Abstract

This study is grounded in the evolving perspective of Service Marketing, Service-Dominant-Logic and Service-Logic and aims to provide a holistic view of how the digitalization of interactions affects the service provided by the restaurant and in turn the customers’ value creation processes. More exactly, the study examines a digital system for information exchange, order placements and payments in a restaurant on the Swedish market. The study adopts a qualitative approach and data has been collected through the use of unstructured observations and semi-structured interviews. The findings are that the system for digital interactions has both positive and negative effects on value-creation. It also changes other aspects of the service not directly linked to the system. If this ultimately creates more or less value for the customers is believed to depend on the customers’ individual differences, but if the system is used as a complement to the already existing service rather than as a substitute of the human interaction there are opportunities for a successful implementation.
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1. Introduction

Going out to dinner at a nice restaurant means enjoying delicious food and wine and being pampered with great service by the restaurant’s staff. The waiter will make sure that you are seated comfortable, answer any questions you might have and will be determined to make your stay as enjoyable as possible. Not much has changed in the restaurant industry during the last century. The service encounter at a restaurant looks almost the same as it did a hundred years ago. However, some pioneers have tried to implement the latest technological advancements and there are restaurants where instead of interacting with a waiter, you use a digital system instead. But what really happens to the restaurant experience if the waiter is replaced?

1.1 Problem statement

Digital technology’s impact on business has been studied by a plethora of scholars during the last decades (see for example Barua, Konana, Whinston & Yin, 2004), but as stated by Oronosky and Chathoth (2007), investments in digital technology, for a long time, seemed to be lagging behind in most of the hospitality industries. However, researchers had noted that positive effects on consumers’ perceptions of service could be drawn from digital investments (Kim & Ham, 2006) and posited that investments in digital technology could be beneficial for firms in the restaurant industry as well (Oronosky & Chathoth, 2007). In the ten years since the article by Oronosky and Chathoth was published, this situation has changed and already in 2009, Mozeik, Beldona, Cobanoglu and Poorani pointed to the imminent growth of restaurants’ adoption of e-services. However, their study found that technological investments were mainly focusing on informational and transactional behaviors rather than interactions, in other words finding menus and directions online, booking tables or ordering take-out.

Today, interactional technology could be found in other industries. One such example comes from the retail industry and their use of customer service chatbots, where a customer can chat with an artificially intelligent program instead of a human being. Moreover, more contemporary scholars have found that face-to-face contact could be substituted by information communication technology as some systems are now advanced enough to resemble interpersonal communication and resource exchange (Breidbach & Maglio, 2016). This would imply that the technological advancements are sufficient enough to create a system that could substitute human interactions in
the restaurant industry as well. An example of this could be a digital system for order-taking, but apart from fast-food restaurants this still seems to be lacking in the Swedish restaurant industry.

The benefits of implementing a digital system that could replace some of the work tasks previously performed by humans are obvious. If a restaurant can reduce the amount of staff, personnel costs would evidently be cut. Therefore, the fact that this is not widely spread in Swedish restaurants must have its reasons. One explanation can be that restaurants that have tried to implement a digital system for order-taking have not been able to make it profitable and thereby abandoned the system. This became evident in the early stages of this study when the owner of such a restaurant was interviewed and stated that although a promising idea, they could not make it work in practice. This indicates that there must be some drawbacks to the strategy which are not as obvious at first glance, or that the more evident benefits of cost-cutting might be hard to reap. A problem with the implementation of a digital system for order-taking could perhaps be found in the writings of Zuboff and Maxmin (2002) and what they refer to as transaction starvation. The authors argue that some companies become too focused on extreme cost-cutting measures and that this starves important value-creating processes. Applied in this scenario, the drive to reduce the costs by exchanging employees with a digital system could possibly destroy or remove some of the aspects that create value in a restaurant visit. Zuboff and Maxmin (2002) also point to the importance of front line personnel as they, and the competences they possess, are essential for the provision of great service. With this argumentation, it becomes of interest to study the value-creation process in restaurants, and especially one in which interactions takes place digitally. Such a study would lead to a better understanding of the impact of digitalization on interactions as well as be able to answer whether this change would starve important value-creation processes for the restaurant visitors or generate positive benefits.

The notion that cost-cutting activities could decrease value-adding aspects is also heavily discussed in the research fields of service marketing, which in later years have gained a lot of traction and is now by many perceived as the new marketing logic. In their vastly discussed article, Vargo and Lusch (2004) argue that a lot of the theories that emerged during the 1900s put too much emphasis on the company and how value was created through the production process (Vargo & Lusch, 2004). They argue that companies instead need to put the focus on the
customers and how they create value from the service provided by the company, a belief that is backed up by many scholars on the subject (Grönroos & Voima, 2013, Grönroos, 2006, Echeverri & Skålen, 2011). Scholars have also lifted this in direct relation to the switch from person-to-person service encounters to automated self-service, which a digital system for ordering would be (see Plé & Chumpitaz Cáceres, 2010; Echeverri & Skålen, 2011). Plé and Chumpitaz Cáceres (2010) discuss that the misuse of resources from one part of the interaction in order to increase their own well-being usually leads to a process in which value is destroyed, and that an example of this could be when a company implements an automated self-service system and takes away the opportunity for person-to-person service.

On the other hand, there are writings studying technological advancements and how they could positively affect value-creation. For instance, Kleijnen, de Ruyter and Wetzels (2007) argue that digitalization can enhance the customer’s perception of the service experience. Similarly, Saarijärvi, Mitronen and Yrjola (2014) discuss how firms can leverage mobile services to create value for their customer. Further, Harisson and Waite (2015) argue that digitalization enable customers to take on a more active role in the co-production of the service, something which has been argued to be positive for value-creation (Etgar, 2008).

As previously argued for, the use of a digital system for order-taking is not yet widely spread on the Swedish market and restaurants that have tried to implement such a system have not been able to make it work. Nevertheless, it seems as though the phenomenon could be advantageous if implemented in the right way. In order to do so there needs to be a clear understanding of customers’ value-creation processes. Although the service marketing scholars provide an extensive idea of how value is created and writings on technology can add further insight to aspects that affect this in a digitally mediated service, our understanding of the process is not complete. Much writing have tried to explain the value-creation process and suggested that the interactions between the firm and the company are a crucial part of this process (Vargo & Lusch, 2004; Grönroos & Voima, 2013). However, most of these writings do not make any difference of whether the interaction is human-to-human or carried out through a digital system. Theories that do discuss a change from human-to-human to digital interaction both argue that this could be negative for the value-creation (e.g. Plé & Chumpitaz Cáceres, 2010; Echeverri & Skålen, 2011),
but also that technology can substitute human interaction (Breidbach & Maglio, 2016) and that technology can positively affect value-creation (Kleijnen et al., 2007; Harisson & Waite, 2015; Saarijärvi et al., 2014; Wang & Wu, 2012). However, these writings often lack a more comprehensive view of the value-creation process and lack in their consideration of how the digitalization changes the entire process of providing service. With this as a basis, this study argues that there is need for a study taking a holistic view of the customer's value-creation process, not only by investigating positive aspects in relation to digitalization but also by looking at how this changes the entire service provided and thereby the value created.

1.2 Aim of the study
This study aims at understanding how the customers’ value-creation processes are affected by digitalization. By taking a holistic approach, this study hopes to add to the understanding of how interactions are influenced by digitalization and what effect this has on the service provided and thereby the value-creation. From a theoretical perspective, we hope to contribute to the growing body of literature regarding digitalization and service and provide insights into how digitalization transforms service.

1.3 Research question
How does a digital system substituting a human-to-human interaction affect customers’ value-creation processes in a restaurant visit?
2. Literature review

Based on the study’s aim, the overreaching objective in the literature review is to give the reader a clear idea of how previous scholars and this article perceive value and the processes that creates it. The study adopts a perspective based on writings on service marketing such as Service-Dominant-Logic and service-logic. In order to give the reader a more encompassing comprehension of this perspective the literature review starts out with a description of the, to the study, most relevant concepts in these research fields including service, operand/operant resources, value-in-use, interactions, and the service context. After the establishment of the study’s perspective the literature review will look closer at the restaurant industry and digitalization in particular and what writings on these subjects can add to the understanding of value-creation.

2.1 Service-logic perspectives

After a heavy focus on the production and distribution of goods that stemmed from the industrial revolution services became more important both in business practice and academia in the latter half of the 20th century (Vargo & Morgan, 2005). In these days service was mainly seen in relation to goods, often with the differentiating characteristics of intangibility, heterogeneity, inseparability and perishability (IHIP) (Lovelock, 1983). However, much focus was still on the firm's role in the production and distribution, but scholars putting more emphasis on the customer and an expanded notion of service started to emerge (see for example Shostack, 1977; Grönroos, 1978). Along with this there also came writings considering the importance of the period of time when the customer interacts directly with the firm, what is often referred to as the service encounter (Bitner, 1990). The service encounter was believed to give the firm an opportunity to actively influence part of the consumption process, and the management of these encounters were believed to be of outmost importance for customer satisfaction (ibid.). In later years, many scholars have further expanded the notions of both service (e.g. Vargo & Lusch, 2004; Grönroos, 2006) and service encounters (e.g. Grönroos & Voima 2013; Akaka & Vargo, 2015) but the ideas about managing customer-firm interaction as a way to facilitate customer satisfaction and value-creation remains.
2.2 Service as an expanded concept

One of the most prominent writings on the study of service is Vargo and Lusch's (2004) presentation of service-dominant-logic. In their article, the concept of service is vastly broadened from the notion of service as merely a product distributed by a firm. Service is instead seen as “the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself” (Vargo & Lusch, 2004, p. 2.). To more easily understand the reasoning, the authors give the example of a fisherman and a farmer. Since the fisherman is in need of the farmer’s good (wheat) and the farmer in need of the fisherman’s good (fish) there is reason for exchange. However, the basis for the exchange is not the fish for the wheat but rather the fishing services for the farming services. In this sense, all types of exchange are exchanges of service (application of specialized competences). This contrasts earlier views on service as merely a product as defined by the IHIP characteristics (Lovelock, 1983). In these more traditional theories, the firm is often viewed as adding value to a product throughout different processes in the production- or value chain (Vargo & Lusch, 2004). Thereby the goods become embedded with value that is later realized through the exchange with the customer. In service-dominant-logic the products are not considered as embedded with value, rather the products are believed to be carriers of service provision. In other words each individual working on the product is believed to embed service into the product. The customers can then later in the consumption of the product make use of this service and create value. The article further explain the concepts of operand and operant resources where operand resources are “resources on which an operation or act is performed to produce and effect” whilst operant resources are resources “which are employed to act on operand resources (and other operant resources)” (Vargo & Lusch, 2004, p. 2). Given the example above, the competence of farming and fishing are operant resources which are employed on the operand resources of wheat and fish. Furthermore, Vargo and Lusch (2004) see operant resources as dynamic while operand resources on the contrary are static, and argue that a firm's operant resources are the basis for its competitive advantage.

