

# Proposal of a new service system aimed to improve customer experience in telecommunications provider stores

The Vodafone case

**Bernardo da Silva Vieira Bagorro de Matos**

*Department of Engineering and Management, Instituto Superior Técnico, Universidade de Lisboa*

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## Abstract

In the last decades service companies shifted their focus from a strictly commercial and trading point of view to a more customer-centric one, investing in the customer experience along the several interaction points of their services. The consumers' profile is becoming increasingly singular in terms of preferences, which makes the standardization of service design and provision not an adequate option. This is due mainly to the technology evolution that provides more reliable, fast and interactive services, allowing the migration of any consumer to the competitors at the earliest sign of dissatisfaction.

This document provides an analysis on the present scenario of customer satisfaction with telecommunication companies, as well as the design of a new holistic and customer-centric service system, following the MINDS theory. This system integrates the customer perspective and qualitative judgments and suggests an alignment between front-end and back-end processes, allowing better management of customer interactions with the several available interfaces, improving customer experience.

Regarding the service concept, the data gathered and analysed from an online survey, a focus group, and interviews to store assistants, confirm that the main factors present in the value constellation of customers are: reduced waiting time; clear speech by assistants; feeling comfortable; and the interaction with technology. Also, there were used tools borrowed from Design Thinking and Decision Analysis, combining these fields with Service Design, contributing an innovative way for designing a service. The new proposed holistic and customer-centric service system is based on the factors mentioned, increasing customer participation along its journey.

**Keywords:** customer experience; customer journey; customer constellation value; service design; design science research; design thinking; value cocreation

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## 1 Introduction

The industrial paradigm is shifting towards holistic and customer-centric processes design, since the offering of products and services is now perceived as part of an experience, instead of just a mere commercial trade between an organization and the customer (Achrol & Kotler, 2011).

This document provides a framework on how to improve customer experience in telecommunications stores through a new service system, aimed to be implemented in Vodafone stores, the tenth most valuable telecom organization in the world (Haigh & Jagodzinski, 2019). The main goals of this paper are: to define the main factors that form customers value constellation; Compare customers' satisfaction between the main telecom enterprises on the Portuguese market; Identify pain and gain points of the current customer journey; Learn about the processes that take place both in front and back-end during customer journey; identify the key factors that influence perceived customer experience; Design a new service system aimed to improve customer experience.

Concerning the gathering of data, three main channels were used: the spreading of an online survey on social media platforms; a focus group with two customers from the four main telecommunications organizations in the Portuguese market (Vodafone, MEO, NOS and Nowo), where decision analysis tools were used; presentational interviews with seven Vodafone

store assistants from four different facilities, three located in Lisbon and one in Aveiro.

The methodology followed to design the proposed service is *Management and Interaction Design for Service* (MINDS) (Grenha Teixeira et al., 2017) due to its innovative and customer-centric character, and because its contribution has already been validated accordingly to design science research standards (Gregor & Hevner, 2013).

The remainder of this paper is structured as follows: Section 2 presents the problem to be studied; Section 3 contains a literature review; Section 4 details the research methodology used; Section 5 shows the data gathered. Section 6 presents the analyses performed; Section 7 concludes the paper with a reflection of the limitations of the proposed model, final remarks and suggestions for future work.

## 2 Problem

Vodafone has 211 stores in Portugal and 3.7 million clients, which results in 18% of the telecommunications Portuguese market share. The number of mobile accesses per year is increasing since 2010, and the last record from the last quarter of 2018, shows a value of 17,6 million (ANACOM, 2019a). This is justified by the possibility of selling multiple play services, that allows the consumer to buy packages of several services (mobile network, mobile data, TV) instead of buying them separately.

Although everyone uses telecom services, the experience perceived by customers is poor, attending to their evaluation of telecom companies. There are

two main indicators that access customer satisfaction with their telecom provider: Net Promoter Score (NPS), which is an evaluation of the customer's general satisfaction with its provider; Touchpoint Net Promoter Score (TNPS), which is an evaluation of customer's satisfaction with a specific channel of interaction with its supplier, like a physical retail facility or an online platform.

The scale of evaluation used to access satisfaction goes from 1 to 10, and the process is conducted by an external organization, independent from all telecom suppliers. Depending on the evaluation, the customer is classified as a detractor, if he evaluates his satisfaction between 1 and 6; neutral, for classifications of 7 and 8; promoter, for 9 and 10. NPS and TNPS are then calculated by subtracting the percentage of detractors to the one of promoters.

The entity responsible for this type of market research is Growth From Knowledge (GFK), an external organization that determines the values of NPS and TNPS across multiple channels for all telecom companies.

Figure 1 shows the evolution of NPS between January 2018 and March 2019, where the red line represents Vodafone, the grey one NOS, the blue one MEO and, the yellow for Nowo.

