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Evaluating and Enhancing On-Site Service Processes: A Path to Improved Customer Satisfaction

A Case Study at a Manufacturing Company

Master’s thesis in Quality and Operations Management

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SUMMARY
After-sales services play a crucial role in shaping perceived value for customers and influencing their relationship with the company. On-site services (hereafter OSS) are a part of after-sales service and are performed at the customer's location upon their request. OSS requires the physical presence of a service provider at the customer's site, enabling a more immediate and customized solution to their specific needs and challenges, often leading to a more personalized service experience. However, satisfying customers often demands higher standards from the service provider.

This thesis examines how an OSS process, with multiple actors and stakeholders, can be evaluated and improved to enhance customer satisfaction while maintaining a strong brand image. By integrating theories of value co-creation and service quality, it examines how multiple stakeholders contribute to the service delivery process. The study employed a mixed-methods approach involving surveys, interviews, and focus groups to gather insights from various actors within the service ecosystem. Key findings suggest that service quality, particularly in the dimensions of reliability, responsiveness, and empathy, critically influences customer satisfaction. The research introduces a novel conceptual framework that maps the interactions and value creation in OSS processes, providing a structured approach to understanding and improving customer experiences. This framework aids in pinpointing critical service elements that significantly impact customer perceptions and satisfaction levels. Managerial implications highlight the importance of strategic communication and effective service recovery to maintain a strong brand image and customer loyalty. Future research directions are proposed to further refine the service model and extend its applicability across different industrial contexts.
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Keywords: On-site service, service ecosystem, customer journey, customer touchpoint, outsourced touchpoints, brand image, co-creation, customer satisfaction

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Description of Terms and Roles

The Company - The case company that this study focus on.

Service agent - The staff that answers calls, could be either at the Company or supplier.

Supplier - The supplier with whom the Company has a contract to provide the OSS abroad.

Sub-supplier - The supplier's supplier (often one for each country) that manages some of the temporary solutions.

Process owner - An employee at the Company responsible for the OSS process (costs, agreements, guidelines etc.).

Insurance provider - An employee at the insurance company that the customer is using for their product.

CC Agent - An employee at the Company that works with customer service at the Company.

Salesperson - An employee at the Company with customer relations experience, with some responsibility of the OSS for the specific country.

Manager - An employee at the Company, working in a leadership position, with insights into the OSS process.

Temporary solutions - Include solutions such as replacement product.

Permanent solutions - Include solutions such as towing or repairing the product on site or at the workshop.

1 Introduction

This chapter introduces the thesis, including the background, theoretical framework, purpose, and research questions. Lastly, the delimitations are described.

1.1 Background

Grönroos (1994) discusses the shift from traditional scientific management, originally from the principles established by Adam Smith to service management, which became important in the post-industrial society. Further, Albrecht (1988, p. 20) presents a short definition of service management: "Service management is a total organizational approach that makes the quality of service, as perceived by the customer, the number one driving force for the operations of the business". A more recent definition, from Johnston et al (2012, p. 12), states that:

> "Service operations management is the term that is used to cover the activities, decisions, and responsibilities of operations managers in service organizations. It is concerned with providing services, and value, to customers or users, ensuring they get the right experiences and the desired outcomes. It involves understanding the needs of the customers, managing the service processes, ensuring the organization's objectives are met, while also paying attention to the continual improvement of the services."

Quality is a concept that, contrary to common belief (Grönroos, 1984), is not a variable on its own. Instead, it is a result of various resources and activities working together. Similarly, Crosby (1979) states that quality is an elusive and indistinct construct. He argues that it is often mistaken for imprecise adjectives like goodness, luxury, shininess, or weight. Further, Takeuchi and Quelch (1983) write that quality and its requirements are not easily articulated by consumers. In more recent research, Martin et al. (2020) discusses the various meanings of quality. First, they separate between focusing on a single actor or multiple interested parties. Secondly, they separate quality into two types: one based on set criteria and the other on criteria constructed by involved actors. Thus, quality can either be defined by clear, already set standards, or it can be shaped by the views and experiences of the people involved (Martin et al., 2020). Consequently, the four conceptual meanings of quality are quality-as-ecosystems-integration, quality-as-society-value, quality-as-customer-value, and quality-as-agreed-delivery. The fifth, quality-in-use comes from the interplay of the different perspectives.

Shifting the focus to the subjective dimensions of customer experiences, service quality emerges as a crucial component of overall quality. Parasuraman et al. (1985) characterized Service quality is inherently more abstract and elusive than product quality. Up until 1985, only a few studies had been conducted on service quality; however, three underlying themes were identified (Parasuraman et al., 1985). The first theme suggested that, in general, service quality is more challenging for customers to evaluate compared to the quality of goods. Secondly, service quality is established by comparing consumer expectations with the actual performance of the service. Lastly, assessments of quality are not solely based on the outcome of the service; they also involve evaluations of the service delivery process (Parasuraman et al., 1985). The second theme is agreed upon by several researchers, who state that customers tend to evaluate service quality by comparing their expectations of the service with the perceived service (Grönroos, 1994; Parasuraman et.al., 1990; Mbise & Tuninga, 2016).

To evaluate the service quality, one can utilize the method SERVQUAL developed by Parasuraman et al. (1988), which later evolved into the SERVPERF model. These models examine service quality in five dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). In recent years, research has been conducted to analyze the relationship between customer satisfaction and these dimensions. One paper focused on the automotive industry and evaluated the service quality in the maintenance and repair industry (Jain et al., 2020). Another paper by Fragoso and Espinoza (2017) evaluates the quality of the services provided by two large banks. Although the SERVQUAL method is commonly used for analyzing customer satisfaction, it has its critics and drawbacks. Van Dyke et al. (1997) argue that using the difference between separate measures for expected and experienced levels of service is problematic as it assumes that this subtraction accurately represents how people think. They argue that directly measuring one's perception of service quality is more valid and reliable. SERVPERF measures performance rather than the gap between expectations and actual perceptions (Jain & Gupta, 2004). While the SERVPERF scale is valuable for gauging overall service quality sentiments, caution is advised in using its data for detailed strategic decisions due to its broad metrics, which may lack the nuanced insights needed.