The concept of operand and operant resources are useful for the understanding of the service-logic perspectives. However, Vargo and Lusch’s (2004) overall view of service is too all-encompassing for this study as the moment of service provision exceeds the one of the service
encounter. Since the area of research in this study is the customer-firm interactions in the service encounter and the context surrounding it, a conceptualization more focused on these aspects will be applied. This study will thereby use another perspective on service brought forward by other service marketing scholars. Such a conceptualization can be found in Grönroos (2006), which agrees with many of the propositions of service-dominant-logic, but treats service as a process offered by the firm to the customer. Grönroos argues that service can be defined on the basis of what it is as “processes that consist of a set of activities which take place in interactions between a customer and people, goods and other physical resources, systems and/or infrastructures representing the service provider and possibly involving other customers, which aim at solving customers’ problems” (Grönroos, 2006, p. 7). However, Grönroos (2006) also argues that service can be defined on the basis of what it does for the customer. Hence, service could be seen as the process of supporting customers in their value-creation. To more easily comprehend the first definition we can consider a restaurant visit. The service in this setting would be activities where the restaurant interacts with the customer in a problem-solving way, for example by taking orders, introducing the food, designing the physical surroundings or implementing electronic payment systems, to name a few. From the starting point of the second definition, service is considered as the entire process that facilitates customer value-creation. In this study service will henceforth be defined based on Grönroos (2006) second argumentation about what it does for the customer as the process of supporting customers in their value-creation. This would also include Grönroos (2006) first definition of what service is which puts the emphasis right at the heart of the service encounter and thereby the area of interest to this study.

2.3 Value in service

Value is a vastly complex concept that has been deemed as “perhaps the most ill-defined and elusive concept in service marketing” (Grönroos & Voima, 2013, p. 134). It will also be shown that value and what consumers believe is valuable is highly individual (see 2.4.1 The micro-level). However, what value truly is could be seen as less important. What is important is that there is a process creating something the customers believe is valuable. Therefore what value actually is for each consumer does not need to be defined as long as there is a process, and an understanding of the process, creating it. In order to give an overarching view of this process, this study will adopt a framework originally presented by Grönroos and Voima (2013) that
encompasses all stages of the value-creation process from the production of the service by the company to the consumption of the process by the consumer. This framework divides the process of value-creation into three spheres; the producer-sphere, the consumer-sphere and the joint-sphere (see Figure 1). These spheres will be reviewed separately in the following sections.

![Figure 1. Value-creation spheres (based on Grönroos & Voima, 2013)](image)

### 2.3.1 Value-creation in the consumer-sphere

In the consumer-sphere the activities of consumption that the customers engage in by themselves are considered (Grönroos and Voima, 2013). Just as the concept of service has been broadened, so has the notion of consumption. In their seminal article on the experiential aspects of consumption, Holbrook and Hirschman (1982) noted that the study of consumption had long been heavily focused on the output of tangible benefits from goods and services based on their utilitarian functions. The authors argued for a problematization of the phenomenon and introduced a framework for the study of the experiential aspects of consumption, in other words the emotional and imaginative aspects of consuming (Holbrook & Hirschman, 1982). This expanded view on consumption has been further developed and refined by many scholars over the years, examples include the study on cultural meaning of consumer goods (McCracken, 1986), the role of playful consumption (Holt, 1995), relationship structures between customers and brands (Fournier, 1998), consumer perceptions of brand personality (Aaker, 1997), consumer loyalty (Oliver, 1999) as well as studies on brand communities (Muniz & O’Guinn, 2001) and subcultures of consumption (Schouten & McAlexander, 1995). These additions have highlighted
As Grönroos and Voima (2013) argue, consumption cannot only be understood as a static part of a firm-customer transaction, it should be regarded from a consumer perspective at a relational level within its social and institutional context. Moreover, consumption is not only the physical act of consuming a good or service but can also be a mental process that transcends spatial and temporal boundaries. This is discussed by Helkkula, Kelleher and Pihlström (2012) who argue that both lived, imaginary as well as anticipated experiences influences value-creation in a service experience. Grönroos and Voima (2013) further explain that dreaming of a future consumption or experience may create value, for example dreaming about a vacation or reliving memories of past experiences.

Consumption and value are two intrinsically linked concepts as value-in-use emerges from consumption (Grönroos & Voima, 2013). As previously discussed, early theories on consumption focus on value that is embedded into a product by a producer. The value is then exchanged in a transaction and consumed by a customer, what is known as value-in-exchange (Vargo & Lusch, 2004). In contrast, the emerging view on consumption in service marketing emphasizes that firms are merely able to create value offerings, and that value can only be perceived and determined by the consumer in its consumption of a product or service over time, i.e. value-in-use (Vargo & Lusch, 2004; Grönroos & Voima, 2013). This definition shifts the focus on value-creation from a firm-perspective to a consumer-perspective. According to many service marketing scholars, value is something that is always uniquely experienced and contextually perceived by the consumer (Grönroos & Voima, 2013) or as presented in service-dominant-logic as “always uniquely and phenomenologically determined by the beneficiary” (Vargo & Lusch, 2008, p.7).

An important note on value-creation is that the phrase has inherently positive connotations. It is equally important to regard that there are both destructive as well as constructive phases of value-creation (Plé & Chumpitaz Cáceres, 2010; Echeverri & Skålen, 2011). Firms can trigger value-destruction if they misuse or fail to apply their resources in a manner that is congruent with the
customers’ expectations (Echeverri & Skålen, 2011). This misuse can be intentional and is then often the result of a firm that is seeking to increase its prosperity by limiting the customer’s capacity to adapt the service for themselves. This could, for instance, be seen in the switch from human-to-human to self-service, a strategy which is regularly employed as a cost-reductive and productivity-enhancing measure (Plé & Chumpitaz Cáceres, 2010). These strategies often limit the customers’ ability to adapt the service and constrain them to the limits of the self-service technology, which ultimately might lead to value-destruction (ibid.)

As could be seen from the writings of the aforementioned scholars, consumption has been problematized into a vast and complex construct. Therefore this study will handle it as such and not present an exact definition. What could be said concerning this study’s view of consumption is however that it should be viewed as an act of experiencing a product. This act of experiencing incorporates utilitarian, emotional, and imaginative aspects, and transcends the moment of physical consumption both in time and space. It is also through the act of consumption that value-in-use emerges. Finally, consumption is dependent on the context of the service which will be discussed in more detail later on in the literature review (see 2.4 The service context).

2.3.2 Value-facilitation in the producer-sphere

In the producer-sphere the activities that the firm engages in by themselves are considered (Grönroos & Voima, 2013). In a restaurant, this could for instance be the preparation of ingredients or the decoration of the restaurant. In contemporary service marketing, value is not considered created in these activities (Grönroos 2006; Vargo & Lusch, 2016). Rather these perspectives view all value as created, or emerged, in the consumption process of the customer i.e. value-in-use (ibid.). This does not mean that the producer’s role in value-creation is of lesser importance since the producer facilitates value-creation through its activities (Grönroos & Voima, 2013; Vargo & Lusch 2004). The belief is on the other hand that instead of creating value through its activities, the firm lays the ground for customers to later on create value in their consumption processes (ibid.). In this sense, the role of the firm does not change particularly from theories based on firm-centric perspectives, only that value is created elsewhere. This also implies that much of the theories with the standpoint that value is created by the firm are still relevant, although based on a somewhat flawed logic (ibid.).
2.3.3 Value-creation and facilitation in the joint-sphere

An important part of the service-logic perspectives is their view of interactions between company and customer, and how this can facilitate value-creation. This happens in the joint-sphere (Grönroos & Voima, 2013). Since the research question is focused on how a digital system substituting human-to-human interaction affects the value-creation process, the change is believed to originate from the interactions. Thereby the focus of this study will be on the interactions taking place in the joint-sphere. An important aspect relating to interactions is co-production. Service-dominant-logic describes co-production of value as when a customer influences the creation of the value proposition (Vargo & Lusch, 2004). An example of this could be when a customer makes specific customizations. Much in the same way Grönroos and Voima (2013) talks about joint value-facilitation. The authors argue that the consumption and production process is not done by the consumer respectively producer alone. Rather the processes are simultaneous and intertwined. The producer has the ability to invite the consumer to take part in the production process. This happens every time the customer interacts with the producer in a way that alters the service provided. In the same way, the customer has the ability to invite the provider into the consumption process. When this happens the provider can affect the consumption process, by for instance altering the settings in which the consumption takes place (see 2.4 The service context).

In the joint-sphere the nature of the interactions are direct. Direct interaction is defined as a process in which interactions take place in an active coordinated and dialogical way (Grönroos & Voima, 2013). In other words, it can be explained as all interactions in which one part in some way responds to the actions of the other part. This both happens when the customer takes part in the production process, for instance by asking the restaurant to serve a dish without a specific ingredient, and when the firm takes part in the consumption process, for example by guiding the customer through the service process.
2.4 The service context

The interactions, that are the main focus of this study, always takes place in, and are affected by, a greater context (Akaka & Vargo, 2015). Writings considering the service context have been many, including among others the physical environment, i.e. the servicescape (Bitner, 1990; 1992); past, current, and envisioned future customer experiences (Helkkula et al., 2012); the social context (Edvardsson, Tronvoll & Gruber, 2011); interactions (Grönroos & Voima, 2013) and institutions (Vargo & Lusch, 2015). A perspective that to a large extent converges with the view on service context laid forth in this study and incorporates most aspects brought forward by other writings on the subject, is the one of service ecosystems (Chandler & Vargo 2011; Akaka, Vargo & Schau, 2015; Akaka and Vargo 2015). Akaka and Vargo (2015, p. 456) bring forward the definition of service ecosystems as “relatively self-contained, self-adjusting system[s] of resource-integrating actors connected by shared institutional arrangements and mutual value-creation through service exchange”. This definition might be hard to comprehend but bears the advantage of expanding the service context from a focus solely on the service encounter to how it is affected by the physical and social surroundings, other actors, the customer’s previous experiences and larger institutional arrangements (i.e. compilations of collective norms, rules and meanings). This perspective also divides the service context into three dimensions or levels namely micro, meso and macro that will be used to clarify this study’s view on the service context.

Note that, although drawing on many of the thoughts laid forward by authors on service ecosystems these writings are often based on service-dominant-logic and thereby differ slightly from this study in some of the underlying conceptualizations (e.g. the one of service). This is however not believed to affect the service context applicability on this study’s perspective on the value-creation process. Also important to remark is that although presented separately as three different dimensions, the micro, meso and macro levels are highly interdependent and perceived at the same time by the consumer (Akaka & Vargo, 2015).
2.4.1 The micro-level

In the micro dimension, the actions and interactions between individuals and the micro-level institutions that guide them are considered (Akaka & Vargo, 2015). As aforementioned, value is uniquely experienced and determined by the customer (Grönroos & Voima, 2013; Vargo & Lusch, 2008). This means that customers will ascribe different value to the same service based on their individuality. Holbrook and Hirschman (1982) for instance describe the emotional and imaginative aspects of consumption, something that could be linked to the individual differences among customers. Helkkula et al. (2012) argue that an individual’s past, current and imagined future experiences are aspects that influence the service encounter and thereby the value ascribed to the service. Situated in the restaurant industry we can for example imagine that not every customer has the same experiences of a certain kind of food. One customer might have had positive experiences of the Italian cuisine while someone else have not, which would make their experience of visiting an Italian restaurant highly different. These differences are believed to affect the interactions and the perception of the interactions between the customers and the firm and thereby the service and how it is valued (Akaka & Vargo, 2015). Bitner (1990) also lifts the importance of expectations in the evaluation of service encounters. If a customer has low expectations but is happily surprised by the service the satisfaction will be high, which could be assumed positive for value-creation.

In summation, the micro-level of the service context considers aspects concerning the individual that affect the interactions, both between customer and the product in the consumer-sphere and between customer and the firm in the joint-sphere. Moreover, it concerns how these interactions are valued by the customers depending on their individual differences.