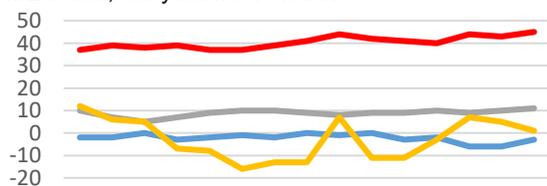


Figure 1 - Evolution of NPS

Figure 2 presents the TNPS evolution (red line) between April 2018 and June 2019 for Vodafone stores. This parameter is calculated with three entry variables, and their evolution is also depicted: sales (orange); service (grey); and repairs (yellow).



Figure 2 - Evolution of TNPS

Due to confidential matters, it was not possible to obtain the evolution of TNPS for MEO, NOS or Nowo. However, in section 5.1, it is possible to calculate an alternative one, based on the data gathered through the online survey, enabling a benchmarking of telecom companies in Portugal in terms of physical retail.

It is important to understand that both these indicators go from -100 to +100, and the best NPS (see Figure 1) is from Vodafone (+45), followed by NOS (+11), Nowo (1) and MEO (-3). However, due to the aforementioned factors, only the TNPS of Vodafone is known, and it is +70.

Considering these values, one can assume that there is room for improvement in customer experience, through the provision of customer-centric service systems, stimulating their loyalty and investing in long term relationships, ensuring competitive advantage.

### 3 Literature review

#### 3.1 Customer Experience

The term "customer experience" emerged in the 1980's decade contrasting with conventional knowledge by bringing more broad considerations on customer behavior, suggesting that factors neglected so far should receive some attention and research (Holbrook & Hirschman, 1982), such as the emotions role on customer behavior, the importance of customer recommendation to other buyers and the fact that the customer is not only rational, as he is also emotional (Addis & Holbrook, 2001).

However, only in the 1990's the concept of "experience" earned relevance, by perceiving it as an effective way of establishing competitive advantage (Pine & Gilmore, 1998) through co-creation of value both to the consumer and to the service provider (Ponsonby-McCabe & Boyle, 2006; Shaw & Ivens, 2005). This led to a shift in the vision of what is customer experience: a system that includes the consumer and its interactions with the various contextual elements along all stages of a service (LaSalle & Britton, 2003; Zomerdiijk & Voss, 2010).

It is noticeable the coherence of opinions among authors on the fact that all experiences must be personal, aiming for the involvement and connection with the customer at the rational, sensorial, cognitive, pragmatic, routine and relational components (Brakus, 2001; Fornerino, 2006; Gentile, Spiller, & Noci, 2007). Because it includes all the aforementioned components, one can perceive customer experience is a multidimensional concept (Grenha Teixeira et al., 2017; Zomerdiijk & Voss, 2010).

The experience is directly influenced by the set of tangible elements that the consumer interacts with along its journey. Therefore, the physical environment in which the experience takes place is one of the most important variables for a good experience. Both customers and actors perceive the environment around them differently, reacting in a cognitive, emotional and psychological way. These internal responses have a direct impact on interactions between customers and assistants, resulting in inclusive or rejection behaviors. The inclusive behaviors result in the desire of staying, exploring and interact with the service, and the rejection ones relate to ignoring or just abandoning the service, possibly motivated by factors of confusion or loss of control (Zomerdiijk & Voss, 2010).

#### 3.2 Service Design

##### 3.2.1 Conceptualization

Service Design is a field with its origins in Marketing, and since the 1970's decade it kept up with the industrial paradigms, which used to be more oriented to the mere selling of products, and now encompasses the relationship with the consumer (Lovelock & Gummesson, 2004; Vargo & Lusch, 2015).

The traditional dyadic relationship between customer and service supplier is moving towards a more dynamic and united one, which means that interactions are no longer from a client to a single company, but towards several ones (Beirão, Patrício, & P. Fisk, 2014). This results in the increase of investments in areas that relate to customer experience in search of competitive advantage (Shaw

& Ivens, 2005). This change in the relational standard occurs mainly due to the strong link between technology and innovation in services, enabling new configurations of resources, as well as the restructuring of the roles to be played by different entities, supporting evolution of services in all areas (Grenha Teixeira et al., 2017). The value of experience is now co-created by the network of actors involved, which cooperate and integrate resources, and technological interfaces, which allow the interaction between the consumer and the service (Ordanini & Parasuraman, 2011).

To design customer-centric services aimed to improve his experience, it is necessary to connect the strategic to the operational component at three different levels: service concept; service system; and service encounter (Patrício, Fisk, Falcão e Cunha, & Constantine, 2011).

#### 3.2.1.1 *Service Concept*

This is the first stage of service design, and can also be referred to as “value proposal” (Skålén, Gummerus, von Koskull, & Magnusson, 2015). The concept of a service can be considered as the benefit offered to the consumer, which goes beyond enjoying the service to include all benefits that belong to the customers’ value constellation (Patrício et al., 2011). The value constellation contemplates the advantages of a service offering from a client’s perspective, where the focus is on the elements that support the activities, and not in the supplier of the service (Ordanini & Parasuraman, 2011; Patrício et al., 2011).