1.2 Purpose and Research Questions

This paper specifically investigates the after-sales services related to physical products. For physical products, after-sales service quality has an impact on customer satisfaction, subsequently influencing their behavioral intentions (Rigopoulou et al., 2008; Fazlzadeh et al., 2011). After-sales services play a crucial role in shaping the perceived value for the customer and, consequently, influencing the relationship between the company and its customers (Rigopoulou et al., 2008; Fazlzadeh et al., 2011). This implies that after-sales services contribute to the value-adding process of the overall offering (Rigopoulou et al., 2008), enabling firms to differentiate their offerings and strengthen customer relationships in both the short and long term (Fazlzadeh et al., 2011). On the other hand, bad experiences with the quality of the service provided can lead to decreased brand trust and dissatisfied customers, ultimately affecting word of mouth negatively (Jain et al., 2020). It is also supported by Lascu et al. (2021), which confirms that services connected to vehicle repair influence customer satisfaction. However, single mistakes that leave the customer unsatisfied do not necessarily have to impact their loyalty if the company addresses their complaints efficiently. In the context of service recovery theory, numerous studies have investigated and presented suggestions on how companies can regain the loyalty and trust of dissatisfied customers (Hart et al., 1990; Kau & Wan-Yiun Loh, 2006; Van Vaerenbergh & Orsingher, 2016). It can be observed that customers who have experienced successful service recovery express significantly higher trust and positive word-of-mouth compared to those who have not (Kau & Wan-Yiun Loh, 2006).

On-site services are a part of after-sales service and in this thesis, we define on-site services as a service performed at the customer's current location at their request and the focus is on physical products. On-site service requires the physical presence of a service provider at the customer's site, which enables a more immediate and customized solution to their specific needs and challenges, often leading to quicker problem resolution and a more personalized service experience. Nevertheless, satisfying customers often demand higher standards from the service provider to retain customers and potentially attract new ones. Two reasons for this relate to the characteristics of a service, namely heterogeneity and inseparability (Edgett & Parkinson, 1993); when performing the service at the customer's site, at their request, standardization and planning can be challenging. In these challenging conditions, the risk of errors increases, heightening the likelihood of dissatisfied customers. This underscores the significance of service recovery as a crucial aspect of OSS.

There are several examples of OSS offered by manufacturing companies, for example, General Electric, which offers maintenance, repair, upgrades, and parts replacement for their various industrial equipment and engines (General Electric Company, 2023). Other companies include Caterpillar Inc. which offers maintenance and repair for their heavy machinery (Caterpillar Inc., 2022), and Siemens AG, which offers repair and maintenance (Siemens AG, 2023). Another example involves automotive manufacturers, who often offer roadside assistance services to their customers (Allied Market Research, 2023; BMW, n.d; Tesla, n.d; Volkswagen, n.d; Volvo Cars, n.d; Toyota, n.d; Dacia, n.d). All these examples involve some type of OSS process. For some of these companies, the OSS involves a network of actors, including suppliers, sub-suppliers, and other stakeholders (Allied Market Research, 2023). Consequently, comprehending the customer journey through the service process while ensuring satisfaction can be challenging. There is currently no research addressing this topic. Therefore, there is a knowledge gap in understanding the entire customer journey and its impact on customer satisfaction in an OSS process.

To address this gap, our purpose is to examine how an on-site service (OSS) process, with multiple actors and stakeholders, can be evaluated and improved to enhance customer satisfaction while maintaining a strong brand image. The purpose will be addressed by a case study at a large manufacturer, hereafter called the Company.

To effectively evaluate and improve customer satisfaction, it is essential to identify the factors that significantly impact it. Accordingly, we pose the following research question:

1. What are the critical factors within the OSS process of manufacturers that significantly influence customer satisfaction and experience?

In addition, to identify which parts of the service process that affect customer satisfaction and where to focus potential improvement efforts, we formulate the following research question:

2. How can the steps shaping customer satisfaction in a multi-actor OSS process be identified?

1.3 Delimitations

The study specifically focuses on OSS taking place across Europe (abroad in the perspective of the customer), emphasizing the perspective of Nordic customers. This approach provides insights into managing service operations across diverse markets. However, potential variations in customer preferences across different markets impose constraints on generalization, even though we cover some cultural differences.

The research is confined to services connected to physical products. This focus allows for a more in-depth analysis of the unique challenges and opportunities within this sector, which may not be directly transferable to other industries.

The study uses a snapshot approach, analyzing data available from April 19, 2022, onwards. This date was chosen based on the availability of data in the company's internal systems. The temporal delimitation provides a contemporary overview of the service processes and customer interactions but does not account for historical trends or future predictions.

While the study aims to define, analyze and improve the service process, it does not include the actual implementation of these potential improvements. The focus remains on theoretical propositions and analysis, with practical application and execution being outside the scope of this research.

2 Theoretical Framework

The study's purpose of *examining how an on-site service (OSS) process, with multiple actors and stakeholders, can be evaluated and improved to enhance customer satisfaction while maintaining a strong brand image* is closely related to theory regarding value creation and customer satisfaction. To fulfill this purpose, value co-creation and its different dimensions as well as the different aspects of customer satisfaction are synthesized to form a conceptual framework that will guide the analysis of the empirical findings towards an increased understanding of customer satisfaction for OSS.