2.4.2 The meso-level

The meso perspective considers the physical and social surroundings of the interactions and is based on the writings on servicescapes first presented by Bitner in the early 1990s, which later has been used and expanded by many scholars. The servicescape was originally defined as “the built environment (i.e., the manmade, physical surroundings as opposed to the natural or social environment)” (Bitner, 1992, p. 58). However, in later writings, both the notion of servicescape and the meso-level of the service context have been expanded to include the social surroundings
as well, and scholars argue that sometimes social needs such as identifying with the place affects the evaluation of a servicescape more than its physical attributes (Akaka & Vargo, 2015). Bitner (1992) describes the servicescape as consisting of environmental dimensions (e.g. temperature, noise, layout, style of decor etc.). These environmental dimensions create a holistic perception of the servicescape which in turn will affect the behaviors of both customers and employees. The servicescape is believed to generate both approaching and avoiding behavior such as staying longer, spending more money or conversely leaving early and spending less money (Bitner, 1992). Furthermore Bitner (1992) believes that the servicescape influences the social interactions between and among customers and employees in that some servicescapes foster social interactions whilst others discourage it.

Studies have also been made specifically of the servicescape in restaurants. One such study is Edwards and Gustafsson’s (2008) study of “the room” and its atmosphere as aspects of the meal. A lot of the aspects believed to be of importance for “the room” and the atmosphere is the same as identified by Bitner (1992) such as ambient temperature, noise level, and layout; but more specific aspects such as type of crockery, cutlery, condiments, seat booths, number of views from different seats and the nationality of the restaurant are also identified. Edwards and Gustafsson (2008) also discuss the human variables affecting atmosphere and put forward the notions of density and crowding. The density is something perceived by the customer and is dependent on variables including number and type of people, but also a perceived standard which could make one type of restaurant more easily crowded than others. Crowding is a linked concept referring to the unpleasant feeling a customer might get when there is to high density in a restaurant, and is thereby a direct function of density (ibid.). Customers are believed to feel less crowded if they have a perception of control over the situation, do not have a specific goal with the consumption and feel less risk and time pressure towards the purchase.

Akaka and Vargo (2015) also discuss how meso-level institutions affect the servicescape. This could be institutions regarding how to perceive and act in a specific type of restaurant. For instance, people often have ideas of what constitutes a good quality restaurant, how its staff should behave but also how customers of such restaurants should behave. Although institutions
by definition are collectively held not all individuals share the same institutions, meaning that institutions do not affect all customers in the same way (ibid.).

To sum up, this study’s view of the meso perspective includes the physical and social surrounding of the interaction. The surroundings are affected by physical, atmospheric and social factors. Moreover, the interpretation of the surroundings is affected by meso-level institutions. The meso perspective is perceived holistically by the customer and is believed to affect the actions of, and interactions between customers and employees as well as the value created.

2.4.3 The macro-level

At the macro-level of the service context, this study considers the socio-historical contexts and institutions that from a societal-level influence the interactions. Institutions could be understood as “humanly devised rules, norms and meanings that enable and constrain human action” (Akaka & Vargo, 2015, p. 457) This implies that the institutions affect the interactions in the service encounter and that changes in the perception of a service experience can be brought on by changes in institutions (Akaka & Vargo, 2015). A macro-level institution could for instance be that it is eco-friendly to eat locally produced food, and thereby a restaurant that uses local produce could be perceived to be of a higher quality. This perception would however change if the institution changes.

Institutions, on all the three levels, are also believed to be shaped by interactions, making the interaction-institution relationship an interdependent one (Vargo, Wieland & Akaka, 2015). For instance, a change in how a customer experiences a restaurant visit is believed to be affected by the social structures. In the same way, institutions concerning different kinds of restaurant are in their turn shaped by how the interactions in these kinds of restaurants are carried out. This also suggests that firms to some extent can shape the institutions by their actions surrounding the interactions. Vargo et al. (2015) for instance argue for the importance of institutions in a company’s development of a new technology. New technologies need to be integrated with the already existing technologies but also with the prevailing institutions in order to create new value propositions (ibid.). As these new technologies become integrated in the institutions they also change the institutions which recursively affect the service and value-creation (ibid.).
This study also considers institutions as individually perceived and that different institutions are affecting different individuals differently. Although it is likely that two persons part of the same society share some institutions (e.g. institutions based on national culture) they can diverge in others (e.g. institutions related to religious belief or political standpoints) (Akaka & Vargo 2015). Writings of how institutions, communities, culture and ethnography affect consumption are vast (see for instance, Consumer Culture Theory, Arnould & Thompson, 2005; Ethnography of New Bikers, Schouten & McAlexander, 1995; Brand Communities, Muniz & O’Guinn, 2001; Value-in-context Chandler & Vargo, 2011 and the Context of Experience, Akaka, et al., 2015) but what could generally be said is that different societal structures and cultural belonging affect the consumption and thereby the value-creation processes.

In conclusion, the macro-level of the service context considers socio-historic contexts and societal institutions affecting individuals and their interactions. Although these institutions are all present in society they are not believed to affect all individuals in the same way and to the same extent. Institutions are also believed to be constantly formed and reformed by how interactions and actions are carried out.

2.5 Value-creation in the restaurant industry

The expanded view of service and its context has also been applied in the study of the restaurant industry. As Ryu, Han and Jang (2010) argue, early studies on the restaurant industry focused heavily on the core product (the food) as the main influencer on positive evaluations of a restaurant visit. Later writings have however paid more emphasis on experiential aspects of the restaurant visit (for example, Babin, Lee, Kim & Griffín, 2005 and Walter, Edvardsson & Öström, 2010), and incorporated a more holistic view on the consumption experience. The core product (i.e. the food) is still viewed as an important part of the consumption experience, but more emphasis has been placed on the service encounter and the context in which the consumption takes place. Walter et al. (2010) have for instance identified key drivers of customer value-creation in their empirical study on service experience in the restaurant industry. According to the authors, social interaction, the core service and the physical restaurant environment were found to be the most frequent drivers of service experience and value-creation. The personal
interaction and spatial closeness between restaurant staff and customer have also been emphasized as important in customers’ perception of the service experience by for example Clauzel and Riche (2015). Furthermore, this personal interaction has been argued to be more important for some customers, for example those with specialized needs such as the visually impaired (Dias de Faria, Ferreira da Silva & Brantes Ferreira, 2012).

2.6 Digitalization’s effect on interactions and the value-creation process

Schumann, Wünderlich and Wangenheim (2012) argue that there is a substantial difference between technology-mediated and strictly human-to-human services. However, Breidbach and Maglio (2016) discuss that digital technology can act as a substitute for face-to-face interaction. Digitalization’s transformative effect on interactions and of the roles of both the consumer and the service provider in the service delivery process has been studied by many scholars (see for example Hagberg, Sundström & Egels-Zandén, 2016; Campbell, Maglio & Davis, 2011). For instance, digitalization has been argued to be blurring the boundaries between service provider, employees and consumers (Hagberg et al., 2016). It has also enabled consumers to take on more responsibility for the co-production of the service experience for example in the form of self-service technology (Hilton & Hughes, 2013; Harrison & Waite, 2015; Schumann et al., 2012). Increased opportunities for customers to co-produce their service experience have been argued an important aspect in consumer’s value-creation process (Etgar, 2008). However, scholars have noted that co-producing opportunities emanating from self-service technology can be a double-edged sword, empowering some consumers in their value-creation process but not others (Harrison & Waite, 2015). Harrison and Waite (2015) argue that for some consumers, the increased choice and lack of personal contact associated with self-service can be confusing and disempowering, which could lead to the destruction of value. An important aspect noted by many scholars is that for some consumers, digital technologies are associated with varying degrees of anxiety (Hilton & Hughes, 2013; Balaji & Roy, 2017; Mozeik et al., 2009; Campbell et al., 2011; Schumann et al., 2012). Hilton and Hughes (2013) further discuss that firms must be careful when designing and implementing self-service technologies as they might disadvantage some consumers that are either not able or not willing to contribute to the co-production of the service. These factors have been argued to contribute to slow adoption of self-service technology in business in general (Campbell et al., 2011). Furthermore, scholars have noted that how new
technology is evaluated is linked to the perception of the amount of cognitive effort that is needed to operate it (Kleijnen et al., 2007). Consumers who exhibit less anxiety and perceive a digital tool as taking low amount of cognitive effort are more likely to experience feelings of enjoyment and express more satisfaction when using the digital tool. Conversely, those who associate technology with feelings of anxiety and a high demand of cognitive effort are less likely to express satisfaction and enjoyment out of using the tool (Mozeik, et al., 2009). In order for firms to make it easier for individuals who exhibit anxiety and perceive it as taking a high amount of cognitive effort, scholars have noted the importance of teaching and training customers to use new technological tools (Balaji & Roy, 2017; Campbell et al., 2011; Tétard & Collan, 2009). This has been argued as important both for customer acceptance of the new technology but also for increasing the potential value customers could get out of its use of the new technology (ibid.).

Digital developments have also had an impact the servicescape as described by Bitner (1990). Crewe (2013, p. 776) argues “that digital and physical spaces are interwoven and intertwined” and that practices, processes and products cannot be isolated from one another whether online or offline. This is reiterated by Hagberg et al. (2016) who note that digitization has led to an intermixing and merging of the digital and physical in various settings and that consumption should not be divided into physical consumption and digital consumption. These insights highlight the importance of expanding the servicescape into a hybrid concept that incorporates the digital environment as well as the physical (Hagberg et al., 2016; Breidbach & Maglio, 2016).

On a similar note, scholars have argued that the study on the digitalization of service has been heavily focused on self-service technology that fully substitutes the human-to-human service provision (Schumann et al., 2012; Breidbach, Brodie & Hollebeek, 2014). Technology can not only be used to substitute a human exchange but also be leveraged to enhance the service experience, both on experiential as well as utilitarian aspects (Saarijärvi et al., 2014; Breidbach et al., 2014; Schumann et al., 2012). It is important to note that these opportunities do not arise for firms automatically simply by investing in technology. To be able to tap the full potential, firms must take a holistic view on technology implementation (Šeric, Gil-Saura & Mollá-Descals, 2016). Scholars have also argued that there is always some loss of personal contact between service personnel and customers in the service encounter when implementing digital intermediaries (Schumann et al., 2012). This has been discussed as troublesome to the extent that
some consumers have higher needs for personal interaction and thus might not fully appreciate the value of using these digital intermediaries (Kleijnen et al., 2007).