The service concept is defined commonly by explorative creation, through Design Thinking tools like affinity diagrams (Beyer & Holtzblatt, 1997), user shadowing (Wixom & Yen, 2013), service safari (Stickdorn, Hormess, Lawrence, & Schneider, 2018), or by decision analysis tools, like causal mapping (Bryson, 2004).

#### 3.2.1.2 *Service System*

The service system level can be seen as all possible configurations of actors, technologies and other resources that interact between each other in a symbiotic way, creating mutual value (Maglio, Vargo, Caswell, & Spohrer, 2009). This way, it is necessary the definition of service interfaces, processes and roles to play by all entities as well as what technology to use (Patrício & Fisk, 2013).

Some models from a management perspective can be used to define the service system in order to specify how different factors are coordinated along the customer’s journey. One example of such models is service blueprinting, a tool introduced first by Shostack (1984) based on a flow chart that represents the client’s perspective establishing the separation between what he sees (front-end) from what he does not (back-end). Besides, it represents the various touchpoints of the service, allowing a visual enlightenment of when and where the customer interacts with it.

In a general way, service blueprint shows the activities performed by the customer and how they are supported (L. G. Shostack, 1987).

#### 3.2.1.3 *Service Encounter*

Service encounters are touchpoints of the service, which can be classified as points of interaction between the customer and the service supplier (Bitner, Booms, & Tetreault, 1990). The contact with the service can be presential or not, depending on the

technology that supports it. These interactions play out an important role in customer’s perception of a good experience. In customer-centric services these entities might be requested to, besides performing their primary tasks, connect with the client at an emotional level, causing sensations of comfort and security (Bitner et al., 1990; De Ruyter & Wetzels, 2000; Pine & Gilmore, 1999), leading the client to desire to use the service again (Zomerdijk & Voss, 2010).

Some tools can be used to describe these interactions, and possibly added to the service blueprint, especially methods borrowed from design thinking like sketches and wireframes (Garret, 2011).

### 3.2.2 **MINDS Method**

MINDS (Grenha Teixeira et al., 2017) is a methodology developed on design science research (DSR), a field derived from information systems and considered an approach for the advance of scientific community and innovative services (Beloglazov, Banerjee, Hartman, & Buyya, 2015; March & Smith, 1995; Ostrom, Parasuraman, Bowen, Patrício, & Voss, 2015).

The focus of DSR is the understanding of organizational phenomena and the creation and evaluation of artifacts to solve any problem for any organization (Hevner, March, Park, & Ram, 2004). These artifacts may emerge as theories, models, methods and innovative implementations of value to the areas related to design science (Lusch & Nambisan, 2015). Therefore, as service design enables the creation of services aimed to solve a specific problem, design science research allows the conceiving of methods for advancing the service design field, through an iterative process of conceptualization and validation (Grenha Teixeira et al., 2017).

MINDS conceptual framework encompasses all three levels of service design, and stands out for customer-centric service design by providing a clear representation of the value proposition (Kleinschmidt & Peters, 2017) and points out the integration of tools from both management and interactions perspectives (Grenha Teixeira et al., 2017).

## 4 **Research methodology**

To obtain more insightful and meaningful data for supporting the application of MINDS, a qualitative approach was adopted (Charmaz, 2006; Corbin & Strauss, 1990).

### 4.1 **Online Survey**

An online survey was distributed through social network platforms (Facebook, WhatsApp, and LinkedIn) enabling the collection of replies from geographically dispersed consumers, as well as to obtain distinct possible profiles of preferences for a richer value constellation definition. This approach follows snowball sampling (Goodman, 1961), which means it is directed to a finite universe. In this case, the sampling frame is the contacts database of the author, and the sample is the contacts that replied to the survey.

The data analysis of the answers collected permits the calculation of the NPS and TNPS for all major organizations in Portugal, enabling a comparison. Also, it provides some insights on how customers perform their journey (eg. alone or not), if they would

recommend their experience, and their social and demographic profile (age, gender, and district).

The main purpose of this survey is to define the customer's value constellation, by providing a list of 10 factors that are directly related to the influence on customer's pleasing perception: store environment; characteristic smell; organized products display; technology interactivity; assistant's speech; store design; music; existence of stools; temperature; and waiting time (Baker, Parasuraman, Grewal, & Voss, 2002; Bone & Ellen, 1999; Grewal, Roggeveen, Sisodia, & Nordfält, 2017; Mattila & Wirtz, 2001; Verhoef et al., 2009). The customers were asked to evaluate the importance of each of the aforementioned factors in their experience, using a horizontal and ordinal sliding scale from -5 ("Totally disagree") to +5 ("Totally agree"). The intention behind the choice of this scale was to give the value of 0 a true meaning of indifference, associated with the qualitative judgment of "Neither agree nor disagree". By analyzing the importance of evaluation of each factor, it was possible to calculate their respective median, which is the central value of a set of data distribution that, in this case, is the set of 242 answers given. The median is the value over which are half of the evaluations given by the customers, therefore, the higher the median, more important is the factor.