2.1 Value Co-Creation

Value creation is not objectively and statically defined, however from a service dominant (SD) logic perspective, co-creation is a common term (Grönroos & Voima, 2013). In other words, value is created in a process that includes actions both by the service provider and the customer (and sometimes other actors as well). This marks a transition from a product- and firm-centric perspective, where value is perceived as created solely by the provider, to one where value is co-created through personalized consumer experiences. Consumers are now seen as active participants in the value creation process rather than passive recipients at the point of exchange (Prahalad & Ramaswamy, 2004). The whole process could be referred to as value co-creation, which is elaborated by Grönroos and Voima (2013) through the presentation of three distinct spheres: the provider sphere, the joint sphere, and the customer sphere.

In the provider sphere, firms create potential value through activities such as design, development, manufacturing, and delivery, essentially acting as facilitators of customer value creation. The joint sphere is where the interaction between the firm and the customer takes place, allowing for direct value co-creation through collaboration and dialogue. This sphere is crucial for the mutual generation of real value (Grönroos & Voima, 2013), since companies and customers both are value-proposing actors who add value through their resources and participation in the process (Tueanrat et al., 2021). Finally, value in the customer sphere is independently created by the customer through the use of products or services, without direct interaction with the provider (Grönroos & Voima, 2013). In general, co-creation implies that companies offer service interfaces with communicational and interactional touchpoints, while customers apply their skills and knowledge to engage in service encounters, co-create value, and personalize their experience (Tueanrat et al., 2021).

The sphere where customers and service providers collaborate is usually much larger for services compared to products. However, the size of this collaborative area varies based on the type of service and how it is delivered (Grönroos & Voima, 2013). A bigger joint sphere increases the potential for joint value creation, which could be especially important in the early stages, in shaping the value (Grönroos & Voima, 2013). Ultimately, the roles of the company and the customer merge to form a unique co-creation experience, often described as an "experience of one" (Prahalad & Ramaswamy, 2004). The customer is an active stakeholder in defining the interaction, and the total co-creation experience often leads to personal value for the customer (Prahalad & Ramaswamy, 2004). Through a dialogue-driven process of direct interactions and by expanding the collaborative space, the provider can influence the customer's value creation process as a partner in creating value (Grönroos & Voima, 2013).

The importance of the joint sphere for service outcome is highlighted by Dong et. al. (2015), who show that higher customer participation (CP) generally enhances service outcomes and customer satisfaction. However, this is not always the case. The impact of CP will differ depending on the so-called CP readiness, which means how involved the customer is prepared to be in the service production and delivery (Dong et al., 2015). CP has a stronger impact on service quality and satisfaction for customers with high CP readiness compared to those with low. In simple terms, when customers are well-prepared and motivated, getting them involved generally leads to better service outcomes. This goes well in hand with Prahalad & Ramaswamy (2004), saying that customers are generally becoming more informed, empowered, and connected, and often seek to use their influence in different business systems. However, for customers who are less prepared, the impact of getting them involved is not as strong (Dong et al., 2015). It might still have some positive effect, or it might not make much of a difference, or in some cases, it could even have a negative effect on their satisfaction with the service.

As stated in the beginning of the section, the co-creation perspective could also consider more stakeholders that contribute to customer experience in the value chain (Grönroos & Voima, 2013; Tueanrat et al., 2021), meaning that co-creation emerges from the collaborative process and interrelationship among members in a service ecosystem (Tueanrat et al., 2021).

2.1.1 Service Ecosystem

To get a view of the service ecosystem, which is described as a dynamic network where continuous interactions among various actors (consumers, companies, and other stakeholders) facilitate mutual service provision and value co-creation (Chandler & Vargo, 2011), it is important to understand the organization's touchpoints with its stakeholders. By doing that, the organization can offer a more effective mechanism to identify crucial points and then organize different stakeholders' competencies toward the development of relevant services (Viglia et al., 2023).

Service ecosystem management generally requires an understanding and coordination of each involved stakeholder and the different touchpoints within the customer journey, meaning all the different parts that the customer comes in contact with during the service process (Lemon & Verhoef, 2016), to effectively satisfy the customers and create value (Tax et al., 2013). This means that the organization needs to proactively decide, select, delegate, and allocate tasks, which are, then, communicated to its compliant stakeholders (Viglia et al., 2023). The stakeholders could be bound by formal agreements for the service, and at the same time participate in the activity because of their own interest (Viglia et al., 2023).

Regarding stakeholders bound by formal agreements, Kranzbühler et al. (2019) explores the strategic use of branded outsourcing to manage customer touchpoints that are typically perceived negatively. They discuss how outsourcing can reduce the negative impact of these touchpoints on brand evaluations by allowing firms to dissociate from failures and attribute issues to the third-party service provider instead of the focal brand. This is a way of using the service network to optimize co-creation and manage the impact of service failures, which is emphasized by Tax et al (2013). Using this approach enables companies to focus on their core competencies, leaving less critical or more problematic services to be handled more efficiently by third parties (Kranzbühler et al., 2019).

However, outsourcing is not without disadvantages. There is always a risk that if the outsourced service fails to meet customer expectations, it could still negatively impact the focal brand, especially if the third party is strongly associated with it (Kranzbühler et al., 2019). Outsourcing can also lead to a loss of control over the customer experience, particularly if the service is crucial to the customer journey. Additionally, managing relationships with third-party providers adds complexity to operations (Tax et al., 2013; Kranzbühler et al., 2019), particularly in maintaining consistent service quality (Kranzbühler et al., 2019).

Strategic partnerships between the focal brand and third-party service providers dynamically manage customer experiences, enabling companies to either associate or dissociate with certain aspects of the service as needed, according to Kranzbühler et al. (2019). Associating a strong third-party brand with outsourced services can enhance customer perceptions of the focal brand when the service delivered is neutral or positive, leveraging the strength of the partner brand to boost the focal brand's own value.

