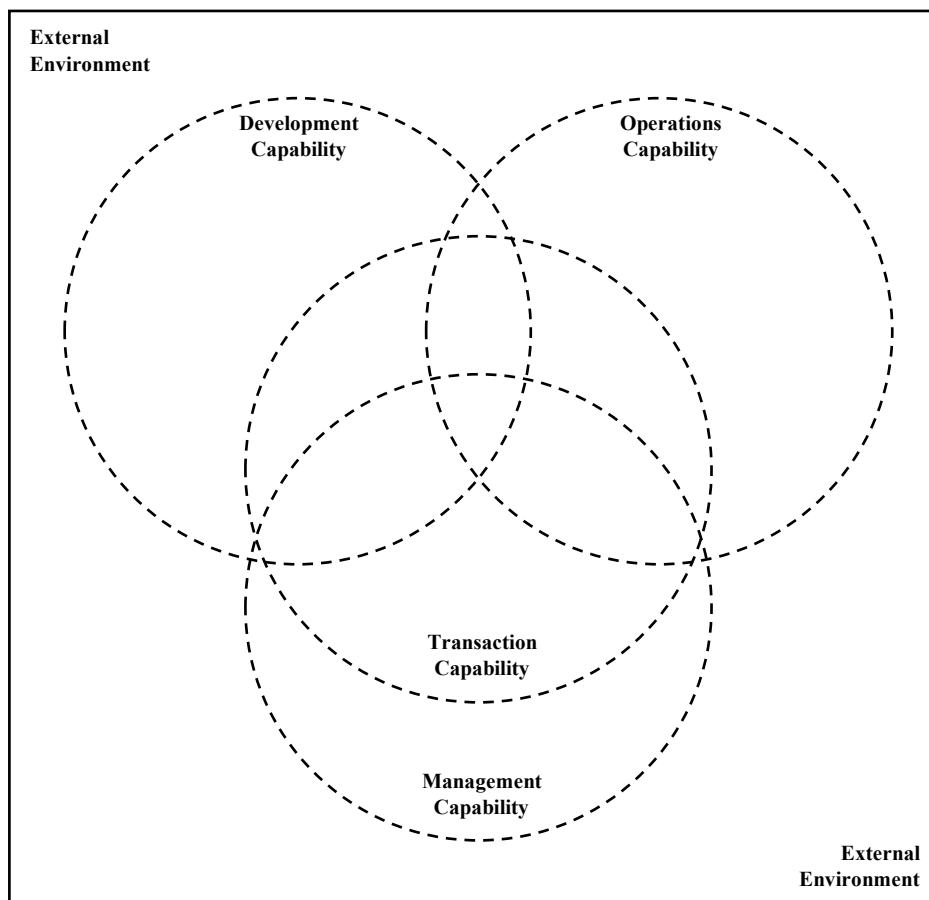
5.2.3. The Relations of Innovation Capabilities in Services

After the description of the elements encompassed in each innovation capability, and the exposition of main insights derived from that analysis, we now have indications about how the innovation capabilities relate to themselves. Rather than a linear representation as in the former framework proposed by Zawislak et al. (2012), we recognize that the elements of innovation capabilities overlap internally and require external inputs. Those features define and shape the capabilities' boundaries. For that reason, innovation capabilities in service organizations require a multidimensional characterization to account for this multitude of agents and factors influencing how innovation takes place.

In addition, we have suggested that innovation capabilities in services are internally imbricated, indicating that many routines are difficult to precisely define which area within the organization would be responsible, or how to organize some activities in an effective way. Moreover, through the relationships with external actors the firm reaches additional resources that complete its capabilities. It is this setting that offers cohesion to the organization of innovation initiatives.

In conclusion, an outcome from all those characteristics found on services literature and confronted with empirical evidences is that innovation capabilities in services relate to each other in a multidimensional way, and impact one another in many directions. Additionally, all innovation capabilities present permeable frontiers that are accessible to the organization's external environment, influencing how firms organize their own resources. Our data analysis expresses this characteristic in multiple elements. In this sense, Figure 4 represent this relationship between innovation capabilities in services.

Figure 4. Relations of Innovation Capabilities in Services



Source: Elaborated by the authors.

Figure 4 shows the capabilities' diffused boundaries internally, and their permeability to exchanges with the firm's external environment. Since there are many overlaps among capabilities, the figure also expresses the many intersections possible. Transaction Capability is located at the center because, as we have stated, it is the innovation capability that most shares elements with the others.

In summary, the description of each innovation capability provided in prior sections have demonstrated that some elements in every capability are exclusively internal responsibilities of the service provider, while other elements effectively require external interaction. For instance, MC is the least dependent of external actors. In fact there is only one element in this capability that is described as having contact with partners. In addition, DC is another capability that, although some elements do require external contact, that the firm performs mainly with its own resources. OC and TC, however, are markedly the two most determined by external influences. In other words, there are elements of capabilities that do not necessarily depend on the relationship with customers and others that only exist because of it.

6. Conclusion

This study aimed to identify the elements of innovation capabilities in service organizations. Drawing on a literature review and an analysis of six case studies, we were able to add to the service innovation field some empirical evidence about the innovative behavior of service firms. Departing from Zawislak's et al. (2012) framework, we were able to depict 32 elements distributed across four innovation capabilities (i.e. Development, Operations, Management, Transaction). As we argue, those elements are essential for service organizations and should be present in any firm or business unit that provide a service to their customers.

The elements identified in the innovation capabilities clearly overlap, which evidence a diffused aspect in the internal boundaries between capabilities. This fact indicates that it is difficult to define the relationships between those constructs (i.e. capabilities) and variables (i.e. elements). Also, many elements showed a strong external interface. In this sense, we argue that the relational character of services shapes firms' capabilities and how they organize their innovation activities using third parties resources.

Therefore, we introduced a representation of how the relations between innovation capabilities look like in service organizations. As we argue, the impact of relationships with multiple actors on the innovative behavior of service providers is clear, thus indicating Transaction Capability (TC) a central role into the model. Not only, this leading role of TC is supported by the superior number of items found on data analysis (Figure 3), which also led to a greater number of elements composing this capability. Moreover, five out of ten elements found for TC were duplicated in all other capabilities, representing the relational nature of services and its relevance on shaping innovation capabilities in services. In addition, the model presents permeable boundaries to promote external interactions, also indicating this strong relational character. All four innovation capabilities also intersect multiple times, expressing their frequent overlaps.