Scholars have argued that consumers like to feel in control in their use of digital technology (Wang & Wu, 2012). When a consumer feel that they are in control of the technology and in extension its use in their consumption processes it can increase their feelings of empowerment which is associated with higher levels of value-in-use. Scholars have also noted the importance of designing digital technology to be more effortless to use than the alternatives, including a human alternative. This is important for technological adoption as many people often search for and use the most effortless solution to their needs (Tétard & Collan, 2009; Bouwman, Bejar & Nikou 2011). Designing digital technology to be aesthetically pleasing and filled with entertaining content, as to not feel cold and impersonal, has been argued important for consumers in order for them to appreciate the technology (Balaji & Roy 2017; Wang & Wu, 2014). These experiential aspects are also important for consumers to be able to immerse themselves in the technology which in turn is associated with higher degrees of value-creation (Wang & Wu, 2014). Scholars have also noted the importance of utilitarian aspects in consumer’s perception and evaluation of digital technology. Consumers’ perception that technology will be useful, have superior functionality to analogue alternatives as well perceptions that the technology will perform satisfactory have been argued to be important for customers’ value-creation processes (Gummerus & Pihlström, 2011; Balaji & Roy, 2017). Both utilitarian as well as experiential aspects were found to have an influence on the perceived value of service in a study on how self-service technology affects value perception in the restaurant industry (Wang & Wu, 2014). How easy to use the technology is perceived to be, how much control the consumer perceives that the technology give them over the dining experience and how useful and convenient they perceive the new technology to be, are the utilitarian aspects found to be positively linked to the perceived value of mobile service adoption in the restaurant industry (ibid.). The study also found that experiential aspects influence the perceived value of the mobile services for the dining experience. The more enjoyment that consumers perceived they would have when using the mobile service technology and how curious and excited they felt about the technology were found to be positively linked to the perceived dining experience (ibid.).
2.7 Summary and analytical model
As previously stated, value is individually perceived and emerges from the act of consumption. Since value is individual, the question of what value actually is for each customer is of lesser importance. What is important is that there is a working process creating something the customers regard as valuable. Consumption is further believed to be a process transcending spatial and temporal boundaries and including utilitarian as well as experiential aspects. Value-creation can take place in the consumer-sphere alone or in an interaction with the firm in the joint-sphere of the value-creation process. The firm’s role is to facilitate value either through activities in the producer-sphere or in conjunction with the consumer in the interactions in the joint-sphere. As the restaurant setting provides much opportunity for interactions and the shift from human to digital is in the interactions, the joint-sphere of the value-creation becomes the main focus of this study. To understand how consumers evaluate the firm’s value-facilitating activities and how they create value for themselves it is pertinent to look to the context in which the service takes place. Both the customer and the firm's activities and interactions take place in, and are affected by a greater context, the service ecosystem. This context can be viewed at the three aggregated levels of micro, meso and macro, which is represented by the dotted lines in the model below. The micro-level regards the actions and interactions between individuals and the micro-level institutions that guide them. These micro-level aspects are in turn nested in meso-level institutions, which includes the interpretation of the physical and social surroundings of the service encounter. This is further influenced by wider macro-level elements such as societal institutions and the broader socio-historic context. To illustrate how these aspects relate to each other, a model based on the writings of Grönroos and Voima (2013) and Akaka and Vargo (2015) has been created (see Figure 2).
Figure 2. Analytical framework. Based on Grönroos and Voima (2013) and Akaka and Vargo (2015).
3 Method

3.1 Research approach

In order to answer the research question, an approach with both deductive and inductive elements have been chosen. The formation of the perspective and model used to interpret the value-creation process has been based on a number of previous writings on the subject. Although no hypotheses have been clearly stated, the model explains how different concepts and aspects of the value-creation are believed to relate, thereby giving the study deductive features (Saunders, Lewis & Thornhill, 2012, p. 48). The process of value-creation is however believed to be complex and the more precise question of how this works in technology-mediated interactions is not clear. Therefore, the study will also aim at finding new insights that can build to existing theories of how these processes work, which is characterizing for an inductive approach (Saunders et al., 2012, p. 146).

A qualitative research method has been chosen as it is believed better at obtaining unexpected information (Blumberg, Cooper & Schindler, 2011, p. 145), which is suitable for understanding the complex nature of the value-creation process. Further, open-ended questions are a good way of gaining new insights and a deeper knowledge of a subject, whereby they will be used in this study (Saunders et al., 2012, p. 378). These types of questions are preferably used in qualitative studies through the use of semi-structured or in-depth interviews (Saunders et al., 2012, p. 379). The main concept of value is considered to be individually determined and to a large extent based on aspects such as the customers’ feelings, attitudes and emotional state. These aspects are due to their ambiguous and elastic nature hard to quantify and measure in a meaningful way, making a qualitative approach more appropriate (Saunders et al., 2012, p. 546). A qualitative study also provides a deeper and richer understanding of the studied phenomena and the context surrounding it (Saunders et al., 2012, pp. 146-147, 378), which is preferable to the study’s aim.

3.2 Research design

The design of the study is that of an exploratory case study. As previously stated, the research area is complex and although scholars have formulated theories around certain aspects of the studied area, research is still inconclusive. Moreover, argumentations by previous writings are in some cases contradicting. Since this study aims at clarifying the process of value-creation in
technologically-mediated interactions by both viewing value-creation more holistically and by hopefully finding new aspects to the process not yet discussed in previous literature, the study gains exploratory characteristics (Saunders et al., 2012, p. 171). The exploratory features of the study have also been a factor in the choice of a qualitative research approach (Saunders et al., 2012, p. 377; Blumberg et al., 2011, p. 145),

The study was conducted on one company, Pinchos, and more specifically in one restaurant, in Västerås. In this restaurant both observations and interviews with multiple customers were carried out. This makes the research design most consistent with a case study, which has been described as “a strategy for doing study which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (Saunders et al., 2012, p. 666). The case study is a good design for giving an encompassing understanding of both the context of research and the enacted processes (Saunders et al., 2012, p. 179). This is suitable for the aim of the study since both the processes and the contexts surrounding it are considered complex.

3.3 Research Strategy

The primary data was collected through unstructured observations and semi-structured interviews. Unstructured observations were used as they can be effectively employed in qualitative research in order to study a phenomenon in its natural setting at the time it occurs (Blumberg et al., 2011, pp. 274-276). This technique is often used to uncover novel insights about a phenomenon and to generate new avenues for investigation. The use of observations also allows the researcher to more fully comprehend the behavior of participants as well as understanding the social setting of the observed environment than what interviews alone would have, thus indicating high ecological validity (Saunders et al., 2012, p. 352). By studying the phenomenon as it occurs, the observational method can ensure that aspects of the phenomenon are not forgotten by a respondent through the sheer passage of time. This is something that can be evident in an interview setting, which often takes place after an event and not during (Blumberg et al., 2011, p. 275). Observations also facilitate the discovery of aspects that interviews alone might not reveal. This could be behaviors or emotions that respondents might not want to disclose in an interview or aspects they do not consider to be relevant. This could be because they
regarded them as too mundane or common to mention or alternatively because they are not able to adequately articulate themselves, also called respondent bias (ibid.). When conducting observations it is important to be aware of the fact that there are subjective aspects to the observational method and that the observers cannot be fully objective when observing and analyzing an observational setting, also called observer bias (Saunders et al., 2012, pp. 352-353). This bias could threaten the validity of the study (ibid.). However, this research bias is evident in most, if not all, data collection methods (Saunders et al., 2012, p. 192). Being aware of this risk and acknowledging the impact that subjectivity can have on the researchers is often sufficient for limiting the effect of subjectivity biases (Green, Carney, Pallin, Ngo, Raymond, Iezzoni, & Banaji, 2007). Also, writing thorough field notes from the observations is an effective technique for reducing the threat to the validity of the study (Blumberg et al., 2011, p. 282) (see 3.4.2 Observations, for a detailed description of this process). Nonetheless, with these caveats in mind this technique was still deemed appropriate as the purpose of the unstructured observations was to generate new ideas for further investigation rather than generalizing any findings to a wider population.

Semi-structured interviews were chosen as this method is regularly used in qualitative and exploratory research and is appropriate when the aim is to explore and explain themes that have emerged during earlier data collection (Saunders, et al., 2012, p. 377). In a semi-structured interview, the researchers have a pre-defined list of themes or question to be answered, although the structure of the interview is flexible and may vary from interview to interview (Saunders et al., 2012, p. 374). This method allows the researchers to probe certain aspects that are revealed during the interview, which may increase the depth of the collected data (Saunders et al., 2012, p. 378). Interviews are also an appropriate method for gaining insights into the respondent’s attitudes and opinions as well as understanding how the respondent interprets a phenomenon or situation (Blumberg et al., 2011, p. 265). However, interviews are not without their own inherent limitations. As previously mentioned, respondent bias can be an issue when conducting interviews but there is also a risk of interviewer bias. This is when the behavior of the interviewer creates a biased response from the respondent (Saunders et al., 2012, p. 381). It may be due to the tone of the interviewer’s voice or choice of words or because the interviewer imposes their own beliefs and frame of reference on the respondent in their choice and wording of interview
questions (ibid.). To reduce the effect of respondent and interviewer bias it is important that the researchers reflect over the choice and phrasing of questions before the interview takes place (Saunders et., al, 2012, pp. 382-383). Combining interviews and observations enabled triangulation of the findings. An important research technique which is used to ensure that the collected data are “telling you what you think they are telling you” (Saunders et al., 2012, p. 179) and to limit the limitations of any single data collection method (Blumberg et al., 2011, p. 276).

3.4 Data collection Method

3.4.1 Interviews

All interviews were conducted by telephone. As there were some considerable distance between researchers and participants, this method allowed for more interviews to be collected than if the interviews were conducted face-to-face. However, there are some drawbacks of not being physically present in the interview setting. Partially, this is related to the establishment of trust between interviewer and participant, which can be more difficult in a telephone setting (Saunders et al., 2012, p. 404). Although, this is often more important in more sensitive interview situations when the participant might be reluctant to answer certain questions (ibid.). Another drawback with telephone interviews is that the researchers lose the ability to observe non-verbal communication (ibid.). Nonetheless, the additional information that could be collected outweighed the drawbacks of telephone-based interviews. In total, eleven interviews and one pilot interview were carried out (see Appendix 2 for a more detailed description of respondents). Interviews were conducted until data saturation was met and the amount of interviews was deemed appropriate for the scope of this study and sufficient in order to answer the research question (Saunders et al., 2012, p. 283). The interviews took between 14-27 minutes and were transcribed in full following the recommendations by Magnusson and Marecek (2015, pp. 73-74). The interviews were structured with the use of an interview guide, which allows for flexibility of the conversation but ensures that the interview does not stray too far from the topic (Blumberg et al., 2011, pp. 265-267) (see 3.7 Interview guide). To ensure that the wording, order and length of the interview guide were appropriate, pretests and a pilot interview were carried out according to the guidelines laid forth in Magnusson and Marecek (2015, pp. 70-71). Approval for the use of a tape-recorder was also sought from the respondents in the beginning of the interview, to ensure any privacy concerns of the respondents (Saunders et al., 2012, pp. 395-396).
3.4.2 Observations

The unstructured observations took place at Pinchos’ restaurant in Västerås on two different occasions. By request from the company both occasions took place on a weekday rather than on the weekend. An important aspect of the observational data collection method is which role the observers should take (Blumberg et al., 2011, p. 281). Firstly, there is the question of whether the researchers should disclose their identity or not. Revealing one’s identity might influence the participants to alter their normal behavior, however concealing one’s identity may entail some ethical dilemmas that need to be addressed (Saunders et al., 2012, pp. 343-345). For the purpose of this study concealment of the observers has been deemed ethically acceptable as individuals in a public setting would already be expected to presume that they might be observed by strangers (The British Psychological Society, 2010). Secondly, it is important to consider whether the observers should become members of the group that is studied or remain as passive observers. However, it could be argued that an observer is seldom a strict passive observer as the mere fact that the observer is there alters the observation setting, or the servicescape as it is called in this study (Blumberg et al., 2011, p. 281). In order to blend in with the background and limit the observers’ influence on the research setting, the observations were conducted while the observers were posing as fellow restaurant patrons.