This approach to outsourcing affects customers in various ways. For instance, when services that are less satisfactory are outsourced and explicitly branded as such, customers tend to attribute any dissatisfaction to the third party rather than the focal brand, thus maintaining a more favorable view of the primary brand (Kranzbühler et al., 2019). The strategic use of branded outsourcing shapes customer expectations and perceptions by associating strong third-party brands with satisfying or neutral touchpoints, thereby enhancing positive customer perceptions. Conversely, using weaker or lesser-known brands for potentially dissatisfying services can help to mitigate negative associations. The quality of service, as experienced by the customer, also depends on the third-party provider's effectiveness and how well their service standards align with those of the focal brand.

Given these dynamics, the strategic decision to outsource certain customer touchpoints - particularly those identified as inherently dissatisfying - emerges as a practical approach to enhancing customer satisfaction and overall brand perception (Kranzbühler et al., 2019). However, this strategy requires careful consideration of which touchpoints to outsource, which third-party brands to partner with, and the degree of visibility to the customer regarding the outsourced parties. For example, it is important to decide whether the supplier represents themselves or the focal brand. Effective management of these elements is crucial to ensure that the outsourcing strategy aligns with customer expectations and enhances their overall perception of the brand (Kranzbühler et al., 2019).

2.1.2 Evolving Perspectives: From Goods-Dominant to Service- and Customer-Dominant Logics

Services differ from products in several different ways, especially from a business perspective. For businesses, Goods-Dominant (GD) logic has traditionally been the dominant view, focusing on describing services by their differences from goods and how this distinction can lead to various problems (Vargo & Lusch, 2008). One common model to describe these differences is the IHIP-characteristics, which was mentioned in 1985 by Parasuraman et al. and further developed by Edgett and Parkinson in 1993. IHIP stands for intangibility, heterogeneity, inseparability, and perishability, see Table 1.

Table 1. *Service characteristics, adapted from Gremyr et al. (2020) and Edgett and Parkinson (1993).*

Characteristic	**Description**
Inseparability	Services cannot be separated from their providers.
Heterogeneity	Quality of services depends on who provides them and when, where, and how.
Intangibility	Services cannot be seen, tasted, felt, heard, or smelled before purchase.
Perishability	Services cannot be stored for later sale or use.

In later years GD logic has come to be challenged by new ways of looking at services, namely Service-Dominant (SD). SD defines service as “the application of specialized competencies (operant resources - knowledge and skills), through deeds, processes, and performances for the benefit of another entity or the entity itself” (Vargo & Lusch, 2008, p. 26). Consequently, in SD logic, goods and services are not viewed as alternative product forms. Goods are considered tools or distribution mechanisms that facilitate the provision of service. Service therefore represents the most important aspect of the exchange process since it is what is always being exchanged (Vargo & Lusch, 2008). Goods, when utilized, function as aids to the service-provision process.

Further, Customer-Dominant (CD) logic presents a perspective that places the customer at the center, rather than prioritizing the service, the service provider/producer, the interaction, or the system (Heinonen et al., 2010). Consequently, it is not a subset of SD logic but rather a perspective of its own. This approach is different from traditional concepts of customer orientation. Rather than concentrating on what companies undertake to develop services that customers will prefer, the focus is on how customers engage with the service to achieve their own objectives (Heinonen et al., 2010). Heinonen and Strandvik (2015, p. 20) states that CD logic is about becoming “involved in customers’ lives, instead of figuring out how to involve customers in the firms’ business”. This means that instead of starting with the provider's processes and what they can offer, the CD logic involves examining and analyzing customers and developing profitable offerings for them (Heinonen & Strandvik, 2015).

One important aspect related to service management is how the customer itself affects the service offered by a company. The customer introduces variation when participating in service creation, which often makes standardization ineffective (Gremyr et al., 2020). To get a better understanding of this variation and other important factors, Prahalad and Ramaswamy (2004) describe that service management requires a deep understanding of consumer needs and preferences and that focus should be shifted towards facilitating rather than dictating consumer experiences. Then it is important to consider how to handle this variation that the customer adds to the process (Gremyr et al., 2020), for example some businesses can control when customers should present themselves while others cannot. When it is possible to control, companies can steer the demand for a service, while if the demand cannot be controlled, companies should try to understand the pattern of arrival (unplanned demand for the service). Generally, companies always have to balance between the degree of variation from the customer that the company could handle and the proportion of the work that could be standardized. One way to handle the variation and increase the value co-creation is by implementing technology that allows for increased transparency and real-time interactions between consumers and firms. This openness helps in building trust and enhancing the effectiveness of the co-creation process (Prahalad & Ramaswamy, 2004). To get an even better view of the variation, Frei (2006) describes that the customer induced variation can be divided into the following five types:

- Arrival variability, which concerns when the customers want the service.
- Request variability, which concerns how the customers want the service.
- Capability variability, which concerns to what degree the customers use the service.
- Effort variability, which concerns to what extent the customers are making efforts to use the service.
- Subjective preference, which concerns how the customers want to interact with the company.

2.1.3 Customer Perspective

Since the customer introduces a lot of variation into the service process, the customer perspective is a very important factor for services. As described by Johnston et al. (2012), the service outcomes are the results for the customer and their experience of the service process, meaning that the customer's view will impact the result. Johnston et al. (2012) summarizes key aspects of service outcomes and what it means for the customers, some of which are explained below:

- *Products*, which is the functional output of the service provided.
- *Benefits*, which is what makes the customer feel like they have gained something or benefited from the service provided. It is also the “products” provided, i.e., how well their requirements and needs have been met.
- *Emotions*, which are a result of a customer experiencing a service. There are several hundred emotions.