Thus, considering the elements we have presented and how innovation capabilities are associated in service organizations, we come to the conclusion that the way capabilities overlap is how they solve internal insufficiencies. In other words, perhaps a failure of one capability will be solved internally with the other. At the same time, the relationship with external actors completes the resources (knowledge, information, etc.) a capability lacks. This relational aspect fills in some capabilities the firm alone would not be able to perform but it is able to resolve through the relationship with external agents (including the consumer). Service organizations

depend on relationships to complete their capabilities, and this only happens during the act of service provision, when production and consumption occur simultaneously. In sum, the less the external influence, the more the capability is contained within itself. That is, there are some parts of the capabilities that do not depend on relationships and others that exist only because of it.

Essentially, this study concludes that there are general aspects of capabilities for any firm, as the original model of innovation capabilities we use already predicts. But there are also typical sectoral aspects that vary according to the nature of firms' value generation core activity. What we have achieved are specific characteristics of innovation capabilities in services that should be incorporated into a capabilities model tailored to that type of organization.

This research has shown that some effort has been made in order to uncover the complete characteristics of firms' innovation capabilities in services and our goal was to stretch this discussion further. Services, that have historically been questioned in their value-generation potential, are presented as innovative engines at the beginning of the 21st century. For that reason, identifying how to create and capture value from this kind of activity becomes fundamental. While some other studies have framed their models of innovation capabilities in services from a new service development or a dynamic capabilities perspective, our effort was to depart from a general-purpose framework and find the elements that would fit this model to services specificities. This way, we now have reached a framework of innovation capabilities in services that accounts for multiple kinds of innovation. As Gustafsson et al. (2020) have mentioned, service innovation is still a confuse concept that mix definitions of new service development and service design. Innovation capabilities in services lie on this same problem in our view and we hope we were able to help define and understand how to build the capabilities required to perform service innovation. In addition, the model we propose easily acknowledges the responsible areas for each innovation capability within an organization, which makes it closer to practical application.

6.1. Study Limitations

Although researchers in this study attempted to mitigate biases, this study has some evident limitations. One first limitation is the number of firms interviewed and the number of respondents. Certainly a higher number of case studies would make the results found more robust. Second, there is a limitation in the sector the firms studied operate in. Again, researchers tried to cover multiple markets to obtain a comprehensive group of service firms, but many

sector became uncovered. It would also be relevant to include manufacturing firms that offer services in the cases selected in order to collect more detailed information.

An additional limitation is that this study recognizably does not expand the discussion on diffuse boundaries and overlapping elements as a way to address capabilities' internal deficiencies. Also, the study argues but do not provide further explanations of how external interactions shape the innovation capabilities of service organizations. Although interesting topics, those were not on the scope of this study.

6.2. Future Research

This research has presented elements of innovation capabilities in services through an qualitative study of the literature and an exploratory empirical multiple case study evaluation. Following research could now test quantitatively those findings. Our suggestion is that each innovation capability form a construct, which elements are the variables that form those constructs. The description for each element we provided would also become questions for the survey. Also, there are some hypothesis that can be drawn from this study and that we recommend further research effort to address. For instance we would mention measuring how services adjust their innovation capabilities internally, or the impact of external resources on firms' innovative performance.

6.3. Managerial and Policy Implications

Despite other attempts on the literature to define innovation capabilities of service organizations, we chose Zawislak's and colleagues model to support our study and it has been presented as a fine instrument to analyze firms capabilities. With this form of representing the innovation capabilities of a firm, it becomes easier to detect the departments and the people responsible for each routine within the organization. Therefore, besides been a model of innovation capabilities that has been tested in multiple sectors, Zawislak's et al. (2012) framework is also a comprehensive tool that can be adopted by practitioners to assess their current innovative behavior and plan next steps.

Another important remark is that, despite recognized as an essential characteristic of service organizations in recent years, we have not identified a decisive role of digital technologies on firm's innovation capabilities. It became clear the processual character of

services, and some firms we interviewed have cited they explore digital technologies to automate processes and increase efficiency and productivity. Although some of our interviewees recognize the importance of implementing digital technologies in their businesses, we could not identify a deliberate effort from those firms to promote digital transformation. We believe the reason for that is because the firms that are part of this study are located in Brazil, a country that lags behind on digitalizing the economy. We argue that a possible path of innovation for policymakers in emerging economies like Brazil would be to stimulate firms to build digital capabilities and deliver smart services in the market or, in other words, stimulate the creation of digitally native services with more knowledge-intensive value offers.

References

- Agarwal, R., & Selen, W. (2009). Dynamic capability building in service value networks for achieving service innovation. *Decision Sciences*, 40(3), 431–475.
- Alves, A. C., Barbieux, D., Reichert, F. M., Tello-Gamarra, J., & Zawislak, P. A. (2017). Innovation and Dynamic Capabilities of the Firm: Defining an Assessment Model. *Revista de Administração de Empresas*, 57(3), 232–244.
- Amit R., Schoemaker, P. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14(1), 33–46.
- Argyres, N. (1996). Evidence on the role of firm capabilities in vertical integration decisions. *Strategic Management Journal*, 17(2), 129–150.
- Argyres, N. (2011). Using organizational economics to study organizational capability development and strategy. *Organization Science*, 22(5), 2205-1138.
- Bardin, L. (2009). *Análise de Conteúdo* (4a Edição). Lisboa: Edições, 70.
- Barnard, C. (1966). *The Functions of the Executive*. Harvard University Press, Cambridge. First published in 1938.
- Barney, J. (1991). Firm resource and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barras, R. (1986). Towards a theory of innovation in services. *Research Policy*, 15(4), 161-173. [https://doi.org/10.1016/0048-7333\(86\)90012-0](https://doi.org/10.1016/0048-7333(86)90012-0)
- Barras, R. (1990). Interactive innovation in financial and business services: the vanguard of the service revolution. *Research Policy*, 19(3), 215-237. [https://doi.org/10.1016/0048-7333\(90\)90037-7](https://doi.org/10.1016/0048-7333(90)90037-7)
- Baumol, W. J.; Bowen, W. G. (1966). *Performing Arts, The Economic Dilemma: a study of problems common to theater, opera, music, and dance*. MIT Press: Cambridge, MA.
- Bell, M., Pavitt, K. (1995). The development of technological capabilities. Trade, Technology and International Competitiveness. *Economic Development Institute of the World Bank*, 69-100.
- Berry, L. L. (1995). Relationship marketing of services—growing interest, emerging perspectives. *Journal of the Academy of Marketing Science*, 23(4), 236-245.