The data from the observations was recorded through the use of an observation checklist which allowed for immediate note-taking. This is an important safeguard for reducing the threat to validity that selective memory and memory recall issues may pose (Blumberg et al., 2011, p. 282). For the same purpose, both observers collected data individually and compiled their individually recorded field notes before sharing any thoughts on the observed behavior (ibid.). The characteristics, behavior, interactions, and mood of the restaurant patrons as well as other contextual factors were recorded, which is in line with Blumberg et al. (2011, p. 282) who argue for the collection of rich full notes. This included among other, the gender, age, observed interactions with staff and the digital system, the purpose of the dining experience as well as whether it was the first time that the participants had visited the restaurant. However, as the participants were not informed of the observations, no discerning characteristic were recorded in order to ensure their privacy and anonymity.
3.5 Sampling

3.5.1 Studied case sampling

The choice of Pinchos as the studied case could most easily be described as a purposive critical or extreme case sampling, which is a non-probability sampling method (Saunders et al., 2012, pp. 287-289). These kinds of samples do have problems with generalizability and although extreme cases are often helpful in order to understand more typical cases (ibid.), one should not consider all aspects found in this study as immediately transferable to other cases. In order to answer the research question and its objectives the restaurant had to use a fully or at least partly technology-mediated solution for some part of their interactions. In the search for such a restaurant it became clear that the possible subjects were highly limited and that the tapas restaurant chain Pinchos was the only company in Sweden outside of the fast-food industry that met the requirements. Because of limited resources in the form of both time and financial means, venturing outside of the Swedish market was not possible. Further, the fast-food industry was not considered suitable since the focus in such a setting is on fast delivery rather than providing the customer with a whole service experience. Thereby the risk for a company operating in such an industry to neglect or underemphasize the interactions was believed too high. Pinchos also posed as a perfect case for the study since they use a digital interaction system for information exchange, order taking and payment for the service, meaning that a large part of the interactions normally taken on by a human is digitized. Pinchos was chosen because it was suitable for our research question and objectives which makes the sampling technique purposive (ibid.). However, since Pinchos is the only appropriate subject to be studied within the reach of this study's resources, the sampling technique also includes a level of convenience (Saunders et al., 2012, pp. 290-291). Interesting to note is that a number of restaurants have tried to implement similar systems as the one used by Pinchos but abandoned the strategy because it could not be made profitable. Considering this, Pinchos could be seen as a critical case or as an extreme case, important to study in order to explore how a digital interaction system can be used in an effective way (Saunders et al., 2012, pp. 288-289).
3.5.2 Sampling of observed subjects

The observations conducted in the study were made on two separate occasions, and used different sampling techniques. On the first occasion, a purposive sampling technique aimed at finding typical cases was adopted. This technique was chosen since typical cases, cases representative to the whole population, are good at giving an illustration of what a normal case looks like (Saunders et al., 2012, p. 289). The observers were seated at one place in the restaurant and observed individuals seated at the tables next to this one. The researchers had no idea beforehand who was going to be seated at the tables nearby, and thereby who was going to be observed. Moreover, the restaurant was not given any instructions about how to seat or which guests to seat at the surrounding tables. Thereby the selected cases for observation were randomized. However, the representativeness of the sample to the whole population, in our study all Pinchos visitors, could be questioned for a number of reasons. However, the aim of the typical case is not to be representative for the population but rather to provide an illustration of what is typical (ibid.).

Since many of the observed behaviors made on the first occasion were shared by many of the observed cases, the belief was that typical cases had been found. Thereby a solid ground for future analysis as well as ideas for which areas to look closer into in the interviews was believed to be found. This opened up for an alternation of the sampling technique before the second occasion into one looking for heterogeneous cases. In heterogeneous or maximum variation sampling the aim is to find cases showing different aspects that could be of importance to the overall understanding (Saunders et al., 2012 pp. 287-288). In line with the heterogeneous sampling technique, criteria for subjects were chosen before the second occasion and only subjects meeting one of the criteria were chosen (ibid.). These criteria included differentiation in age, whether the subjects had special needs that could be disadvantageous to the usage of the application and if the subjects were part of a company in which no one previously had been to Pinchos. The changing of the techniques between the occasions is believed to have given the study both an understanding of what a typical case looks like as well as different insights in aspects that affect the customers’ value-creation processes but might not appear as frequently, but that could still be interesting to explore further in subsequent interviews.
3.5.3 Sampling of interviewed subjects
The technique for selecting respondents for the interviews could best be described as purposive sampling, and more specifically a heterogeneous sampling technique (Saunders et al., 2012, p. 287). This method is suitable when studying small samples such as in case study research (ibid.). The lack of statistical representativeness characterizing this technique was not seen as a drawback, as the aim of this study is to explore a novel phenomenon and not draw generalizable conclusions to a broader population (Blumberg et al., 2011, pp. 193-194). Participants were chosen based on whether they were considered to be able to generate new and interesting insights for the researched topic. This is an advantage of the heterogeneous technique as it allows for sufficient variation in the collected data, which enables the researchers to explore the key themes of the phenomenon (ibid.). The potential participants were approached during two subsequent visits to the Pinchos restaurant. A drawback of only sampling patrons of Pinchos is that it might exclude the most skeptical individuals from being included in the study as they probably would not visit the restaurant. However, as the aim of the study is to explore how value is affected by the digital interaction system it is inherently important that respondents have had a firsthand experience of it, whereby only these individuals were regarded as part of the population.

3.6 Operationalization
To ensure that the research question could be analyzed, the theoretical constructs need to be transformed into feasible measures (Saunders et al., 2012, pp. 546-548). The central concepts of the study have been compiled into Table 1 and each concept is defined both theoretically as well as operationally. That is to say, how they are defined by previous scholars and how they are translated into the context of this study. This operational translation ensures that abstract theoretical constructs can be analyzed (Saunders et al., 2012, p. 44). The concepts in the table have laid the basis for the design of the interview guide (see Appendix 1).
<table>
<thead>
<tr>
<th>Concepts</th>
<th>Theoretical definition</th>
<th>Operationalized definition</th>
</tr>
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<tbody>
<tr>
<td><strong>Value-creation</strong></td>
<td>Aspects that positively influence value-creation. Including both experiential and utilitarian aspects (Holbrook &amp; Hirschman, 1982) which can be both lived, imaginary as well as anticipated (Helkkula et al., 2012).</td>
<td>Everything about the restaurant visit that is believed to create value for the customers or leave them with a positive experience.</td>
</tr>
<tr>
<td><strong>Value-destruction</strong></td>
<td>Aspects that negatively influence value-creation. Including both experiential and utilitarian aspects (Holbrook &amp; Hirschman, 1982; Plé &amp; Chumpitaz Cáceres, 2010; Echeverri &amp; Skålen, 2011).</td>
<td>Everything about the restaurant visit that is believed to destroy value for the customers or leave them with a negative experience.</td>
</tr>
<tr>
<td><strong>Direct Interaction</strong></td>
<td>Direct interaction refers to a process by which the customer’s and firm’s resources interact in an active and ongoing coordinated, dialogical way (Grönroos &amp; Voima, 2013).</td>
<td>The interaction between customers and the firm’s personnel, systems or other resources.</td>
</tr>
<tr>
<td><strong>Service Context</strong></td>
<td><strong>Micro:</strong> Actions and interactions between individuals and the micro-level institutions that guide them. <strong>Meso:</strong> The physical and social surrounding of the interaction and the meso-level institutions that affects them. <strong>Macro:</strong> the socio-historical context and societal institutions influencing interactions.</td>
<td><strong>Micro:</strong> Aspects concerning the individuals engaging in interactions in the restaurant. For example, age, gender and previous experiences. <strong>Meso:</strong> Aspects concerning the physical and social surrounding of the interaction in the restaurant. For example, the decor, atmosphere and institutions concerning how to perceive the restaurant servicescape and how to behave in it. <strong>Macro:</strong> Aspects concerning the socio-historical context and societal institutions influencing the interactions</td>
</tr>
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</table>
in the restaurant. For example, a belief that technological advancements could be beneficial for society.

<table>
<thead>
<tr>
<th>Resources</th>
<th>Operand resources:</th>
<th>Operant resources:</th>
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<tbody>
<tr>
<td>• Operand</td>
<td>Resources on which an operation or act is performed to produce and effect.</td>
<td>Physical resources for example the food and décor.</td>
</tr>
<tr>
<td>• Operant</td>
<td>Resources employed to act on operand resources (and/or other operant resources).</td>
<td>Human competences, knowledge and skills.</td>
</tr>
</tbody>
</table>

(Vargo & Lusch, 2004)

| Service            | The process of supporting customers in their value-creation (Grönroos, 2006). | Everything the restaurant does to support customers in their value-creation. For example, the creation of dishes. |

Table 1. Operationalization of theoretical concepts.

3.7 Interview guide

To aid in the collection of data, an interview guide was prepared prior to the interviews took place (see Appendix 1). The interview guide serves several purposes. It acts as a memory aid for the interviewers, so that all topics are covered in each interview (Magnusson & Marecek, 2015, p. 46). Preparing an interview guide is also helpful as it ensures that the researchers think through which questions should be asked and how they are worded to elicit a rich and full response and to avoid any misinterpretations (ibid.). This was performed to ensure that the data collected from the interviews are appropriately addressing the research question (Magnusson & Marecek, 2015, p. 51). The questions in the guide were worded carefully in order to be clear, easy to understand and open-ended as to allow the respondent to comprehend and enable them to elaborate on their experiences, memories and opinions (Magnusson & Marecek, 2015, pp. 46, 53).

In the design and selection of the interview questions it is important to avoid the assumption that participants think and perceive the world the same way as the researchers (Magnusson &
Therefore, questions were asked even though the answer may seem obvious to the researchers. The semi-structured nature of the interviews allowed the researchers to ask follow-up questions to further advance the understanding of participants’ responses and let participants fill out their answers and clarify their statements when needed (Magnusson & Marecek, 2015, pp. 55-56). The structure of the interview guide was divided into three parts. In the beginning, the aim was to introduce the researchers and the topic as well as to relax the participants with some warm-up questions (Magnusson & Marecek, 2015, p. 56). The second part was the main section of the interview. It was here that the bulk of the interview topics were discussed. In the end of the interview the respondents were given an opportunity to reflect over their responses and make additions to their answers (ibid.).

3.8 Data analysis

The method for data analysis draws on Miles and Huberman’s (1994) method for qualitative data analysis. In this method, the authors describe three simultaneous sub-processes: data reduction, data display as well as conclusion drawing and verification (Miles & Huberman, 1994, pp. 10-12).

In the data reduction stage, the collected data was coded as a way to focus on selected aspects. Miles and Huberman (1994, p. 56) describe coding as a way of conducting qualitative data analysis in which data, that has been transcribed or in some other way synthesized into text, is differentiated and clustered together by the usage of different codes. In line with Miles and Huberman’s (1994, p. 58) recommendations for how to create codes, the study started with a start list of codes based on previous theory and concepts as well as the observations. A disadvantage of this strategy, for an inductive study, could be that by dividing the data based on already existing categories the data is not given the opportunity to speak for itself. In other words, there is a chance that the pre-made codes influence the researchers to interpret the information based on their previously held assumptions rather than on the basis of what it is actually saying (Saunders et al., 2012, p. 569). This also increases the risk of missing aspects of interests that is available because they do not fit into the previously made categories (Miles & Huberman, 1994, p. 58). However, even though no clear hypotheses have been stated, the perspective this study is based on does provide areas or concepts which are believed to be of importance for the customers’
value-creation processes. Furthermore, since this study is grounded on this perspective it is logical to use this theory to direct the data analysis (Saunders et al., 2012, pp. 578-579). To give room for new aspects the start list for the analysis of the interview data contained a small number of wide categories based on these concepts, as well as the previously made observations. These were later revised and expanded during the process of analysis (Miles & Huberman, 1994, p. 58).