The customer experience is defined by the customer's direct and personal interpretation of their interaction and participation in the service process (Johnston et. al., 2012). An experience is uniquely perceived from an individual customer's perspective and is intrinsically personal, existing solely within the customer's mind. Therefore, no two individuals can share the exact same experience. Aspects of the customer experience include (Johnston et. al., 2012, p. 7):

- the degree of personal interaction
- the responsiveness of the service organization
- the flexibility of customer-facing staff
- customer intimacy
- the ease of access to service personnel or information systems

Since the outcome of the service heavily depends on customer experience and satisfaction, there are a lot of factors that need to be taken into consideration. As stated by Lin and Liang (2011, p. 361); “service environments not only affect customer emotion and behavior, but also customer perceptions such as satisfaction”. Service environments include both physical and social, where physical could for example be comfort such as temperature, lighting, and music and social includes for example the personal emotional delivery. All these factors have a big influence on customer satisfaction and service outcome, however according to Lin and Liang (2011) the physical environment seems to be more important than the social environment.

2.1.4 Customer Journey

From both the business and customer perspectives, it is evident that the outcome of services depends on the interaction among the provider, stakeholders, and customers, as well as customer expectations. This underscores the importance of understanding the process, its various steps, and interactions for achieving success. By studying customer experience and mapping the customer journey, the process can be improved accordingly. Lemon and Verhoef (2016) explain that customer experience is the customer’s journey with a firm during the purchase cycle across multiple touchpoints. They also describe the customer experience as a fluid and evolving journey. This journey begins with the pre-purchase phase, moves through the purchase phase, and continues into the post-purchase phase (See Figure 1). The journey is shaped by both past interactions, such as earlier purchases, and external influences. At various stages, customers encounter several touchpoints, with only a portion being managed by the company.

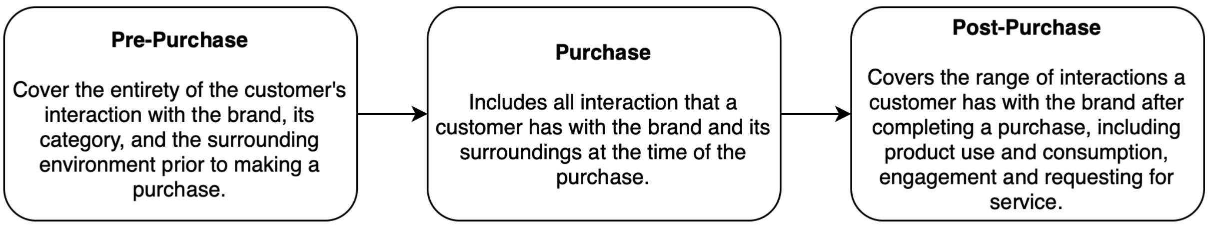

Figure 1*. Overview of the pre-purchase, purchase, and post-purchase phases of the customer journey (Lemon & Verhoef, 2016).*

The post-purchase phase is characterized by activities such as product use and consumption, engagement after the purchase, and requests for service. While, in theory, this phase could span from the moment of purchase to the end of the customer's life, in practice, it focuses on aspects of the customer's experience that are directly related to the brand or its product/service following the purchase (Lemon & Verhoef, 2016). Recent studies in management have expanded this concept to include the "loyalty loop" within the comprehensive customer decision journey, indicating that the post-purchase stage may present a moment that either fosters customer loyalty (through repurchase and ongoing engagement) or initiates the cycle again, with the customer revisiting the pre-purchase phase to explore other options.

2.1.4.1 Touchpoints

Touchpoints occur whenever a customer "touches" an organization and it can happen across multiple channels and at various points in time (Zomerdijk & Voss, 2010; Baxendale et al., 2015). Tueanrat et al. (2021) expands the definition and includes any interaction a customer has with a brand, whether directly or indirectly. Touchpoints are characterized as interactions between a customer and a company that can be either one-way, such as customers viewing commercials about products or services, or two-way, involving direct contact with company representatives or chat-bots (Herhausen et al., 2019). This includes customer-to-customer interactions where information or transactions are exchanged. Touchpoints can include cognitive, emotional, behavioral, sensorial, and social components (Aichner & Gruber, 2017). Generally, each single interaction between the customer and the company can be a determinant and lead to an overall positive or negative customer experience (Aichner & Gruber, 2017). A longer than expected waiting time, a single unfriendly employee, or a slowly loading website can lead to an unsatisfied customer, even though all the rest may have been perfect (Aichner & Gruber, 2017).

Lemon and Verhoef (2016) identify four categories of customer experience touchpoints: brand-owned, partner-owned, customer-owned, and social/external. Throughout the various stages of their journey, customers may engage with touchpoints from each of these categories. The significance or influence of each type of touchpoint can vary at different stages, depending on the characteristics of the product or service and the unique path of the customer's experience.

Lemon and Verhoef (2016) explain that brand-owned touchpoints are customer interactions during the experience that are designed and managed by the firm. These touchpoints are entirely within the company's control and encompass all forms of media owned by the brand (such as advertisements, official websites, and call centers) along with every element of the marketing mix directly controlled by the brand (this includes the product's features, packaging, services, pricing, accessibility, and sales personnel). Generally, touchpoints that evoke emotions play a crucial role in shaping how customers feel about a brand (Brakus et al., 2009) meaning that if these touchpoints are directly under the brand's control they should be handled carefully. This can include interactions with customer service, the tone and content of marketing communications, and overall atmosphere in branded environments (Brakus et al., 2009).

The partner-owned touchpoints represent moments of customer engagement within the experience that are collaboratively designed, administered, or influenced by both the firm and one or more of its partners (Lemon & Verhoef, 2016). Such partners may encompass marketing firms, partners in multichannel distribution, collaborators in multi-vendor loyalty programs, and partners in communication channels. Additionally, partners might have an impact on certain touchpoints that are primarily owned by the brand.