- Boksberger, P. E., & Melsen, L. (2011). Perceived value: a critical examination of definitions, concepts and measures for the service industry. *Journal of Services Marketing*, 25(3), 229-240.
- Cannon, J., & Homburg, C. (2001). Buyer-supplier relationships and customer firm costs. *Journal of Marketing*, 65(1), 29-43. <http://doi.org/10.1509/jmkg.65.1.29.18136>
- Carlborg, P., Kindström, D., & Kowalkowski, C. (2014). The evolution of service innovation research: a critical review and synthesis, *The Service Industries Journal*, 34(5), 373-398. <http://doi.org/10.1080/02642069.2013.780044>
- Chandler, A. D., (1977), *The Visible Hand*. Cambridge, Mass. and London, England: The Belknap Press of Harvard University Press.
- Chandler, A. D. (1992). Organizational capabilities and the economic history of the industrial enterprise. *Journal of Economic Perspectives*, 6(3), 79-100. <http://doi.org/10.1257/jep.6.3.79>
- Chandler, J. D., & Lusch, R. F. (2015). Service systems: a broadened framework and research agenda on value propositions, engagement, and service experience. *Journal of Service Research*, 18(1), 6-22.
- Chang, K. C. (2016). Effect of servicescape on customer behavioral intentions: Moderating roles of service climate and employee engagement. *International Journal of Hospitality Management*, 53, 116-128.
- Chesbrough, H. (2011). Bringing open innovation to services. *MIT Sloan Management Review*, 52(2), 85-90.
- Chesbrough, H. (2012). Open innovation: Where we've been and where we're going. *Research-Technology Management*, 55(4), 20-27.
- Coase, R. (1937). The nature of the firm. *Economica*, 4(16), 386-405. <http://doi.org/10.1111/j.1468-0335.1937.tb00002.x>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Corrêa, H. L., Ellram, L. M., Scavarda, A. J., Cooper, M. C. (2007). An operations management view of the services and goods offering mix. *International Journal of Operations and Production Management*, 27(5), 444-463.

- Den Hertog, P. (2000). Knowledge-intensive business services as co-producers of innovation. *International Journal of Innovation Management*, 4(4), 491-528.
- Den Hertog, P., Van der Aa, W., & De Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. *Journal of Service Management*, 21(4), 490–514.
- Den Hertog, P., Gallouj, F., & Segers, J. (2011). Measuring innovation in a ‘low-tech’ service industry: the case of the Dutch hospitality industry, *The Service Industries Journal*, 31(9), 1429-1449. <http://doi.org/10.1080/02642060903576084>
- Djellal, F., & Gallouj, F. (2001). Patterns of innovation organisation in service firms: postal survey results and theoretical models. *Science and Public Policy*, 28(1), 57–67. <https://doi.org/10.1093/spp/28.1.57>
- Djellal, F., Gallouj, F., Miles, I. (2013). Two decades of research on innovation in services: Which place for public services?, *Structural Change and Economic Dynamics*, 27, 98–117.
- Dosi, G. (1982). Technological paradigms and technological trajectories: a suggested interpretation of the determinants and directions of technical change. *Research Policy*, 11(3), 147-162. [https://doi.org/10.1016/0048-7333\(82\)90016-6](https://doi.org/10.1016/0048-7333(82)90016-6)
- Dosi, G. & Nelson, R.R. (1994). An introduction to evolutionary theories in economics, *Journal of Evolutionary Economics*, 4(3), 153–172. <https://doi.org/10.1007/BF01236366>
- Dosi G, Nelson RR, Winter SG. (2000). *The Nature and Dynamics of Organizational Capabilities*. Oxford University Press: Oxford, UK.
- Drejer, I. (2004). Identifying innovation in surveys of services: a Schumpeterian perspective. *Research Policy*, 33(3), 551-562. <https://doi.org/10.1016/j.respol.2003.07.004>
- Eisenhardt K, Martin J. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, October–November Special Issue 21: 1105–1121.
- Fitzsimmons, J. A. & Fitzsimmons, M. J. (2000). *New Service Development*, Sage: Thousand Oaks, CA.
- Forsman, H. (2011). Innovation capacity and innovation development in small enterprises. A comparison between the manufacturing and service sectors. *Research Policy*, 40(5), 739-750.

- Froehle, C. M., & Roth, A. V. (2007). A Resource-Process Framework of New Service Development, *Production and Operations Management*, 16(2), 169–188.
- Gadrey, J., Gallouj, F. & Weinstein, O. (1995). New modes of innovation: How services benefit industry. *International Journal of Service Industry Management*, 6(3), p. 4–16.
- Gadrey, J. (2000). The characterization of goods and services: an alternative approach. *Review of Income and Wealth*, 46(3), 369-387.
- Gaiardelli, P., Martinez, V., & Cavalieri, S. (2015). The strategic transition to services: a dominant logic perspective and its implications for operations, *Production Planning & Control*, 26(14-15), 1165–1170.
- Gallouj, F. (2002). Innovation in services and the attendant old and new myths. *The Journal of Socio-Economics*, 31(2), 137-154.
- Gallouj, F. & Weinstein, O. (1997). Innovation in services, *Research Policy*, 26(4-5), 537–56.
- Gallouj, F., Weber, K. M., Stare, M., & Rubalcaba, L. (2015). The futures of the service economy in Europe: A foresight analysis. *Technological Forecasting and Social Change*, 94, 80-96.
- Gawer, A., & Cusumano, M. A. (2014). Industry platforms and ecosystem innovation. *Journal of Product Innovation Management*, 31(3), 417-433.
- Gil, A. C. (2007). *Métodos e Técnicas de Pesquisa Social*. 5 ed. São Paulo: Atlas.
- Grönroos, C. (1991). The Marketing Strategy Continuum: Towards a Marketing Concept for the 1990s, *Management Decision*, 29(1), 7-13.
- Grönroos, C. (2012). Conceptualising value co-creation: A journey to the 1970s and back to the future, *Journal of Marketing Management*, 28(13-14), 1520-1534.
<http://doi.org/10.1080/0267257X.2012.737357>
- Grotherr, C., Semmann, M., & Böhmman, T. (2018). Using Microfoundations of Value Co-Creation to Guide Service Systems Design - A Multilevel Design Framework, in *Thirty Ninth International Conference on Information Systems*, San Francisco, United States, 13-16 December 2018.
- Gryszkiewicz, L., Giannopoulou, E., & Barlatier, P. J. (2013). Service innovation capabilities: what are they?, *International Journal of Services, Economics and Management*, 5(1/2), 125.