The calculation of the mean would not be appropriate since the considered scale is ordinal.

It is important to point out that, throughout this process, the confidentiality of customers, which was emphasized on the questionnaire distributed, remained intact.

#### 4.2 Focus Group

The focus group took place at Instituto Superior Técnico's facilities, composed by two customers each from Vodafone, NOS, MEO, and Nowo, who did not know each other to prevent influence on any judgments or considerations. This constructive approach, aimed for group learning through interaction of the members, establishes that both the problem and the solution belong to the customer, so the moderator should not participate in content, only in context (Schein, 1999).

The first step was the establishment of dialogue to reaffirm the context of the focus group. Customers were able to describe their experience, especially the points they disliked. Afterwards, it was possible to build, along with the moderator, individual casual maps for each consumer through an iterative process of questioning. The dialogue started with the question "What is most important for you in a telecommunications store?". After obtaining the answer, the moderator asked "Why?", putting the concept referred before in the perspective of a cause. Afterwards, the moderator would ask "How?", putting the concept in the role of a consequence. This process would continue until the respondent showed reluctance on answering or simply could not remember anything else.

After obtaining the individual causal maps, they were merged into a group map. This map was represented on an appropriate software tool (Decision Explorer - <https://banxia.com/dexplore/>), where a centrality analysis was performed to reach the most important concepts in customers' perspective, complementing the information obtained through the survey for the definition of the value constellation.

#### 4.3 Interviews with assistants

Personal interviews were later conducted with seven assistants from three Vodafone stores in Lisbon (Arena Shopping, Roma Avenue, Colombo) and one in Aveiro (Glicínias Plaza). The intention behind interviewing assistants from stores with different geographical locations is to gather more diverse data in terms of customer preferences, average daily visits, average waiting times, gain points and pain points from the customers' visit to the facility.

The dialogue was based on five questions: "What are customers unconsciously searching on their visit to the store?"; "What are the pain points and gain points from customer's journey?"; "What processes take place in the backstage?"; "What is the average influx to the store?"; "What are the average waiting times?". This information is crucial for the development of the current service blueprint on Vodafone stores in chapter 5, that will be compared to the proposed one.

### 5 Data analysis

#### 5.1 Online Survey

Regarding the online survey described in section 4.1, 242 customers answered it. Their distribution by telecom provider was 43% of Vodafone, 28% from MEO and NOS and, 2% from Nowo. These percentages are different from the ones revealed by ANACOM, the regulatory body of telecom in Portugal, where it is estimated that 18% of consumers belong to Vodafone, 41% from MEO, 37% from NOS and 4% from Nowo. (ANACOM, 2019a). The discrepancies between the reached values can be justified upon the sample collection type (snowball) and size. Given the limited range of access of the author's contact database on social media, only a small percentage of the total telecom users in Portugal was approached, and with a different regional distribution.

As described in section 4.1, the calculation of an NPS and TNPS was also part of the scope of this survey's distribution. After performing the process described in section 2, it was possible to reach an NPS for Vodafone (+9), Nowo (-25), NOS (-28) and MEO (-33). Similarly, values for TNPS were calculated, and the results obtained were +4 for Vodafone, -30 for NOS, -40 for MEO and -50 for Nowo. However, it is important to realize that Nowo should be excluded from analysis because of its statistical irrelevance, since only 4 customers out of 242 were from this provider. Excluding Nowo, the determined order of NPS matches the one shown in Figure 1, revealed by GFK. On what concerns the TNPS values calculated, they reveal the dissatisfaction of customers in telecom stores, since the best TNPS, +9 for Vodafone, is still far away from the best value in the scale, +100. This is also justified by the answers to the third and fifth questions from the online survey ("When you go to the store, do you feel like your problems are solved?" and "Would you recommend your customer experience?", respectively). About the third question, almost 20% of the respondents answered "No", and to the fifth, almost 24% answered the "No" as well.

According to Grenha Teixeira et al. (2017), one crucial step when designing a customer-centric service is to understand the way the client enjoys it, and whether alone or not. Regarding this, around 65% of customers answered they would go to the store alone. Therefore, the planning of the proposed service must aim for the increase of customer participation

throughout its journey, enhancing his relational component (Fornerino, 2006; Gentile et al., 2007) and improving his experience.

### 5.1.1 Customer Value Constellation

The main purpose of the online survey was to reach the customer’s value constellation leading to the definition of the service concept, over which the proposed system is built.

Attending to section 4.1, it was necessary to calculate the median and mode for each of the 10 listed factors, where their importance was evaluated using an ordinal scale. Table 1 shows these values for each listed factor.