In order to strengthen the reliability of the analysis, a comparison of the differences between the two researchers in the coding of the collected data was made, in accordance with the technique laid forth by Perrault and Leigh (1989). Firstly, two interviews were coded together by the researchers in order to assure the appropriateness of the codes and revise and add codes when deemed necessary. After this, the codes were revised to focus and delineate them from each other and two more codes were added to capture aspects not covered by the initial codes. The two initial interviews were then recoded to fit the revised codes and encapsulate the new ones. After this, one more interview was coded separately by the researchers and compared to calculate the degree of inter-rater reliability. This interview had an inter-rater reliability measure of 83.5 %, which was considered high enough to allow the rest of the interviews to be coded separately. In order to assure that the high levels of agreement were kept during the whole coding process the last interview was also coded by both the researchers and compared. The inter-rater reliability level for the last coded interview was 85.8 %, which shows that the level of agreement was consistent throughout the whole process. This technique was performed in order to strengthen the reliability of the analysis and ensure that both researchers interpreted the data in the same way (ibid.).

The display of the data included compiling the data from the interviews into one structured narrative account. This was done to structure the data in a comprehensive way that would ease the analysis and drawing of conclusions (Saunders et al., 2012, pp. 564-565). The data is displayed chronologically, one of the most common types of structuring narrative accounts (Saunders et al., 2012, pp. 575-576). Even though the display is structured into one narrative account, the sometimes differing views among participants are included to allow for a richer understanding of the phenomenon (ibid.). Compiling data into one account has some reductive qualities (Miles & Huberman, 1994, p. 57). Some elements of the interviews are left out as they
were deemed to not contribute to an understanding of the research phenomenon. This way of displaying data is not in line with the two main families, matrices and networks, of how to display data presented by Miles and Huberman (1994). However, the narrative account was believed to hold the advantage of giving the reader an encompassing view of the whole restaurant visit, something that could have been lost if the data was presented in the form of matrices or networks. The narrative approach was also believed a good way of combining and displaying data from both the observations and the interviews.

The third part of Miles and Huberman's (1994) method for data analysis is conclusion drawing and verification. Since the study has deductive features in its establishment of a theoretical framework, this step partly included testing the adequacy of the model, what is referred to as pattern matching (Saunders et al., 2012, p. 579). However, the aim of the study is also to find out the effect of the substitution of human-to-human interactions with a digital system. Thereby aspects from the collected data have also been analyzed with regards to preexisting theory in order to understand both the theoretical and practical effects brought on by this change.

3.9 Summary of methodic choices

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Table 2. Summary of methodic choices
4. Empirical report

4.1 The greeting process

When entering the circus-themed tapas Pinchos, restaurant customers are greeted by service personnel dressed up in circus attire who show them to their table and provide them with a complimentary bag of popcorn. The Pinchos employee then proceeds to ask if the company of customers have been to the restaurant before and if they know how the system works. If the customers are new to the concept or unsure of how to proceed, the waiter will give them a brief introduction to the Pinchos application, how to download it, use it to place orders and pay their bills. The employee also shows the patrons where they will fetch drinks and food when their order is up. Many respondents from the conducted interviews have described a good first interaction with the company employee. Most thought that this initial introduction to the system, although short, was sufficient for their understanding of how things worked at Pinchos. However, a few stated that the information exchange on how the system worked was lacking. Examples of respondents that had been at the restaurant before but still had troubles operating the system and other individuals that did not receive an initial explanation because they had already started to interact with the system could be found. In these cases, the respondents stated that they would have liked a walkthrough anyway. Moreover, examples of long waiting times before the initial introduction was given were reported by some respondent, leaving the parties confused and unable to begin ordering their dinner.

At the time of the introduction, the waiter also helps customers in need with downloading and installing the application on their mobile phones. A few of the respondents have expressed problems with the download process. These have been related to the customers not possessing a smartphone with charged batteries, access to internet and in some cases a password to App Store or similar program for downloading applications. Although, Pinchos does provide portable power banks and Wi-Fi to their customers, respondents have given examples of how the restaurant were out of power banks and how they at first did not connect to the restaurants Wi-Fi when trying to download the app. These problems were described as stressful, especially when parts of the company arrived late, which delayed the ordering process. One respondent stated that she had
already downloaded the application prior to her first visit and described it as useful to be able to browse the menu at home before the visit and already at this point prepare their order.

4.2 The ordering process
After the introduction and downloading of the application, the customers are left alone to browse through the menu on their phones and place their orders. The restaurant staff however remains in the vicinity to answer questions and clean tables. Overall, the general consensus of the respondents was that the application was easy to use and navigate. Many also believed that the ordering of food became easier since they no longer had to wait for service personnel to take their orders. The respondents’ thoughts on the information exchange from the application diverged. Most of the respondents stated that the information exchange was good and adequate enough to understand the menu and how to place orders. Many described the images of the food as beneficial as they were informational and made it easier to know what they were ordering. On the other hand, respondents also reported some troubles in perceiving the size of the portions and one thought that some of the images were not congruent with the actual dishes. Some respondents argued that the application made it more fun to order, mainly because of the novelty of a digital menu but also because the application contained appealing images of every course. One respondent even described that the application had turned the meal into a fun game of who was finished with their order first, whose cell phone got the first notification and so forth. A few respondents also thought the application provided a fun conversation topic, one describing how they discussed it with some colleagues at work after their last visit. Furthermore, the navigation and layout of the application was described as convenient, making it easy to get an overview of what can be ordered and what the restaurant offers in terms of different types of meals such as vegetarian, meat and desserts. Respondents have also voiced that the application made it easy to keep track of what they had already ordered, thereby also making it easier to manage the costs. Some of the interviewees however expressed that for certain aspects, the application lacks in information. For instance, concerns have been voiced that information about ingredients and allergic information are non-existing or hard to access. Moreover, a deeper insight into how the meals have been prepared and recommendations of how to pair dishes together with drinks have also been pointed out as inferior. Another issue that respondents reported was that there was no way to customize their orders through the application. To make adjustments or ask questions
about the content of the food a waiter still had to be summoned as in a regular restaurant visit. Some respondents were part of a group in which only one phone was working, which made the ordering process a bit awkward as the phone had to be passed around the party.

When the customers place their order, it travels directly to the kitchen staff that starts the preparations of the dishes. When a dish or drink is ready, the customers receive a notification from the application that it is time to pick it up. The customers then walk to the bar or kitchen counter to pick up their order and bring it back to their table. Many respondents described that this added to a busy atmosphere, with more movement in the restaurant. However, one respondent described it as a less busy atmosphere even though she recognized that more people were actually moving through the restaurant and that this should have given her a feeling of a busy atmosphere. Some respondents found this increased movement appealing as they thought that it made the atmosphere more cozy and relaxed. One respondent noted that the atmosphere made it feel homely, like being in someone’s living room. However, for some respondents this system made the overall restaurant experience seem more like a fast-food service experience than a fine-dining experience. One respondent went so far as to say that there was no service at Pinchos, as everything is mostly handled by the customers themselves. Another respondent commented that as the orders are made via a cell phone it was more common to browse the cell phone during the meal, which the respondent did not regard positively. Others however expressed that they prior to the visit thought this would pose as a problem but that they did not experience it as such during the visit.

After the initial order had been fetched, some hungry customers ordered additional plates of main courses whilst others ordered in dessert or went on to pay for the visit. Respondents expressed that the digital application made it easier, in relation to a more traditional restaurant, to place additional orders. The respondents noted that the menu is readily available at the table at all times through the application, which made them less dependent on having to acquire the attention of a waiter to bring them a menu and take their orders. Moreover, respondents also found it faster to place additional orders through their phones than having to wait for a waiter. Furthermore, some respondents noted that ordering through the phone was less stressful as there was no waiter standing by the table waiting for them to finish selecting their order. Some respondents expressed
that the application enabled them to order and eat at their own pace, allowing some in the party to order in more main courses and others to order dessert. The use of the digital system brought forward divergences regarding whether there was more or less human contact with the restaurant personnel at Pinchos, in relation to other restaurants. Some respondents thought that the digital system freed up restaurant personnel from taking orders, giving them more time to roam around the restaurant, checking up on customers and answering their questions. Consequently, these people believed that there was more human interaction. Others thought that the digital system limited the amount of human interaction. This was regarded as positive by some but negative by others. The ones expressing that it was something positive believed that this left the party more time to interact with each other. A common notion brought up by the ones expressing that there was less human interaction was a lack of recommendations of what to order and how to pair food and drinks. A few respondents also expressed positive remarks regarding the service staff’s outfits and how it together with the interior design of the restaurant and the design of the Pinchos application contributed to a positive dining experience. Similarly, some respondents noted that the unique style of Pinchos distinguished it from other restaurants, which amounted to a memorable visit.

4.3 The payment process
When the dinner party is finished with their meal, they either pay by entering their credit card information into the application or summon a waiter to help them with the payment. By paying through the application, the customers collect bonus points, which can be exchanged for bonus meals in future visits. The bonus system was appreciated by the customers, and some respondents noted that they would be back to collect their bonus meal. However, some respondents had troubles paying through the application for various reasons, for example because of their credit cards’ security settings. In these cases, a waiter had to be summoned to collect the payment which made the guests lose out on the opportunity to collect their bonus points. Nonetheless, most respondents appreciated paying through the application as it was perceived as quicker and more convenient. One respondent noted that the digital system enabled the party to more easily split the bill between themselves, as each patron only pays what they have ordered on their own phone. When the payment has been processed, a waiter will come out to hand the customer their receipt and to say goodbye. One respondent noted that it was a bit unclear if they could leave
after they had paid through the application or if they needed to wait for the waiter to come by with their receipt.

Many respondents conveyed that they harbored skeptical feelings towards Pinchos before their visit. Some thought that there would be a substantial lack of human contact, others believed that they would have trouble using the application. However, these feelings subsided after they were introduced to the system and the restaurant concept. Most people adapted to the system quickly and respondents stated that the restaurant visit as a whole had not changed drastically, despite of the implementation of a new digital system. Respondents were mostly surprised that the level of human interaction was not nearly as reduced as they had initially believed. However, most respondents were still skeptical that Pinchos’ concept would be suitable in all restaurant settings, especially in fine-dining establishments. This was mostly due to beliefs that fine-dining restaurants should have a greater focus on personal interaction with waiters, both the social exchange as well as gaining access to the expertise of a seasoned waiter.
5. Analysis

5.1 Digitalization's effect on the value created

By studying the aspects affecting the customers’ value-creating processes it becomes clear that the experiences of the service transcend the mere utilitarian aspects of the consumption which is in line with Holbrook & Hirschman (1982) and the concept of value-in use discussed by service marketing authors such as Grönroos (2006) and Vargo and Lusch (2016) as well as many other scholars focusing on digitalization such as Saarijärvi et al. (2014), Breidbach, et al. (2014) and Schumann et al. (2012). Utilitarian aspects are however still present and is affecting value-creation positively, which also is pointed out by previously mentioned scholars. For instance, customers describe that it is easier to order and pay through the application and that it enables faster service. Moreover, experiential aspects have also been reported. An example of this is respondents expressing that the application was fun to use and a different experience from more traditional restaurant visits, which can be positively attributed to value-creation, in line with findings by Wang and Wu (2014). Negative aspects that are believed to lead to value-destruction have also been found, affirming the notions of Plé & Chumpitaz Cáceres (2010) and Echeverri & Skålen (2011) that there are both constructive as well as destructive phases of value-creation. For instance, customers had problems with the payment of the visit and with uncharged phones.