- Guan, J., & Ma, N. (2003). Innovative capability and export performance of Chinese firms, *Technovation*, 23(9), 737–747.
- Gustafsson, A., Snyder, H., & Witell, L. (2020). Service Innovation: A New Conceptualization and Path Forward. *Journal of Service Research*, 23(2), 111–115.
- Hayes, R. H., Pisano, G. P. (1994). Beyond world-class: The new manufacturing strategy. *Harvard Business Review*, 72 (1), 77-86.
- Helfat, C. E., and Peteraf, M. A. (2003). The Dynamic Resource-based View: Capability Lifecycles, *Strategic Management Journal*, 24(10), 997–1010.
- Hill, P. (1999). Tangibles, intangibles and services: a new taxonomy for the classification of output. *The Canadian journal of economics/Revue canadienne d'Economique*, 32(2), 426-446.
- Iammarino, S., Padilla-Pérez, R., & Von Tunzelmann, N. (2008). Technological capabilities and global–local interactions: the electronics industry in two Mexican regions. *World Development*, 36(10), 1980-2003.
- Janssen, M. J., Castaldi, C., & Alexiev, A. (2016). Dynamic capabilities for service innovation: conceptualization and measurement. *R&D Management*, 46(4), 797–811.
- Jonas, J. M., Roth, A., & Möslin, K. M. (2016). Stakeholder integration for service innovation in German medium-sized enterprises. *Service Science*, 8(3), 320-332.
- Kaczor, S., & Kryvinska, N. (2013). It is all about Services-Fundamentals, Drivers, and Business Models, *Journal of Service Science Research*, 5, 125–154.
<https://doi.org/10.1007/s12927-013-0004-y>
- Kandampully, J. (2002). Innovation as the core competency of a service organisation: the role of technology, knowledge and networks. *European Journal of Innovation Management*, 5(1), 18-26. <https://doi.org/10.1108/14601060210415144>
- Karpen, I. O., Gemser, G. & Calabretta, G. (2017). A multilevel consideration of service design conditions: Towards a portfolio of organisational capabilities, interactive practices and individual abilities. *Journal of Service Theory and Practice*, 27(2), 384-407.
- Kindström, D., Kowalkowski, C., & Sandberg, E. (2013). Enabling service innovation: A dynamic capabilities approach. *Journal of Business Research*, 66(8), 1063–1073.

- Kotabe, M., Srinivasan, S.S., Aulakh, P. (2002). Multinationality and firm performance: The moderating role of R&D and Marketing Capabilities. *Journal of International Business Studies*, 33(1), 79-97.
- Kreye, M. E., Roehrich, J. K., & Lewis, M. A. (2015). Servitising manufacturers: the impact of service complexity and contractual and relational capabilities, *Production Planning & Control*, 26:14–15, 1233-1246.
- Kumar, V., & Reinartz, W. (2016). Creating Enduring Customer Value. *Journal of Marketing*, 80(6), 36–68.
- Lall, S. (1992). Technological capabilities and industrialization. *World Development*, 20(2), 165–186.
- Langlois, R., & Foss, N. (1999). Capabilities and governance: the rebirth production in the theory of economic organization. *Kyklos*, 52(2), 201-218.
- Lawson, B., & Samson, D. (2001). Developing innovation capability in organisations: a dynamic capabilities approach. *International Journal of Innovation Management*, 5(3), 377-400. <https://doi.org/10.1142/S1363919601000427>
- Leiponen, A. (2012). The benefits of R&D and breadth in innovation strategies: a comparison of Finnish service and manufacturing firms. *Industrial and Corporate Change*, 21(5), 1255-1281. <https://doi.org/10.1093/icc/dts022>
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, 80(6), 69–96.
- Lenka, S., Parida, V., Sjödin, D. R., & Wincent, J. (2018). Exploring the microfoundations of servitization: How individual actions overcome organizational resistance. *Journal of Business Research*, 88, 328-336.
- Li, J. M., Yang, J. S., & Wu, H. H. (2009). Analysis of competency differences among front-line employees from various service typologies: integrating the perspectives of the organisation and customers. *The Service Industries Journal*, 29(12), 1763-1778.
- Lightfoot, H., Baines, T. and Smart, P. (2013). The servitization of manufacturing, *International Journal of Operations & Production Management*, 33(11/12), 1408-1434. <https://doi.org/10.1108/IJOPM-07-2010-0196>

- Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS quarterly*, 39(1), 155-175.
- Lusch, R. F., Vargo, S. L., & O'Brien, M. (2007). Competing through Service: Insights from Service-Dominant Logic, *Journal of Retailing*, 83 (Special Issue), 5–18.
- Madhok, A. (1996). Crossroads - the organization of economic activity: Transaction costs, firm capabilities, and the nature of governance. *Organization Science*, 7(5), 577-590.
- Maglio, P. P., & Spohrer, J. (2008). Fundamentals of service science. *Journal of the Academy of Marketing Science*, 36(1), 18-20.
- Mayer, K., Salomon, R. (2006). Contract design as a firm capability: an integration of learning and transaction cost perspectives. *Academy of Management Review*, 49(5), 942-959.
- Menor, L. J., Tatikonda, M. V., & Sampson, S. E. (2002). New service development: areas for exploitation and exploration. *Journal of Operations Management*, 20(2), 135-157.
[https://doi.org/10.1016/S0272-6963\(01\)00091-2](https://doi.org/10.1016/S0272-6963(01)00091-2)
- Miles, I. (1993). Services in the new industrial economy, *Futures*, 25(6), 653–672.
- Miles, P., C. (2013). Competitive strategy: the link between service characteristics and customer satisfaction. *International Journal of Quality and Service Sciences*, 5(4), 395-414.
- Mina, A., Bascavusoglu-Moreau, E., & Hughes, A. (2014). Open service innovation and the firm's search for external knowledge. *Research policy*, 43(5), 853-866.
- Minayo, M. C. (2008). *O desafio do conhecimento: pesquisa qualitativa em saúde. 11a. Ed.* Hucitec: São Paulo.
- Mintzberg, H. (1973). *The Nature of Managerial Work*. Harper & Row, New York.
- Moeller, S. (2008). Customer integration – A key to an implementation perspective of service provision. *Journal of Service Research*, 11(2), 197–210.
- Moeller, S. (2010). Characteristics of services – a new approach uncovers their value, *Journal of Services Marketing*, 24(5), 359–368.
- Nelson, R.R., Winter, S. (1982). *An Evolutionary Theory of Economic Change*. Belknap Press: Cambridge, MA.
- Nelson, R. R. (1990). Capitalism as an engine of progress. *Research Policy*, 19(3), 193-214.