Table 1 - Median and mode of each factor

Factor	Median	Mode
Store environment	4	5
Characteristic smell	0.5	0
Organized products display	4	5
Technology interactivity	3	5
Assistant’s speech	5	5
Store design	3	3
Music	2	0
Presence of stools	4	5
Temperature	4	5
Waiting time	5	5

From Table 1 it is possible to highlight the six most important factors (coloured in green) for customers, due to their higher median value: assistant’s speech; waiting time; store environment; organized product display; the presence of stools; and store temperature. These factors have the higher medians, thus they are the most important.

### 5.2 Focus Group

As described in section 4.2, a focus group took place to get more specific insights on customer experience from the perspective of eight clients, two from each of the major telecom companies in Portugal, Vodafone, MEO, NOS, and Nowo.

The main goal of this meeting was to define a group map, as a result of the fusion of eight individual causal maps built following the process described in section 4.2. Taking the general map as a starting point, it was possible to conduct a centrality analysis, using the *Central* command from the software Decision Explorer. The six most important factors accordingly to the involved customers are shown in Figure 3, as well as the number of connections they have directly or indirectly.

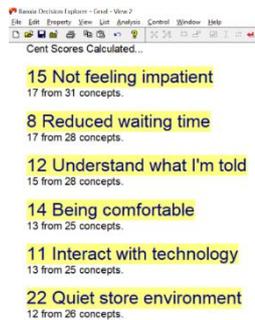


Figure 3 – Six main factors from the general map

By comparing the customers’ value constellation from the online survey to the one from the focus group it is possible to notice that “Assistant’s speech”, with a median of 5 (see Table 1) is not in Figure 3. However, one must keep in mind that this factor is directly related

to “Understand what I’m told”, the third most important concept from the general map. Concerning “Reduced waiting time”, “interact with technology” and “Quiet store environment”, they present medians of 5, 3 and 4, respectively, and are common to both value constellations.

One can also notice that “Store temperature” and “Presence of stools” are not explicitly in Figure 3, but they are in Table 1. However, from the analysis of the general map, the factor “Being comfortable” is directly and positively impacted by “Store temperature”, and indirectly and positively impacted by “Presence of stools”, as shown by the portion of the general map represented in Figure 4.

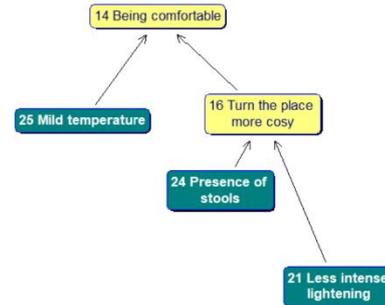


Figure 4 - Portion of the group map

Therefore, one can state there is coherence between the two value constellations defined by these tools.

### 5.3 Interviews with assistants

The interviews with assistants were based on the questions mentioned in section 4.3, and they aimed to complement the information gathered so far, with insights on what processes would take place both in the front end and back end of the service. The information provided would allow the development of the current service blueprint in Vodafone stores.

#### 5.3.1 “What are customers unconsciously searching on their visit to the store?”

The answers obtained were mainly based on reduced waiting times and interaction with technology, confirming the value constellation defined so far. However, the answers were a little bit different in the store of Avenida de Roma, where assistants emphasized the importance consumers give to the establishment of a connection that relates to their emotional and relational components (Fornerino, 2006; Gentile et al., 2007), since most of the customers belong to a more advanced age gap, as pertains to the store vicinity.

#### 5.3.2 “What are the pain points and gain points from customer’s journey?”

The resolution of the customer’s problem in one of the main factors that impact the customer experience and, as shown in section 5.1, around 20% of customers do not feel that happening, resulting in a major pain point. Other aspects to improve are identified in section 5.2, namely the reduced waiting time, lack of clearness in the assistant’s speech and confusing store environment. Regarding gain points, the most important one was the chance of interaction with the most recent products, like cellphones, Smart TVs, virtual reality platforms or Smart Watches, depending on the store.