Lemon and Verhoef (2016) describe that the customer-owned touchpoints encompass actions taken by customers that contribute to their overall experience, yet are not influenced or controlled by the company, its partners, or any third parties. Touchpoints that the customer owns become especially significant and frequent after the purchase, when personal use and interaction with the product or service become focal points. The role has evolved to recognize customers as co-creators of value, whether independently or in collaboration with companies (Vargo & Lusch, 2004). This will mean that the customer's willingness to engage will impact these touchpoints (Verleye, 2015), not unlike the CP readiness (Dong et al., 2015) as described in section *2.1 Value Co-Creation*. Besides the readiness and motivation, the clarity of the customer's role will have a big impact on the overall experience of these touchpoints (Verleye, 2015), meaning that it is important to tailoring them to better meet customer needs and expectations (Payne et al., 2008)

Lemon and Verhoef (2016) explain the social/external touchpoints, which acknowledge the significant influence of external factors on the customer experience. At every stage of the journey, customers encounter external influences (such as other customers, peer opinions, independent sources of information, and the surrounding environment) that can shape their experience. Peer influence, whether sought after or unsolicited, can play a role in all stages of the customer journey. The presence or behavior of other customers, whether they are actively engaging beyond their expected role or merely by being in close proximity, can impact the decision-making process, particularly during the act of purchasing or in scenarios where the product or service is consumed immediately or shortly after purchase (for instance, in theaters, restaurants, or at sporting events).

It is important that all touchpoints of a service, whether brand-owned or not, communicate consistent value and support the foundation of the brand (Tueanrat et al., 2021). And since touchpoints can be outsourced, as mentioned in section *2.1.1 Service Ecosystem*, it is important that the whole customer experience is managed by the brand.

2.1.4.2 Customer Experience Management

By shifting focus from individual touchpoints to entire customer journeys, companies can gain a deeper understanding of their customers' experiences, leading to more targeted improvements and better overall performance (Maechler et al., 2016). This is because focusing solely on touchpoints may overlook the cumulative experience of the customer, which can significantly impact satisfaction and loyalty. Similarly, Payne et al. (2008) describe that effective management of touchpoints requires understanding their impact on the customer journey and integrating them strategically within the broader business processes. This integration ensures that touchpoints contribute positively to the overall service offered to customers.

To accomplish this, companies should have a more holistic approach to customer experience management by considering the customer's end-to-end journey. This approach involves understanding the customer's interactions with the company across all touchpoints and channels over time, rather than evaluating isolated interactions. Maechler et al. (2016) also highlight the necessity for a cross-functional approach to manage customer journeys. This involves collaboration across different departments and areas of a business to ensure that the customer experience is seamless and consistent across all points of interaction.

Hogan et al. (2005) describe another perspective on how to manage the customer experience and build a superior brand. While Maechler et al. (2016) describes the importance of the whole journey, Hogan et al. (2005) say that focusing investments on the most impactful customer touchpoints is essential for increasing profitable demand. This is not totally different from Maechler et al. (2016), who suggest prioritizing improvements that will have the most significant impact on customer satisfaction. However, Hogan et al. (2005) says that companies must assess which touchpoints significantly influence customer perceptions and loyalty, reallocating resources to those that are most effective, without mentioning the customer journey as a whole at all.

These touchpoints are critical because they shape perceptions of a brand through a combination of direct and indirect experiences (Hogan et al., 2005). As Hogan et al. (2005) note, each interaction, whether it enhances or diminishes the brand's perceived value, is integral to the overall customer experience. This experience is conveyed through every interaction across the customer journey, from the earliest impressions to after-sales service. Moreover, Hogan et al. (2005) advocate for the continuous monitoring of performance to maintain momentum, though they place a strong emphasis on the performance of essential touchpoints. They further explain that service relationships can often have a more lasting impact than the interactions with the physical product itself. For example, the touchpoints that involve human interaction, such as customer service encounters where employees can offer empathy, address issues, and deliver service beyond what's anticipated, are particularly likely to create a sense of delight. Similarly, Payne et al. (2008) describe that touchpoints significantly influence the overall customer experience. They are the moments where customer perceptions are shaped, making them critical for building brand reputation and customer loyalty.

When customer journey management is successfully implemented, it not only tracks these critical moments but also addresses the broader spectrum of the customer experience. This approach leads to several positive business outcomes, as noted by Maechler et al. (2016), including increased customer satisfaction, reduced service costs, and improved employee morale. By doing this companies will not only find symptoms but also identify and address the root causes of customer dissatisfaction (Brakus et al., 2009; Maechler et al., 2016), potentially leading to strengthening of the company brand, customer experience and enhancing overall service quality.

2.1.5 Service Quality and Managing Expectations

Service quality is usually evaluated by comparing the customer expectations of the service with the perceptions of the perceived service (Parasuraman et al. 1985; Grönroos, 1994; Parasuraman et al., 1990; Mbise & Tuninga, 2016). Unsurprisingly, operations aim to achieve quality by striving to meet customer expectations (Slack, 2013). This means that the customers' perception of quality, and consequently their satisfaction with the service, is influenced by their expectations of the service and their assessment of its performance (Slack, 2013). More specifically, Lenka et al. (2010) noted that customers' assessment of the service quality of a firm depends on the interaction with service personnel, technology interface, and physical evidence. Parasuraman et al. (1988) suggest a measurement scheme using SERVQUAL to assess the service quality on five dimensions, including reliability, responsiveness, assurance, empathy, and tangibility. These dimensions focus on both the human elements of service delivery and the tangible aspects of the firm.

According to Johnston and Kong (2011), service quality can also be defined from two perspectives: customer perceived quality and operational service quality. Customer perceived quality reflects the customer's assessment of the service quality, encompassing their experiences and the value they perceive in relation to their needs and expectations. Operational service quality represents the evaluation of service delivery against its defined specifications by the operations team. The service quality in these two perspectives can be evaluated with the five service quality dimensions: reliability, responsiveness, assurance, empathy, and tangibility (Parasuraman et al., 1988). Johnston and Kong (2011) note that the customer might not be satisfied even if the operation delivers to specification because their expectations will be influenced by the cost of the service, their prior use, word of mouth, brand, and advertising. Perceptions are personal and idiosyncratic, meaning they stem not only from the service process but also from individual experiences and gained benefits.