- Nijssen, E. J., Hillebrand, B., Vermeulen, P., Ron G.M. Kemp, R. (2006). Exploring product and service innovation similarities and differences, *International Journal of Research in Marketing*, 23, 241–251.
- Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., ... Rabinovich, E. (2010). Moving Forward and Making a Difference: Research Priorities for the Science of Service. *Journal of Service Research*, 13(1), 4–36.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of Retailing*, 64(1), 12-40.
- Pavitt, K. (2005). Innovation processes. In J. Fagerberg, D. C. Mowery, and R. R. Nelson, *The Oxford Handbook of Innovation*, pp. 86-114, Oxford University Press: Oxford.
- Peillon, S., Pellegrin, C., & Burlat, P. (2015). Exploring the servitization path: a conceptual framework and a case study from the capital goods industry, *Production Planning & Control*, 26(14-15), 1264-1277.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. Oxford University Press, New York. 272p. Reprinted in 1995.
- Pöppelbuß, J., Plattfaut, R., Ortbach, K., Malsbender, A., Voigt, M., Niehaves, B., & Becker, J. (2011). Service innovation capability: Proposing a new framework. *Proceedings of the Federated Conference on Computer Science and Information Systems*, (January), 545–551.
- Prahalad, C. K. and Hamel, G. (1990). The Core Competence of the Corporation, *Harvard Business Review*, 68(3), 79–91.
- Prahalad, C. K., Ramaswamy, V. (2004). Co-creating unique value with customers, *Strategy & Leadership*, 32(3), 4–9.
- Rathmell, J. M. (1966). What is meant by services?. *Journal of Marketing*, 30(4), 32-36.
- Reichert, F. M., Torugsa, N. A., Zawislak, P. A., & Arundel, A. (2016). Exploring innovation success recipes in low-technology firms using fuzzy-set QCA. *Journal of Business Research*, 69(11), 5437-5441. <http://doi.org/10.1016/j.jbusres.2016.04.151>
- Ritala, P., Hyöttylä, M., Blomqvist, K., & Kosonen, M. (2013). Key capabilities in knowledge-intensive service business. *The Service Industries Journal*, 33(5), 486-500.
- Rothwell, R. (1994). Towards the fifth-generation innovation process. *International Marketing Review*, 11(1), 7-31.

- Rubalcaba, L., Michel, S., Sundbo, J., Brown, S.W. and Reynoso, J. (2012). Shaping, organizing, and rethinking service innovation: a multidimensional framework. *Journal of Service Management*, 23(5), 696-715.
- Schmenner, R. W. (2004). Service businesses and productivity. *Decision Sciences*, 35(3), 333-347.
- Schumpeter, J.A. (1934). *The Theory of Economic Development*. Harvard University Press: Cambridge, MA.
- Schneckenberg, D., Truong, Y., & Mazloomi, H. (2015). Microfoundations of innovative capabilities: The leverage of collaborative technologies on organizational learning and knowledge management in a multinational corporation. *Technological Forecasting and Social Change*, 100, 356-368.
- Shostack, G. L. (1977). Breaking free from product marketing. *Journal of Marketing*, 41(2), 73-80. <https://doi.org/10.1177/002224297704100219>
- Spring, M., Araujo, L. (2009). Service, services and products: rethinking operations strategy, *International Journal of Operations & Production Management*, 29(5), 444-467. <http://doi.org/10.1108/01443570910953586>
- Stake, R. (1995). *The art of case research*. Thousand Oaks, CA: Sage Publications.
- Sundbo, J. (1997). Management of Innovation in Services, *The Service Industries Journal*, 17(3), 432–455.
- Sundbo, J. and Gallouj, F. (1998). Innovation in services, work package ., SI4S Project Synthesis. Step Group.
- Sundbo, J., & Gallouj, F. (2000). Innovation as a loosely coupled system in services. In *Innovation systems in the service economy* (pp. 43-68). Springer, Boston, MA.
- Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6), 285-305.
- Teece, D. J. (2019). A capability theory of the firm: an economics and (strategic) management perspective. *New Zealand Economic Papers*, 53(1), 1-43.
- Teece D, Pisano G, Shuen A. (1997). Dynamic capabilities and strategic management, *Strategic Management Journal*, 18(7): 509–533.

- Toivonen, M., & Tuominen, T. (2009). Emergence of innovations in services. *The Service Industries Journal*, 29(7), 887-902.
- Utterback, J., Abernathy, W. (1975). A Dynamic Model of Process and Product Innovation, *Omega, The International Journal of Management Science*, 3(6), 639–656.
- Vargas, E. R. D., & Zawislak, P. A. (2006). Inovação em serviços no paradigma da economia do aprendizado: a pertinência de uma dimensão espacial na abordagem dos sistemas de inovação. *Revista de Administração Contemporânea*, 10(1), 139-159.
- Vargo, S.L., Lusch, R.F. (2004). Evolving to a new dominant logic for marketing, *Journal of Marketing*, 68(1), 1-17.
- Wang, C. H., Lu, I. Y., & Chen, C. B. (2008). Evaluating firm technological innovation capability under uncertainty. *Technovation*, 28(6), 349-363.
- Ward, P., McCreery, J., Ritzman, L., Sharma, D. (1998). Competitive priorities in operations management. *Decisions Science*, 29 (4), 1035-1046.
- Williamson, O. (1985). *The Economic Institutions of Capitalism*. Free Press, New York. 450p.
- Williamson, O. (1999). Strategic research: governance and competence. *Strategic Management Journal*, 20(12), 1087-1108.
- Williamson, O. E. (2002). The theory of the firm as governance structure: from choice to contract. *Journal of Economic Perspectives*, 16(3), 171-195.
- Winter, S. G. (2003). Understanding dynamic capabilities, *Strategic Management Journal*, 24(10): 991–995.
- World Bank. (2018). Structure of output. *World Development Indicators*, The World Bank Group, <http://wdi.worldbank.org/table/4.2>. Accessed: 16 August 2020.
- Yam, R. C. M., Guan, J. C., Pun, K. F., Tang, E. P. Y. (2004). An audit of technological innovation capabilities in chinese firms: some empirical findings in Beijing, China, *Research Policy*, 33(8), 1123–1140.
- Yin, R. K. (2001) *Estudo de caso: planejamento e métodos*. 2. ed. Porto Alegre: Bookman.
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203.