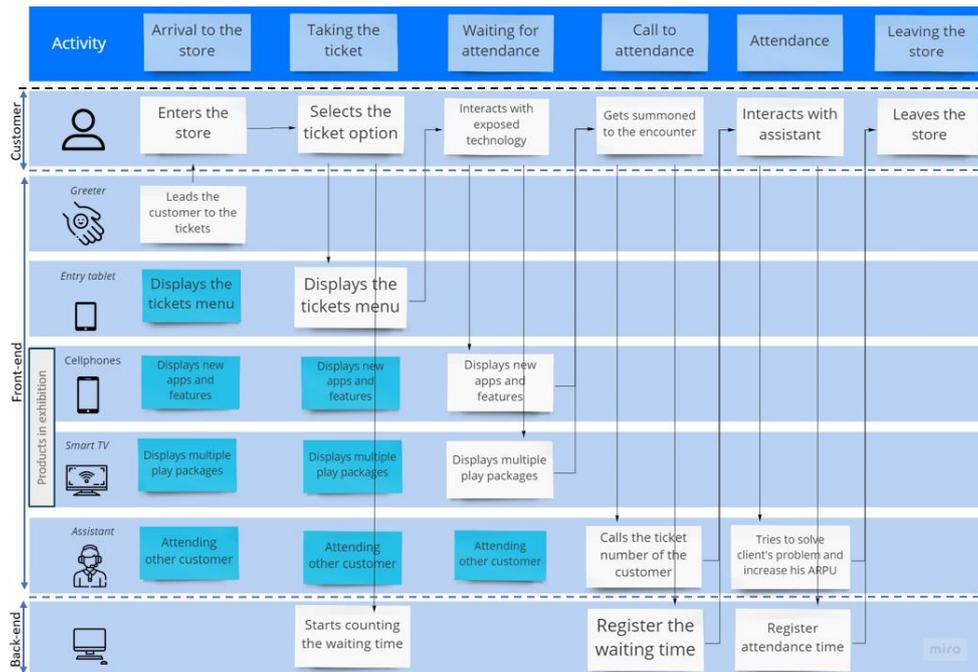


Figure 5 - Current customer journey at Vodafone stores.

### 5.3.3 “What processes take place in the backstage?”

This question contributes to the development of the current service blueprint of the customer at Vodafone stores. Regarding the processes in the backstage, none occurs in order to support the customer journey, accordingly to the assistants from Colombo, Arena Shopping and Glicínias Plaza stores, since the ones from Avenida de Roma did not provide an answer.

On the back end the only processes that occurred were related to count and register the waiting and service time, monitoring daily sales and the success of new marketing strategies.

Occasionally, during the service, an assistant might have to go to the back end for some help from the manager or to get a certain product, but that is not what happens most of the times.

### 5.3.4 “What is the average influx to the store?”

The daily average number of customers is uncertain, varying from one day to the other and leading assistants to answer this question with estimated values based on their more crowded days.

At Avenida de Roma and Arena Shopping stores, they estimate to get more than 200 customers, and at Colombo and Glicínias, they estimated more than 300 customers.

### 5.3.5 “What are the average waiting times?”

The Glicínias and Arena Shopping stores present a waiting average time of around 9 minutes. Regarding Colombo and Rome Avenue stores, no answers were provided, causing the need to do some behavioral

observation on customers. The average times were 8 minutes for the Colombo store and 3 for Avenida de Roma.

It is necessary to point out that the obtained values were influenced by the hour of the day, the day of the week and its location.

## 5.4 Current service blueprint

By crossing the gathered data with the behavioral observations performed (Wixom & Yen, 2013), it is possible to conceive the current service blueprint (L. G. Shostack, 1987), presented in Figure 5. It is important to understand that the presented blueprint is related to the standard customer journey, which means that is applicable to most of the customers. Particular situations like leaving the service before the last stage, asking for the complaint book, or other specific interfaces that only exist in few stores were not considered.

The current customer journey can be divided into six main activities, supported by the interfaces from the column on the left. Also, it is important to notice that the blue rectangles represent an activity that is not impacting directly the customer journey, but the white ones are.

On the “Arrival to the store”, the customer is confronted with the greeter, an assistant whose task is to lead the client to the tablet at the store entry to take a ticket. The rest of the interfaces are not having any direct influence in the customer experience.