In line with Helkkula et al. (2012) the data also suggests that value-creation not only emerges at the time of the physical consumption, but that the process transcends this moment both spatially and temporally. Data suggesting that value could be created or destroyed before the restaurant visit are for instance customers stating that they looked forward to trying the restaurant, that they felt a degree of anxiousness towards the digital system before the restaurant visit and that it was beneficial that they were given the opportunity to look over the menu at home before the visit. That respondents have stated that they will carry the restaurant visit in mind longer than a normal restaurant visit and that their visit gave them a fun conversation topic for later occasions are indicators that part of the value-creation occurs after the service encounter.

By observing the restaurant visit, activities connected to technology that could be thought of as performed in the three different spheres of the model by Grönroos and Voima (2013) could be found, thereby strengthening the model's validity. In the producer-sphere such activities are
among others the creation of the application and the construction of the whole restaurant concept around it. Since a lot of the consumption takes place in the restaurant, a setting in which there are great opportunities for ongoing, coordinated and dialogical interaction, a lot of the consumption activities is believed to take place in the joint-sphere. This also implies that activities carried out in the consumer-sphere are left rather few. However, activities adding to the value-creation that transcends the time of the restaurant visit, such as talking about the digital system to friends and colleagues, could not be considered as affected by a dialogical process of direct interaction with the firm, and are thereby considered as activities of the consumer-sphere.

Regarding the service context, individual differences in the evaluation of the service experience could be found. People having vastly different experiences of basically the same service, such as a specific dish, is an example of this that could be found in the data from the interviews. This indicates that there are differences between individuals and that micro-level aspects and institutions are affecting value-creation in line with (Akaka & Vargo, 2015: Chandler & Vargo, 2011; Akaka et al., 2015). However, based on the data no clear indications of how or which micro-level aspects or institutions affect the value-creation could be found. The only common denominator that could be found was that respondents who expressed that they were not apt to handle, and/or used technology to a large extent described that they had some worries regarding the application before the restaurant visit. Kleijnen et al. (2007) as well as Mozeik et al. (2009) discuss that a perception that digital technology will be difficult to handle, will negatively influence value-creation. Although some respondents expressed similar thoughts, which could have led to value-destruction initially, no support was found for it affecting the value-creation negatively at the time of the restaurant visit. The fact that individuals differ in their experience of the same service implies that micro-level aspects and institutions exist. However, since only one common denominator could be found, the study cannot answer which and to what extent each of them affect the value-creation process.

Looking to the meso-level of the service context, aspects affecting the value-creation process could be found. Respondents have among other things stated that they liked the decor, outfits and atmosphere in the restaurant and that this contributed to the experience which is consistent with the writings of Bitner (1992) and Edwards and Gustafsson (2008). On the other hand,
respondents did not explicitly state that the digital system affected the servicescape. Nevertheless, many respondents voiced opinions that infer that they, at least subconsciously, consider the servicescape affected by the digitalization. For instance, respondents indicated that the atmosphere at Pinchos was more relaxed than at a traditional restaurant as an effect of the digital system. Others argued that Pinchos was not an up-scale establishment but something more akin to a fast-food restaurant. The latter opinion was mainly due to concerns over a lack of personal service at Pinchos. When expressing what they believed a fine-dining restaurant to be, many respondents talked about white linen tablecloths as well as personal and adroit service. This suggests that there are meso-level institutions which guide respondents’ view of service, in line with Akaka and Vargo (2015). When asked about whether they believed that the digital system would be appropriate in all types of restaurants, some expressed doubt that it would be fitting in a fine-dining servicescape. This implies that some respondents are influenced by meso-level institutions of what constitutes fine-dining, which in turn affect how they regard their experience at Pinchos and thus their value-creation. Digitalization might not overtly change the servicescape but the data suggests that it will have an implicit impact and affect how customers evaluate the service experience. Regarding macro-level institutions, the interviews did not reveal any differences between technology-friendly and technophobic customer as both groups expressed similar opinions about their experience at Pinchos. One respondent expressed opinions about the increase in mobile usage during the dinner. Abstaining from using a telephone during dinner could be considered a macro institution, as discussed by Akaka and Vargo (2015), something which is reinforced by other respondents expressing similar sentiments. A deviation from this accepted behavior might influence the attitude towards the digital system and in turn the evaluation of the service experience. However, only one of the respondents that expressed thoughts on the matter stated that this was actually a problem during the visit and that it contributed negatively to the experience.

5.2 Digitalization’s transformative effect on the service provided

In studying the dining experience of patrons at Pinchos, it becomes clear that the advent of technology has a transformative effect on the service provided and thereby the value-creation process. From the collected data, many positive aspects could be found in connection to the digital application. Generally, respondents regard the application as easy to use and navigate and
that it makes the process of ordering and paying quick and convenient. Some described the functionality of the application as superior in relation to a traditional paper menu. Ease-of-use as well as its performance are aspects previously discussed as positively linked to value-creation (Gummerus & Pihlström, 2011; Balaji & Roy, 2017; Wang & Wu, 2014). Other aspects positively contributing to value-creation are respondents’ feelings of fun and novelty discussed by Wang and Wu (2014). Such aspects could also be found in the data set. Some respondents mentioned the aesthetic appeal of the application, with its rich imagery and a fun language as entertaining content, which is discussed as an important aspect in facilitating consumers’ immersion into technology by Wang & Wu (2014). The authors further argue that customers’ immersion in the technology is important for the value created from its use (ibid.). Respondents gave indications of positive experience with the omnipresence of the application and that they did not have to wait for a waiter to come and take their orders. This is an aspect that can be related to Tétard and Collan (2009) and Bouwman et al. (2011) notions on designing technology to be effortless to get people to use the technology and something that is also believed to add to the value-creation.

A higher degree of continuous control over the consumption was also discussed by many respondents as they believed the application allowed them to more easily track what has been ordered as well as manage costs. Increased control being something which has been shown to be positively associated with value-creation (Harrison & Waite, 2015; Wang & Wu, 2014). According to Edwards and Gustafssons (2008), an increased level of control could also lead to customers feeling less crowded, which could be an explanation to why some have stated that they experienced the atmosphere in the restaurant as relaxed.

As the data shows, there are a lot of positive aspects emanating from the application that could not be found in a restaurant without this digital system. Thereby it is clear that digitalization can have positive effects on customers’ value-creation processes in a restaurant setting. However, it is not clear if these positive effects outweigh the negative effects attributable to the digitalization. These include for instance, that customers have experienced mundane problems, such as troubles with uncharged phones and connection to internet, but also more general problems with the change from human to digital interaction.
As Schumann et al. (2012) argue, there is substantial difference between human-to-human and technology-mediated services. This could be seen in the shifting roles of the consumer at Pinchos. To some extent, the digitalization blurs the boundaries between customer and employees, as discussed by Hagberg et al. (2016). By using the Pinchos application to browse the menu, place orders and being notified when the food is ready, the customers take on more responsibility of the co-production of the service, in line with Hilton and Hughes (2013), Harrison and Waite (2015) and Schumann et al. (2012). Harrison and White (2015) also suggest that placing more control over the co-production in the hands of the consumer can be value-creating for some but value-destructive for others. Support for both propositions could be found. For instance, some respondents were positive to being less reliant on service personnel while others noted a lack of informational exchange with waiters. Further, an aspect to consider is that even though the customer takes on a more active role in the co-production of the service, in the sense that they are carrying out more of the service activities previously carried out by the restaurant personnel, it might not automatically mean that they have more influence in the formation of the service. It is, for instance, reasonable to believe that their more active role would leave the customers with more control over their service experience. However, respondents expressed in the interviews that they have less opportunity to personalize and make special customizations to their orderings at Pinchos. This implies less co-production opportunities in the design and formation of the service experience, which in turn might affect value-creation negatively.

The reduced opportunities for influencing the formation of the service experience could be specific for Pinchos’ application since it lacks features allowing the customer to customize their orders. This could be a conscious choice of Pinchos as a way to increase their prosperity, as discussed by Plé and Chumpitaz Cáceres (2010). However, it could also be due to digital systems being less flexible than humans. The change in interaction from human-to-human to one between a human and a digital system could be understood by the usage of the concepts of operand and operant resources as brought forward by Vargo and Lusch (2004). In the traditional human interaction, the resources applied by both the customers and the company are operant. In other words, it is the skills and competences of the human individuals that interact. However, when
these actions are carried out through a digital application, the interaction becomes one between an operand resource supplied by the company (the application) and the customers’ operant resources. From a service-dominant-logic perspective the company would be considered as having used operant resources, competences and skills, in the creation of the operand resource (Vargo & Lusch, 2004). By doing so the company turns the application into a transmitter of service. The company then relies on the customers to use their operant resources to withdraw the service and create value. However, with this study’s perception of service it cannot be considered embedded within an operand resource in the way it is considered by the service-dominant-logic perspective. The application should, according to this study’s perspective, rather be seen as a resource in the process of providing service than as a transmitter of service in itself. Nevertheless, the concepts of operand and operant resources are good for describing the process of value-creation in the digital interaction and the actions carried out by each contributing actor. That is, the company employs operant resources in their creation of the operand resource, the customer then uses their operant resources to interact with it.

When analyzing the shift in resources applied by the company and how it affects the value-creation process it is interesting to consider the individual differences of the customers. As stated by service marketing scholars such as Grönroos and Voima (2013) and Vargo and Lusch (2004), the value created in the consumption is always dependent on the individual. These differences are considered as part of the micro-level of the service ecosystem as presented in writings of Chandler and Vargo (2011), Akaka et al. (2014) and Akaka and Vargo (2015). Buying into the notion that customers are different in how they experience service, it would be beneficial for the company to apply a resource that is adaptable to these differences. Vargo and Lusch (2004), however, argue that operand resources often are static rather than dynamic, whilst the opposite is believed to be true for operant resources. This suggests that an operand resource such as the application could be inferior to the operant resources applied by the waiter in meeting the different needs of the customers. One aspect strengthening such a notion has been found in the lack of opportunity for customization, as previously mentioned. On the other hand, none of the respondents expressed that they had any problems in operating or understanding how the digital system should be used, which would suggest that the application at least to a sufficient extent can meet the most essential needs different customers can have.
Service personnel at Pinchos are still roaming around the restaurant in order to clean tables and answer questions. This means that there always are opportunities for customers who are in need of more help to get it, and that Pinchos in line with Saarijärvi et al. (2014), Breidbach et al. (2014) and Schumann et al. (2012) does not substitute the human exchange but rather uses it as a way to enhance the service provided. In this way, the operant resources of the restaurant personnel could still be applied to help and interact with customers with these needs. In fact, the data shows that there are differences in whether customers consider the human interaction at Pinchos as less or more in relations to other restaurants. A common notion was that the human interaction was less at Pinchos. This is understandable since a lot of the traditional interactions are replaced by the digital system and is in line with Schumann et al., (2012) who argue that there is always some loss of personal contact when implementing digital intermediaries. These people pointed to a lack of personal service and information exchange, mostly in the form of recommendations of food pairings and information about the origin of ingredients and preparation of the dishes. However, there were also those who believed that the digital system freed up the personnel to interact with the customers in other ways, and that the amount of human interaction thereby was at the same, or even a higher, level than in other restaurants, which contradicts the previously mentioned notions of Schumann et al. (2012).
6. Concluding discussion