- Zawislak, P. A., Alves, A. C., Tello-Gamarra, J., Barbieux, D., & Reichert, F. M. (2012). Innovation capability: From technology development to transaction capability. *Journal of Technology Management and Innovation*, 7(2), 14–25.
- Zawislak, P. A., Alves, A. C., Tello-Gamarra, J., Barbieux, D., & Reichert, F. M. (2013). Influences of the internal capabilities of firms on their innovation performance: a case study investigation in Brazil. *International Journal of Management*, 30(1-2), 329–348.
- Zawislak, P. A., Gamarra, J. T., Alves, A. C., Barbieux, D., & Reichert, F. M. (2014). The different innovation capabilities of the firm: further remarks upon the Brazilian experience. *Journal of Innovation Economics*, 13(1), 129.
- Zawislak, P. A., Fracasso, E. M., Tello-Gamarra, J. (2018). Technological intensity and innovation capability in industrial firms, *Innovation & Management Review*, 15(2), 189–207.
- Zeithaml, V. A., Parasuraman, A., & Berry, L. L. (1985). Problems and Strategies in Services Marketing. *Journal of Marketing*, 49(2), 33–46.
- Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2010). Services marketing strategy. *Wiley International Encyclopedia of Marketing*.

Appendix A – Interview Protocol

General information

Date

Time:

Place:

Company:

Interviewee:

Interviewee role:

Interviewee educational level:

Contact:

Interview length:

Year of foundation:

Number of founders and average age:

Founders education:

Sector of activity:

Number of employees:

Number of clients:

Products in portfolio:

International presence:

Annual revenue:

People enrolled in R&D:

Number of patents:

R&D expenditure (%):

New products launched:

Industry association:

Government incentives (grants, trainings,
consulting, etc.):

Prizes, recognitions, or certifications:

Introductory elements

1. How did the company come about?
2. Describe what services are offered and who are the customers.
3. What is the role of technology in firm's operations and management?
4. Are there external partners to provide the service? How does the company manage them?

5. How customer interaction influence:
 - a. The execution of the service;
 - b. Sales and after-sales process;
 - c. Management procedures;
 - d. The development of new services.

Operations

6. Describe the main service delivery processes.
7. How does the integration of customer resources into the service system happen?
8. How does the company standardize customer relationship procedures?
9. What improvements has the company made to the service delivery process recently?
 - a. If so, how was it done and what was the result (s) obtained?

Transaction

10. Describe the main business processes (purchases and sales) of the company.
11. How does the company manage the customer experience?
12. How the firm manages profit margins of the services offered?
13. What improvements has the company made in the commercial area recently?
 - a. If so, how was it done and what was the result (s) obtained?

Management

14. Describe the company's management practices.
15. How does the company keep employees trained and engaged?
16. What are the main risks of the operation and how are they mitigated?
17. What improvements has the company made to management recently?
 - a. If so, how was it done and what was the result (s) obtained?

Development

18. Describe how the company develops new services.
19. How does the firm generate ideas for changing service processes?
20. How do solutions co-create with customers or partners?
21. What improvements has the company made to the service (s) recently?
 - a. If so, how was it done and what was the result (s) obtained?

Innovation

22. Describe the economic performance of the company in recent years (variation in the amount of sales, costs, or profit).
23. What results do innovations generate for the company?
24. What is the pace of change for the company?
25. How does the company acquire and create knowledge (benchmarks, good practices, events, consultancies, training, new technologies, etc.)?
26. What is “innovation” for your company? Which area brings something new to the organization?

Appendix B – Secondary Data

Firm	Record	Type	Date of access	Webpage	Evidence
<i>TransportCo</i>	1	Video	May 03 2020	https://www.youtube.com/watch?v=xcrW39BCrf0	Keep equipment up to date
	2	Video	May 03 2020	https://www.youtube.com/watch?v=WKtHw7W-gI4	Definition of an innovation committee Monitoring the experience of using the services Offering additional services Defining failure prevention procedures
	3	Video	May 03 2020	https://www.youtube.com/watch?v=5M5h0BAUNTU	Implementation of quality programs and continuous improvement
	4	Video	May 03 2020	https://youtu.be/48R4MsgXMgk	Partnership with suppliers to develop solutions
	5	Video	May 03 2020	https://youtu.be/m1p8IhIrfI	Inform users of security procedures adopted Establish safety and hygiene procedures
	6	Video	May 03 2020	https://youtu.be/QxebGnNL7iU	Preventive maintenance of equipment
	7	Video	May 03 2020	https://youtu.be/2YcowyPuJXw	Establish equipment maintenance processes
	8	Video	May 03 2020	https://youtu.be/DNxrh_wVAyo	Encourage coexistence among employees
	9	Video	May 03 2020	https://youtu.be/GdPzFWb7asg	Offering new services adapted to the specific needs of customers
	10	Webpage	May 03 2020	http://fidelidade.ouroeprata.com/site/	Definition of loyalty program
	11	Video	May 03 2020	https://youtu.be/tTeJjE-NZRo	Creation of purchase incentive campaigns
	12	Video	May 03 2020	https://youtu.be/u-GCvR77hUo	Establish a digital channel for monitoring the service
	13	Video	May 03 2020	https://youtu.be/0DCicF92ZXw	Integration of areas for improvement of internal processes
	14	Video	May 03 2020	https://youtu.be/SgVHsnenYmw	Offering ranges of services with varied benefits
	15	Video	May 03 2020	https://www.youtube.com/watch?v=BJbSLDIGjYI	Scanned equipment inspection system
	16	Video	May 03 2020	https://www.youtube.com/watch?v=wxCTrGuTEfl	Seasonal adaptations of service offerings
	17	Video	May 03 2020	https://www.youtube.com/watch?v=bz2-rbvmwo4	Motivation programs for frontline employees
	18	Video	May 03 2020	https://www.youtube.com/watch?v=P_2-qspCkgQ	Presentation of details of the service provision process
	19	Video	May 03 2020	https://www.youtube.com/watch?v=v2zJ4haVv-g	Management professionalization
	20	Video	May 03 2020	https://www.youtube.com/watch?v=tNnQUg3fCpI	Providing a pleasant service environment