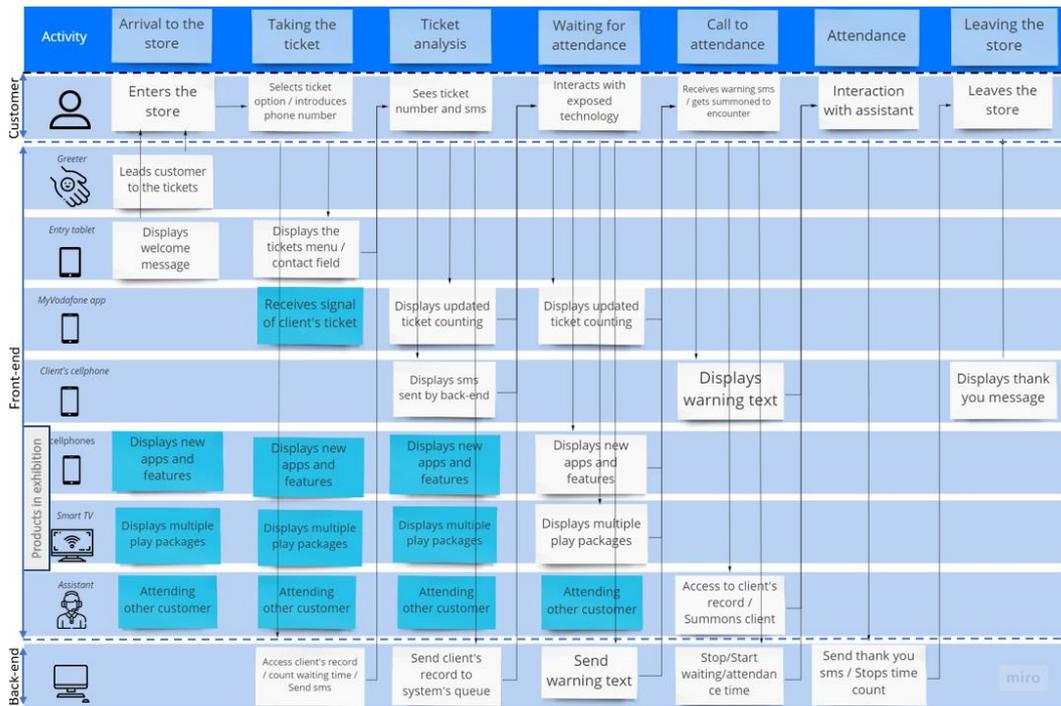


Figure 6 - Proposed service blueprint at Vodafone stores

On the activity “Taking the ticket”, the client sees the menu option displayed in the tablet, choosing an option and verifying his number in the queue. In this moment, the back-end interfaces start counting the waiting time.

After that, it is “Waiting for the service”, a period where the customer can interact with the exposed products and technology, especially cellphones (that display new features and applications) and the Smart TV (that displays the new multiple play packages).

On the activity “Call to attendance”, the customer gets his number called by the assistant, making him go to the designated encounter. In this moment, the back-end interfaces start counting the attendance time, stop counting the waiting time, and register it.

The activity “Attendance” is related to all the dialogue between the customer and the assistant, aimed to clarify the customer’s problems, as well as try to sell him new products or upgrade his services.

On “Leaving the store”, the attendance is over, and the customer leaves the facility. In this moment, the back-end interfaces stop counting the attendance time and register it.

## 5.5 Proposed service blueprint

The perception of quality of a service from the customer is usually different from the perception of the service provider (Dabholkar, 2015). The customer’s participation in different stages leads him to feel more in control and secure along the service. His participation is related to his enrolment in the conception and use of the service, resulting in a behavioral aspect related to his role in every service touchpoint. Therefore, the increase in customer’s participation leads to an improved experience and, as a result, stimulate his brand loyalty (Dabholkar, 2015; Lovelock & Gummesson, 2004).

The increase in his participation is also related to a reduction in perceiver waiting time. As Dabholkar (2015) and Thompson (1996) discuss, the real waiting time and the perceived one are distinct parameters:

the perceived waiting time depends from person to person, and can be directly influenced by the surrounding technological interfaces and contextual elements, store environment or even the number of customers in the waiting queue.

The interaction with technological interfaces is directly related to the increase in customer’s satisfaction, mainly due to the decrease in human error associated to the provision of the traditional service or, by other words, a service where an assistant conducts the whole process (Meuter, Ostrom, Roundtree, & Bitner, 2000). Following this argument and service concept defined in sections 5.1 and 5.2, the proposed system aims to increase customer’s participation along the service. Also, the technological interfaces considered represent an important way to decrease the perceived waiting time by the customer, and in establishing a more meaningful connection.

The proposed service blueprint to be adapted in Vodafone stores is shown in Figure 6.

### 5.5.1 Description of the proposed system

When arriving to the store, the customer is approached by the greeter, who leads him to the tablet located at the entry of the store to take his ticket. When the customer selects to take a ticket, another page on the tablet is displayed, for the user to insert his cellphone contact. This step is optional for the customer, but it will allow the back-end interfaces to send a text when his turn to be attended is two or less tickets away. If there is still a long queue, the message will be different, informing the user he will be contacted as soon as possible. These messages aim to tranquilize the customer, allowing him to go and perform other tasks in different locations or interact with the technology at the store without being worried.

Also, by obtaining the client’s phone number it is possible to display an updated counter of the queue numbers at MyVodafone mobile application, so that

the user keeps up more closely with his turn to be attended. According to the Customer Value Management area from Vodafone-Portugal, currently around 40% customers from Vodafone use this app, justifying the use of this channel. After the user performs his check in, the backstage systems fetch his client's sheet from the database and send the text message warning him if his turn is about to take place.

In the activity "Ticket analysis", the customer sees his ticket number and receives the text sent the back-end services, as well as a notification of real time counting from the app MyVodafone, in case he is logged on any wireless or mobile data internet. Regarding the backstage interfaces, they are responsible for sending the client's sheet to the system's queue, allowing the assistant to access it immediately in the activity "Attendance".

During the "Waiting for the service" the customer can interact with the technology available at the store, especially the cellphones and Smart TVs, in a more relaxed way, since he will be warned by the back end through a text message when his turn is closer. In this activity it is still possible to access the real time counting in MyVodafone.