Additionally, Robledo (2001) pointed out that a customer's previous experiences, not only with the service provider but also with competitors and other companies, serve as the primary source influencing their expectations. While past encounters hold significant influence, other factors also contribute, particularly in the absence of prior interactions. Moreover, when a company encounters customers with excessively high expectations, it must address these expectations to bring them to a reasonable level. This necessitates a deep understanding of the origins of these expectations. To effectively manage them, the company must shape customer expectations, ensuring they are realistic and align with the company's capabilities. Various tools can facilitate this, including promotional campaigns featuring appropriate positioning statements, mission statements, corporate communication initiatives, service guarantees, consumer education programs, pricing strategies, and consistent delivery of exceptional service (Robledo, 2001). Managing expectations could be customer-specific, such as when realizing that a customer holds unrealistic expectations during initial interpersonal interactions (Coye, 2004). Further, employees' discretion, or their ability to make decisions independently, is likely to be utilized in such situations (Coye, 2004).

2.2 Customer Satisfaction

Grönroos (1984) posits that consumers assess service quality by considering both technical quality (how well the service meets customer expectations) and functional quality (the perception of service production and delivery) (Grönroos, 1984). Moreover, Parasuraman et al. (1988) presented the SERVQUAL model which emphasizes five dimensions of service quality (reliability, responsiveness, assurance, empathy, and tangibles. It views service quality as the discrepancy between customer service expectations and actual service performance perceptions (Parasuraman et al., 1990). Then there are some other complementary models, such as the gap model, which covers five different types of gaps that can lead to dissatisfied customers (Bergman & Klefsjö, 2010). Lastly, Maechler et al. (2016) emphasize the importance of evaluating processes by measuring customer satisfaction across the entire journey, rather than focusing solely on individual touchpoints. This holistic approach guides continuous improvement efforts and helps companies concentrate on areas that will most significantly impact customers.

2.2.1 Grönroos' Model

Grönroos (1984) introduces a service quality model that clarifies how perceived service quality arises from the gap between what customers expect and what they actually receive. This model emphasizes the significance of both the technical outcome of the service (what is delivered) and the process of delivery (how it is delivered), alongside the overarching corporate image. Grönroos argues that the process of delivery, or functional quality, often has a greater impact on service quality perception than the technical quality of the service outcome itself. To keep the difference between expected and perceived service as small as possible, companies should focus on the following (Grönroos, 1988, p. 43):

- "The promises about how the service will perform given by traditional marketing activities, and communicated by word-of-mouth, must not be unrealistic when compared to the service the customers eventually will perceive."
- "Managers have to understand how the technical quality and the functional quality of a service is influenced, and how these quality dimensions are perceived by the customers."

Later research concerning Grönroos's model has confirmed the model and suggested that technical quality, functional quality, and image should be measured to fully capture an individual's overall perception of service quality (Kang & James, 2004). Further, the study found that functional quality had a stronger influence on image and overall service quality compared to technical quality. It was also found in a case study that Grönroos's model's representation of service quality has higher appropriateness than the other with its limited concentration of functional quality (Kang & James, 2004).

Regarding the brand image, as outlined by Grönroos (1984), service companies cannot rely solely on their brand names or distributors for anonymity; instead, their direct interactions with customers often reveal the business's capabilities. Hence, the corporate image is critically important for service organizations. Consumer expectations are shaped by their perceptions of the company, which are in turn influenced by the quality of services provided - both technical and functional. Additionally, Lee et al. (2018) highlight that by investing in supplier development, companies can indirectly enhance their brand image and operational performance through improved supplier quality and reliability. This approach can be particularly effective in mitigating risks associated with poor supplier performance.

The overall perception of a company forms its corporate image, primarily constructed through the quality of service delivery witnessed by customers (Grönroos, 1984). While other elements might affect the company's image, they generally play a lesser role. These can include external influences such as cultural traditions, word-of-mouth, or internal strategies such as advertising, pricing, and other marketing activities.

To communicate their image effectively to new markets, service firms might use strategic marketing techniques like image advertising (Grönrros, 1984). However, these efforts must be accurate representations of the company's actual service quality. Misaligned marketing that promises more than what the services can deliver can lead to heightened customer expectations. If these expectations are not met, the discrepancy can result in customer dissatisfaction, potentially degrading the company's image.

Image also serves as a quality dimension, and a strong positive image might lead consumers to overlook minor service flaws, attributing them to one-off incidents rather than systemic problems (Grönroos, 1984). A strong image will also impact the customer expectations (Grönroos, 1984), meaning that the company needs to deliver accordingly. Conversely, a negative image could worsen customers' perceptions of service issues, further damaging the company's reputation (Grönroos, 1984). This dynamic underscore the importance of managing both the perception and reality of service quality to maintain a favorable corporate image.

2.2.2 SERVPERF and SERVQUAL

A model to assess service quality is the SERVPERF scale, which solely measures the performance instead of the difference between expectations and the customers actual perceptions (Jain & Gupta, 2004). The scale serves as a robust method for longitudinally tracking service quality perceptions across various segments of a service firm’s customer base (Cronin & Taylor, 1994). This tool enables managers to aggregate service quality scores, mapping them over time and against distinct consumer segments such as demographic groups or specific types of customers. Consequently, the SERVPERF scale proves invaluable for service managers aiming to gauge overall service quality sentiments. However, caution is advised when using SERVPERF-derived data for making granular strategic decisions, as its broad metrics may not always provide the detailed insights needed for more nuanced analysis.