	21	Press article	May 03 2020	https://gauchazh.clicrbs.com.br/comportamento/viagem/conteudo-publicitario/2020/02/agora-e-possivel-viajar-de-onibus- apenas-com-pontos-conheca-a-parceria-entre-ouro-e-prata-e-nivel-ck6utz3980kq501qdg23bz1m4.html	Loyalty program definition
	22	Press article	May 03 2020	https://diariodotransporte.com.br/2020/03/02/grupo-ouro-prata-investe-na-inovacao-compartilhada-em-busca-de-novas-manieras-de-pensar-solucoes-para-o-transporte-rodoviario-de-passageiros/	Technical visits and participation in events Collect customer usability data Implementation of lean methods to execute processes Involvement of different actors to co-create solutions
	23	Press article	May 03 2020	https://www.bonde.com.br/colunistas/mercado-em-pauta/alianca-da-planalto-transportes-e-viacao-ouro-e-prata-compra-80-onibus-marcopolo-390182.html	Strategic partnerships to expand the service portfolio
	24	Press article	May 03 2020	https://diariodotransporte.com.br/2020/04/29/marcopolo-testa-solucao-de-biosseguranca-em-onibus-em-parceria-com-a-viacao-ouro-e-prata/	Partnership with suppliers to develop solutions
	25	Press article	May 03 2020	https://www.baguete.com.br/noticias/internet/06/04/2010/ouro-e-prata-wi-fi-no-onibus	Offering benefits while providing the service Implementation of management information systems
	26	Webpage	May 03 2020	https://www.viacaooouroeprata.com.br/site/default.asp?TroncoID=945181&secaoID=717174&SubSecaoID=0	Providing a pleasant service environment
<i>FinanceCo</i>	27	Video	May 03 2020	https://youtu.be/y83rgQ5y2c0	Information on how to carry out self-service
	28	Video	May 03 2020	https://youtu.be/Y1ftTATjRyo	Offering digital channels to perform the service
	29	Video	May 03 2020	https://youtu.be/RnVGBogX2bo	Ensure the security of data collected from the client
	30	Video	May 03 2020	https://youtu.be/DLoWMZ2hFpU	Creation of purchase incentive campaigns
	31	Video	May 03 2020	https://youtu.be/Np3AI3b90LM	Structuring corporate governance User involvement with the company Create a user community Network of geographically dispersed service points Courtesy of frontline employees
	32	Video	May 03 2020	https://youtu.be/KdM2HIHt8Yk	Participation in events of interest to users
	33	Video	May 03 2020	https://youtu.be/AOhC0T2bbDE	Conducting user training actions on the company's operating market and the services offered
	34	Video	May 03 2020	https://www.youtube.com/watch?v=cvBzfoWxs-c	Provision of partner services on digital channels
	35	Video	May 03 2020	https://www.youtube.com/watch?v=CIRuuitEemE	Disclosure of customer success stories

	36	Video	May 03 2020	https://www.youtube.com/watch?v=Wi1bkJ3s-UI	Offering specific services for niche markets Prioritize the relationship with the user Provision of several service channels
	37	Video	May 03 2020	https://www.youtube.com/watch?v=rEw4XojCCwo	Definition of loyalty program Offering ranges of services with varied benefits
	38	Video	May 03 2020	https://www.youtube.com/watch?v=2Iw1X0wD6u0	Provision of partner services
	39	Video	May 06 2020	https://www.youtube.com/watch?v=M0fTisw6cak	Insertion of technological user interface devices to facilitate the provision of the service
	40	Video	May 06 2020	https://www.youtube.com/watch?v=I8NP9m3ofdU	Interaction with startups
	41	Video	May 06 2020	https://www.youtube.com/watch?v=XyG2dzZaHyI	Involvement in innovation ecosystems
	42	Video	May 06 2020	https://www.youtube.com/watch?v=ATmhGdj6UBE	Conducting user engagement campaigns
	43	Video	May 06 2020	https://www.youtube.com/watch?v=EAbObx-m3wc	Ensuring employee satisfaction at work
	44	Video	May 06 2020	https://www.youtube.com/watch?v=7Fx0FExyFyw	Service availability in several channels
	45	Video	May 06 2020	https://www.youtube.com/watch?v=bMFUatWA3BA	Offer means to make the provision of the service more convenient for the user
	46	Video	May 06 2020	https://www.youtube.com/watch?v=Xbh6vQRWPKk	Integrate the user into the service system
	47	Video	May 06 2020	https://www.youtube.com/watch?v=J5oMRr6SSGk	Conduct informal interactions with the user
	48	Video	May 06 2020	https://www.youtube.com/watch?v=rzf10IepsY4	Offering self-service tools
	49	Video	May 06 2020	https://www.youtube.com/watch?v=G3ahKZcvViM	Prioritize the relationship with the user
	50	Video	May 06 2020	https://www.youtube.com/watch?v=7_GOwk19YLg	Render accounts about the services used by the client
	51	Video	May 06 2020	https://www.youtube.com/watch?v=Oj8_KgM4pI8	Engage employees with the company
	52	Video	May 06 2020	https://www.youtube.com/watch?v=vcth4Pwm2fs	Transparency with the customer
	53	Video	May 09 2020	https://www.youtube.com/watch?v=DtiQLxiogIw	Inform user about details of the service provision process
	54	Video	May 09 2020	https://www.youtube.com/watch?v=1DOIS_-XMDY	Optimize digital experience with a focus on the user
	55	Video	May 09 2020	https://www.youtube.com/watch?v=QvzYBHVfIdc	Rigor in the process of selecting people
	56	Press article	May 09 2020	https://www.opantaneiro.com.br/noticias/aplicativo-de-marketplace-do-sicredi-impulsiona-emprededorismo-em/157619/	Collaboration with startups to offer new services
<i>ConsultingCo</i>	57	Webpage	May 09 2020	https://www.anpeiexchange.com	Demonstrate in-depth technical knowledge

	58	Press article	May 09 2020	https://prefeitura.pbh.gov.br/noticias/pbh-e-elo-group-promovem-desafio-de-tecnologia-para-universitarios-mineiros	Involvement in innovation ecosystems
	59	Press article	May 09 2020	https://www.bitmag.com.br/2015/05/fusao-de-elogroup-e-lecom-podem-gerar-negocio-de-r-100-milhoes-em-2019/	Strategic partnerships to expand the service portfolio
	60	Press article	May 09 2020	https://oglobo.globo.com/economia/emprego/elo-group-ambiente-inovador-aliado-atividades-ao-ar-livre-para-exercitar-criatividade-13538413	Ensuring employee satisfaction at work Training routines for employees
	61	Press article	May 09 2020	https://www.napratica.org.br/dia-a-dia-estagiario-estagio-em-consultoria/	Close management contact with frontline employees
	62	Webpage	May 09 2020	https://elogroup.eadplataforma.com	Conduct user training
	63	Webpage	May 09 2020	https://elogroup.com.br/clientes/	Present success stories
	64	Video	May 09 2020	https://www.youtube.com/watch?v=VmNxobNm9jc	Position the company as a technical reference for customers
	65	Video	May 09 2020	https://www.youtube.com/watch?v=iaun3nLptbg	Conduct user training
<i>ChatCo</i>	66	Video	May 09 2020	https://www.youtube.com/watch?v=msqfS00_JSE	Technical visits
	67	Video	May 09 2020	https://www.youtube.com/watch?v=FNpuZG1tWEU	Providing a pleasant service environment
	68	Video	May 09 2020	https://www.youtube.com/watch?v=sgQt4Df0l8M	Engage employees with the company
	69	Video	May 09 2020	https://www.youtube.com/watch?v=sCPwDS66pww	Position the company as a technical reference for customers
	70	Video	May 09 2020	https://www.youtube.com/watch?v=6mHsPA5MTiw	Information on how to use the service
	71	Webpage	May 09 2020	https://www.zenvia.com/cases/chatbot-rentcarscom-atende-10-mil-pessoas-mes	Present success stories
	72	Video	May 09 2020	https://www.youtube.com/watch?v=Hrx0WZ_YBD8	Provide follow-up information on the service provided
	73	Video	May 09 2020	https://www.youtube.com/watch?v=AJkv8McXRaY	Participation in events of interest to users
	74	Video	May 09 2020	https://www.youtube.com/watch?v=reAomNAF9pw	Use of agile methods for team management
	75	Video	May 09 2020	https://www.youtube.com/watch?v=w8svgZyaZZ8	Conduct service demonstrations
	76	Video	May 09 2020	https://www.youtube.com/watch?v=9HG0mqvNees	Conduct user training
	77	Webpage	May 09 2020	https://www.zenvia.com/academy	Conduct user training
	78	Video	May 09 2020	https://www.youtube.com/watch?v=TID4BRE2Ggs	Conduct user training