In the activity "Arrival to attendance", the client receives a text message announcing that he will be attended in that moment, even though the assistant calls his ticket number. The purpose of sending a message and not a notification through MyVodafone allows the customer to receive it if he is offline, wherever he is.

Besides, sending an unnecessary notification could result in overflow of information from the customer's perspective, harming his experience. In this activity the back-end systems are responsible for stopping the count of waiting time and start the one of attendance time. It must be pointed out that, by this stage, the assistant already has the client's sheet displayed on his computer, avoiding the increase of attendance time and mitigating the risk of freezing the process by overload of the internal system, something that happens commonly.

Afterwards, "Attendance" takes place, where the priorities are the resolution of the client's problems and the clarity of the assistant's speech. The end of this activity stops the count of the attendance time, triggers the sending of a message thanking the customer by visiting the Vodafone facility, setting the creation of an emotional relation with him. This message is also sent by the back-end systems.

## 5.6 Proposed vs. Current service system

The proposed system aims for the increase of customer participation, introducing the application MyVodafone and the customer's cellphone as contextual elements in his customer journey, enhancing the interaction with technology, one of the main factors in customer's value constellation defined in sections 5.1.1 and 5.2. This also promotes sensations of control and security in the client, improving his experience, as Dabholkar (2015) suggests.

In the proposed service system (see Figure 6), the back-end interfaces play an active role in the interactions with the customer, contrasting with what actually happens in the current system. By generating a text message for assuring the client he will be warned when his turn is imminent (in the activity "Taking the ticket"), his waiting is attenuated. This

happens because it allows the customer to use his time with other tasks (not necessarily at the store) or interact with the technology exposed. It is necessary to point out that, depending on the client's ticket number, he will receive one of two messages: if he has more than two tickets until his turn, the message will state that he will receive another one when his turn is about to take place; otherwise, if he is just two or less tickets away to be attended, the message will be of warning, announcing he will be attended shortly.

Has one can confirm from sections 5.1.1, 5.2, and 5.3, another main factor of importance is the reduced waiting time. To do so, this system allows the back-end interfaces to fetch the client's record after he introduces his contact at the tablet in the entry of the store. In the activity "Call to attendance", the record that was in the system's queue is immediately displayed in the assistant's computer, reduced waiting time and preventing the database to freeze due to simultaneous accesses from other assistants.

The customer experience is also improved by the creation of an emotional relation that goes beyond the commercial trade (Pine & Gilmore, 1999; Zomerdijs & Voss, 2010). The proposed system adds two interactions aimed to create a more singularized connection, by introducing a welcome message at the entry tablet and by sending a thank you message by the time the customer ends the activity "Attendance".

## 6 Final remarks and future work

As any study based on a sample, it is necessary to be cautious in the generalization of obtained results to the whole population. The service system proposed in this paper was based on the qualitative judgments of 250 customers (242 from an online survey and 8 from a focus group), and there are 11,8 million active mobile accesses in Portugal (ANACOM, 2019b), causing the analyzed sample to represent only 0,002% of the total universe. Besides, the fact that the online survey sample was based on the contact database of the author, some bias is introduced in geographical and age gaps terms, resulting in a higher number of answers from Lisbon (44%), Santarém (11,25%) Aveiro (11%), and Setúbal (9,6%), and from customers under 25 years old (28%) and between 40 and 49 years old (25%). This results in some bias on the reached results, since customer preferences change from district to district and from one stripe gap to another. One obstacle found throughout this investigation what the providing of data by Vodafone and its competitors, due to confidentiality matters. The proposed system would be better justified with real data, based on the universal sample, instead of the used one.

Also, the proposed service system needs come validation from the improvement on customer experience improvement point of view. Due to deadline and logistic matters, it is not possible to show proven data that the suggested method is better, although one solution could be the experiment in a restrict group of stores allowing the comparison with the ones that use the current system.

Regarding future work MINDS can, and should, be applied to a broader sample for gathering qualitative judgments. Through organizations (like ANACOM) with bigger range of contacts, more profiles of clients could be defined, enabling the creation of more complete value constellations. Also, as Grenha

Teixeira et al. (2017) point out, a multi expertise team should be assembled, with professionals from marketing, psychology, management and engineering, allowing more diverse insights and opinions. Due to the scope of this paper, the team is composed by one element, the author.

This paper's main purpose is the suggestion of a customer-centric service system to be applied on physical retail. Therefore, the last level of service design (service encounter) was not mentioned, since only the service concept and service system belong to this document's scope.

The applied methodology has an innovative character, since it complemented decision analysis, design thinking and service design tools in the definition of the service concept. This combination is fruitful since it allows the inclusion of the customer, as well as its preferences and perspectives.

Finally, the value constellations defined in sections 5.1.1 and 5.2 include only the 6 most important factors, mainly justified by Baker et al. (2002), Verhoef et al., (2009) and the customers in the focus group. However, constellations with more aspects could be determined, since there is a vast bibliography on the topic.

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