Regarding the analytical framework and perspective used in this study, the data suggests that they both are applicable and helpful in the comprehension of the value-creation process even when the interaction is in digital form. The data from the interviews suggests that consumption is a process of experiencing that includes both utilitarian and experiential aspects and transcends the physical moment of consumption both temporally and spatially. Moreover, the actions carried out by each actor in technology-mediated services could be regarded with the help of the sphere model as there are still actions of value-facilitation performed by the company alone, consumption activities performed by the customers alone and joint activities of interactions between them. Therefore, technology-mediated services could be believed as working largely in the same way as traditional services. Apart from an initial acclimatization period, the customers do not regard the visit at Pinchos as widely different from a traditional restaurant visit. Although a relatively major change has taken place in partially replacing human interaction, many of the activities of the value-creation process still unfold in the same way as before. Nonetheless, digitalization has had transformative effects on parts of the service provided and in extension the value created. Based on the data, it is clear that there are both positive and negative elements of the digital system at Pinchos that are not believed to be present in a restaurant without this kind of system. Some loss of human contact is evident in the ordering phase, which could affect the value-creation negatively. However, there are signs that there could be more human contact at other points during the restaurant visit and that this could have a positive influence on the service experience. Therefore, it is believed that digitalization adds both positive and negative aspects, but also that there could be both a loss and gain of positive aspects concerning the human interaction. How and to which extent these positive and negative aspects influence the customers is believed to be individual, meaning that the aggregated effect on their value-creation could end up either positive or negative based on the customer. This implies that there are micro-level aspects of the service context in play even though the data from the study has troubles in identifying which they are and how exactly they affect the customers. Meso-level aspects could be identified and meso-level institutions affecting the customers’ perceptions and evaluation of the provided service could, even if not stated explicitly, be assumed present. The macro-level aspects have been hard to identify based on the data, which have made it hard to establish if and to which extent they affect the value-creation. Nevertheless, nothing from the data contradicts that they are present and
affecting value in the way discussed by previous scholars. Lastly, the case of Pinchos, although it is unclear to which extent Pinchos manage to do this, suggests that the creation and use of an operand resource like their application could free up the firm’s operant resources to be used more efficiently and that the operand resource in itself could, if used correctly, bear with it its own value-adding aspects. Thereby, technology-mediated services could potentially be beneficial for firms to implement in order to support value-creation for their customers.

As discussed by Breidbach and Maglio (2016) information communication systems are now advanced enough to be able to substitute human interaction. Based on the data in this study, this claim could be asserted since the data suggests that the digital system could handle the interactions surrounding the order process to a sufficient level. However, the study also suggests that there are aspects concerning human interaction that would be lost if substituted entirely. If firms are not careful, this might lead to transaction starvation in the way discussed by Zuboff and Maxmin (2002) since the firm strips away the operant resources, which are believed to be the basis for a firm's competitive advantage (Vargo & Lusch, 2008), from the interaction. The data however shows that if the digital system is implemented with a holistic view in mind as discussed by Šeric et al. (2016) and used as an enhancement of the service experience as in the case of Pinchos and argued for by Saarijärvi et al. (2014), Breidbach et al. (2014) and Schumann et al. (2012), positive aspects of human interactions are not necessarily lost. That some respondents stated that they thought the human interaction increased would point to that the digital system, if used as a complement, could free up the operant resources to be employed elsewhere. This would then not lead to transaction starvation but rather to that operant resources could be used more efficiently to produce a better service experience. It seems to come down to the ability to maximize the value-adding aspects and minimize the value-destructive aspects for as many customers as possible, as well as making sure that as few positive aspects as possible are lost in the digitalization. This is not likely done by reducing the service staff, but rather by finding the activities in which their competences could best be put to use. Thus, the benefits from implementing a digital ordering system seems to be value-enhancing rather than cost-cutting and the idea of cost-cutting through digitalization may be a mirage, leading companies to fail with their digital investments.
Another interesting aspect to consider is that people’s thoughts on digitalization and how they evaluate services in which it is used might change over time. Although the study helps the understanding of what the customers’ value-creation processes look like today and to some extent what aspects are relevant and how they affect value-creation, these things are believed to be dynamic. As stated by Vargo et al. (2015), the institutions affecting how customers perceive and evaluate the service are also formed by the interactions taking place at the service encounter. Since the digitalization witnessed in the case of Pinchos is believed to change the interactions it is likely that the institutions that guide them are also in a process of change. How these institutions are changing is too early to tell and is something that needs to be studied over time. However, one can surmise that with a change to more digital interactions, customers’ evaluation of the digitalized service encounter will be revised. As digitalization becomes more prevalent in the service encounter, it is likely that customers will become more accustomed to its impact on the service experience and thereby may evaluate such aspects higher. This might mean that customers may become more susceptible to the positive elements of digitalization and accept its role in the service encounter in the future. This might also affect customers’ view of the role of service personnel and in what kind of restaurants digital ordering systems is suitable. As seen in the data from the interviews many of the respondents did not believe a digital system, such as the one used by Pinchos, to be suitable in the most high-class restaurants, which by many were described as including a high level of personal service. However, if the institutions guiding these perceptions change, this might not be the case in the future, opening up opportunities for more restaurants to reap the benefits of digitalization.

In conclusion, the findings of this study indicate that digitalization might best be implemented as a supplement to the service and not as an outright substitution for human-to-human interaction. In order for firms to reap the benefits of digitalization, they must identify in which activities it can be implemented to enhance the service experience and in which activities it can be used to free up the operant resources of the service personnel so they can be put to better use elsewhere in the service process. Moreover, as digitalization becomes more and more ubiquitous in service, the institutions that guide our perception of it will be pervious to change. As customers further familiarize themselves with digitalization they might start to feel more settled in at a digitalized service encounter.
7. Limitations and future research

This study contains some limitations that need to be addressed. Firstly, the study only consisted of one single case and can therefore not form the basis of generalizable statements. In order to verify the findings in this study, more research need to be conducted. The aim of the study was however never to generalize the findings but rather to explore an uncharted phenomenon. Another limitation of this study is that it did not reveal many aspects connected to macro institutions and how they affect value-creation. There were also some troubles in finding out to which extent the micro- and meso-level institutions influenced the evaluation of the service experience. This could be due to the design of the study, that not enough time was spent investigating the service context during the interviews or that the questions used were lacking as a means to study it. It could also be due to the elusiveness of the service context model and the intangibility of its components, something which has been discussed by other scholars such as Ballantyne, Frow, Varey and Payne (2011, p. 208) who state “fuzzy definitional problems associated with many of the terms used [in service-dominant-logic] remains”. Here future research solely focusing on the investigation and exploration of the service context could help in providing a richer understanding of how it affects value-creation as well as identifying which aspects are the most influential. Another interesting area for future research is to study in which activities digitalization can best be put to use to enhance the service experience and which human-to-human interactions could be substituted by a digital system. Moreover, this study found both positive and negative aspects concerning value-creation in technology-mediated services. Thus, an interesting area for future research would be to study the key drivers of value-creation and destruction, in relation to the digitalization of the restaurant experience similar to the study of Walter et al. (2010). Lastly, the study only included individuals who had visited Pinchos which might exclude the most critical opponents of digitalization. To give a more comprehensive representation on the evaluation of digitalization in service in general, these individuals need to be studied as well.
Acknowledgments

First of all, we would like to direct a thank you to our supervisor Peter Thilenius for your supervision and guidance over the course of this semester. We would also like to thank our seminar partners who contributed with valuable feedback on our paper. Lastly, we would like to thank each other for enduring each other’s company and for keeping our spirits up until the end.
Reference list


Appendix 1

Interview guide
Introductory conversation to get the respondent to relax and informed about the aim of the study.
- Inform of what we are studying
- Ask whether we can we record the interview
- Ask questions regarding subject’s background

Service experience (this is to understand what creates or destroys value for the customer)
Tell us about your experience at Pinchos

- Thoughts on the digital system (utilitarian & experiential)

How did you feel when you ordered and interacted with the app?
- Excitement
- Fun
- Anxious
- Annoyed/Irritated/Frustrated

Did you feel that you were trying something new and different when ordering through the digital system?

Did you feel that the digital system provided you with a different dining experience than a regular restaurant visit? How did it differ? Was this experience more or less enjoyable?

Do you believe that the experience will stay with you longer because of the digital system? If yes: Why do you believe it will stay with you longer?

Can you describe if you had any problems with the system? How did this make you feel?

Did you think about Pinchos’ use of a digital system prior to your visit?

Can you recall what you felt when you learned that the restaurant were using a digital system?

Can you recall your feelings before your visit to Pinchos?

Did you talk a lot about the system with others in your company? What did you talk about? Did you enjoy these conversations?

How do you assume that the others in your company felt about the digital system?

What do you think about the information that the digital system provides, such as meal choices and prices?
How do you regard the digital system’s functionality if you compare it with a regular menu?

Compared to a paper printed menu, do you think the digital system’s features would make it more convenient to order meals? Why?
Did you have any questions that the digital system could not answer? Can you explain these?

How did you regard the navigation of the system?

Did you perceive that the application gave you more or less control over the service experience? In what ways? How did this make you feel?

Did you make or wish to make any customizations to the dishes? Were you able to do this? How did you do this? What are your thought on this process?

Would you consider visiting Pinchos again? Why?

What would be your thoughts on visiting a similar restaurant in the future?

- **Thoughts on interactions**

Did you interact with any of the company personnel at any time during your visit? Can you tell us about this?

Did you feel that there were more or less interactions during your visit to Pinchos?

Did you experience the amount of human interaction from the company as more or less than at other restaurants? How did you feel about this?

How did you experience the atmosphere and surroundings in the restaurant? Do you believe that the technological system affected the atmosphere in the restaurant? How?

Did you feel more inclined to order again?

How did you find the information from staff on how to operate the system?

What do you think of the information exchange from the digital system? Could the application answer all the questions that you had on how to order? Can you give examples of a question that the application could not answer?

How did you perceive ordering and paying with the application?

**Previous experiences and institutions** (this is to understand how previous experiences and institutions concerning restaurants and technology affect value-creation)

- **Attitude towards/experiences of technology**

Do you feel anxiety towards using technology? At what times? With what kind of technology?

How would you say your attitude towards digitalization is in general?
Can you recall if you have had any experience with similar systems in the past? Can you tell us about this system/s?

How would you rate your ability to handle technology in general?

Are you usually someone that gets excited about new technology?

- **Attitudes towards/experiences of restaurants**

How do you consider the service at Pinchos in relation to other restaurants?

Did you feel that the service experience took more or less effort from your part than a regular restaurant visit? In what ways?

Do you believe that human interaction is important in a restaurant visit?

Do you often visit restaurants? In that case what kind of restaurants?

What kind of restaurant do you consider Pinchos as? A high or low class restaurant? Why do you consider it as such?

How would you feel about a similar system in all types of restaurants?

How would you feel if a majority of restaurants adopted this kind of system?

Are there any aspects of the restaurant visit that you think you would miss if more restaurants adopted a similar system? Can you explain further?

**Close the interview by thanking the respondent for their participation and ask if they have anything they would like to add.**
# Appendix 2

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Table 3. Description of respondents