	79	Video	May 09 2020	https://www.youtube.com/watch?v=8oQQubjH2Y4	Assist the implementation of the service in the customer process
	80	Video	May 09 2020	https://www.youtube.com/watch?v=rG8c_dnNwfl	Service customization to meet specific customer needs
	81	Press article	May 09 2020	https://inforchannel.com.br/zenvia-e-a-unica-da-america-do-sul-reconhecida-em-relatorio-do-gartner/	Search for certifications and recognitions that value the company's reputation
	82	Press article	May 09 2020	https://startupi.com.br/2019/03/zenvia-compra-startup-catarinense-e-passa-a-oferecer-solucoes-para-comunicacao-por-voz/	Acquisition of players to expand the service portfolio
	83	Press article	May 09 2020	https://www.revistalivemarketing.com.br/zenvia-combina-whatsapp-e-chatbots-para-aprimorar-a-experiencia-do-cliente/	Provision of new service features
	84	Press article	May 09 2020	https://canaltech.com.br/mercado/Apos-aporte-de-R-71-mi-Zenvia-foca-em-aquisicoes-e-expansao-internacional/	Fundraising for investments
	85	Press article	May 09 2020	https://newvoice.ai/2019/11/07/zenvia-anuncia-solucao-de-voz/	Establish partner program
	86	Press article	May 09 2020	https://www.jornaldocomercio.com/_conteudo/economia/2019/12/718625-zenvia-vai-investir-r-50-milhoes-em-processo-de-internacionalizacao.html	Definition of international expansion plan
	87	Press article	May 09 2020	https://computerworld.com.br/2019/07/26/zenvia-anuncia-parceria-com-paypal-e-novo-plano-de-sms-on-line-de-r-60/	Provision of various means of payment
	88	Press article	May 09 2020	https://valor.globo.com/empresas/noticia/2020/01/30/zenvia-recebe-aporte-de-us-54-mi-em-rodada-liderada-pela-oria-capital.ghml	Investor Relations
	89	Press article	May 09 2020	https://www.mobiletime.com.br/noticias/25/06/2018/zenvia-passa-a-vender-sms-pela-internet/	Offering self-service tools
	90	Slides deck	May 09 2020		Definition of criteria for R&D projects Portfolio management of innovation projects
<i>CoffeeCo</i>	91	Press article	May 08 2020	https://www.nsctotal.com.br/colunistas/pancho/cafe-cultura-quer-abrir-cafeteria-em-blumenau-ate-o-fim-do-ano	Expansion of service units
	92	Press article	May 08 2020	https://ocp.news/entretenimento/cafe-cultura-promove-oficina-cafe-segredos-e-sabores-em-florianopolis	Consumer education

	93	Press article	May 08 2020	http://www.informefloripa.com/2019/08/08/cafe-cultura-e-eleita-a-melhor-franquia-de-cafeteria-do-sul-do-brasil-e-a-oitava-do-brasil/	Ensuring partner satisfaction
	94	Webpage	May 08 2020	https://www.colmeialab.com.br/cafecultura	Create an environment of interest to the user at the service location
	95	Press article	May 08 2020	https://exame.abril.com.br/pme/esse-cafe-de-floripa-sera-a-starbucks-brasileira/	Define an expansion plan Assess competitors and market penetration space Proximity to suppliers
	96	Press article	May 08 2020	https://acontecendoaqui.com.br/marketing/cafe-cultura-lanca-web-serie-destacando-o-poder-transformador-do-cafe-na-vida-das-pessoas	Establish affective relationships with users
	97	Video	May 08 2020	https://www.youtube.com/watch?v=P3wJVSIE7a0	Rigorous selection of suppliers Management professionalization
	98	Video	May 08 2020	https://www.youtube.com/watch?v=C5GzsuOtB5g	Perform tests to deliver a standard service
	99	Video	May 08 2020	https://www.youtube.com/watch?v=dYoNmP7k6IQ	Identify ways of brand differentiation
	100	Video	May 08 2020	https://youtu.be/g4reNxdb3DY	Ensuring employee satisfaction
	101	Video	May 08 2020	https://youtu.be/yo89T2H5vN8	Demonstrate technical knowledge
<i>BurritoCo</i>	102	Slides deck	May 09 2020		Monitoring of performance indicators Market monitoring Presentation of data to attract partners
	103	Press article	May 09 2020	https://destemperados.clicrbs.com.br/experiencias/oak-s-burritos-rapido-e-gostoso	Providing a pleasant service environment Provide usability information
	104	Press article	May 09 2020	https://revistapegn.globo.com/Banco-de-ideias/Alimentacao/noticia/2019/12/eles-criaram-uma-empresa-na-faculdade-e-hoje-faturam-r-5-milhoes.html	Fundraising for investments
	105	Press article	May 09 2020	https://www.startse.com/noticia/startups/startup-oaks-burritos-de-comida-mexicana-transforma-funcionarios-em-empresendedores	Planning the expansion of the service units
	106	Video	May 09 2020	https://www.youtube.com/watch?v=i0SXIFlg90	Engage employees with the company Career plan for employees
	107	Webpage	May 09 2020	https://www.oaksburritos.com/entrega/	Offering new services adapted to the specific needs of customers