Parasuraman et al. (1988), developed the SERVQUAL model, and the SERVPERF model is a modification (Parasuraman et al., 1985) that also assess service quality for customers on five dimensions of reliability, responsiveness, assurance, empathy, and tangibility. These dimensions are described below (Parasuraman et al., 1988):

- Reliability is the ability of employees to perform the promised service accurately.
- Responsiveness is the willingness of employees to provide prompt service.
- Assurance is the knowledge and courtesy of employees and their ability to instill trust and confidence in customers.
- Empathy is care and individualized attention given to customers.
- Tangibility includes physical evidence of the service.

Kvist and Klefsjö (2006) describe that “reliability” has been consistently shown to be the most important dimension in service quality. Kvist and Klefsjö (2006) also describe that the importance of various dimensions depends on the type of service being provided – for example, in one industry, tangibles might be more important than reliability.

Each question is used twice in the service quality measurement process, once to measure customer’s perception, and once to evaluate the customer’s perception of the performance of the service. Items are assessed using a point scale that spans from "Strongly Disagree" to "Strongly Agree" as outlined by Parasuraman et. al in 1988. The score, indicative of the perceived quality of service, is determined by the discrepancy between what customers expect and their actual perceptions.

2.2.3 The Gap Model

The Gap model is used to explain possible root causes of customer dissatisfaction by defining five potential gaps between customer’s expectations and perceptions of a service (Bergman & Klefsjö, 2010). The first gap outlines the deviation between the company's understanding of what customers expect and the actual expectations of the customers, as described by Bergman and Klefsjö (2010). It reflects a misinterpretation regarding what customers consider high quality compared to the company's perception of high quality (Bergman & Klefsjö, 2010). Understanding customer expectations is a crucial first step to being able to deliver a high-quality service. Some common factors creating this gap include a lack of marketing research, bad internal communication, and too many levels of management.

The second gap concerns difficulties with carrying the voice of the customers through the entire design process (Bergman & Klefsjö, 2010). Parasuraman et al. (1985) noted that problems with matching or exceeding expectations during the design process and the absence of total management commitment to service quality as two reasons for the second gap.

The third gap is related to the actual delivery of a service and the service specifications. Service quality often varies because of the difficulty in standardizing services, a situation largely impacted by the employees tasked with service delivery (Parasuraman et al., 1985). The inconsistency in service quality can be traced back to employees' performance, despite existing guidelines. This variability is attributed to several factors, including the employees’ exclusion from the service design process, insufficient teamwork, and a mismatch between the employee and their role.

The fourth gap can create dissatisfied customers and is about the difference between what a company promises its customers to deliver and what is actually delivered (Parasuraman et al., 1985). This gap often results from external communication that influences customers' expectations about a service and their perceptions of the service that has been provided. There is a risk of setting expectations too high because services are delivered by individuals, whose actions can vary (Bergman & Klefsjö, 2010). Another issue is that the marketing department may not fully grasp what is achievable, leading to confusion among employees about how to deliver the service because they are not sure what has been promised.

Gap five focuses on the disparity between what customers anticipate in terms of service quality and what they actually experience. Bergman and Klefsjö (2010) highlight this concept, while Parasuraman et al. (1985) suggest that a customer's evaluation of service effectiveness is influenced by their initial expectations within a specific situation. To achieve a high level of service quality, companies should try to exceed customers' expectations (Bergman & Klefsjö, 2010). In Table 2, a short explanation of the five gaps is presented:

Table 2. *The five gaps, adapted from Bergman & Klefsjö (2010).*

Gap number	Description
1	Gap between customer's expectations and the company's perception of those expectations.
2	Gap between the company's perceptions of customer expectations and the service quality specifications.
3	Gap between service quality specifications and service delivery.
4	Gap between service delivery and external communications to customers about service delivery.
5	Gap between customer's expectations and perceived service.

2.2.4 Service Recovery

With all service encounters comes the risk of different types of disturbances, it could for example be episodes of unavailability, unreasonable slow service or even core service failures (Kelley & Davis, 1994). They can vary in timing, severity and frequency which will all have an impact on how it is perceived by the customer. For example, a service failure for a new customer will have a bigger impact on its perception of the company than one with an established relationship (Kelley & Davis, 1994). Gremyr et al. (2020) highlight that customer dissatisfaction can serve as a learning opportunity for improvement by properly addressing mistakes and deficiencies. However, they note that customers often refrain from complaining due to the perceived time and effort involved, leading to dissatisfaction without formal complaints. This means that the complaints that do reach the firm typically concern issues customers perceive as crucial. These can, if not addressed, lead to poor service experience and can drive customers away and tarnish a brand's reputation through negative word-of-mouth (Tueanrat et al., 2021). However, the impact of such incidents varies among brands, depending on how effectively they handle the situation and the strength of their customer relationships. Here service recovery comes in, which involves finding and addressing these problematic areas within a customer's journey and implementing mechanisms to reverse any negative outcomes

(Tueanrat et al., 2021). Yet, many companies treat service failures as isolated events, overlooking their ongoing impact and hindering effective recovery efforts.

Tax and Brown (1998) propose a four-step process for effective service recovery. They believe that properly managing service recovery can turn dissatisfaction into satisfaction, potentially exceeding levels where the error has not occurred. The first step involves identifying the service failure, typically signaled by a customer complaint. This stage offers an opportunity to exceed low customer expectations, for instance, through established standards that set clear expectations. The second step focuses on resolving the customer's issue, where customers anticipate a fair resolution based on the outcome, policies, and the quality of interaction (Tax & Brown, 1998). Here Dong et al. (2008) describes that in a co-creation process, both the customer and the firm contribute to service recovery, shifting traditional roles where only the provider handles recovery. They describe multiple benefits of customer participation in service recovery, including increased role clarity, improved perception of value, and enhanced satisfaction with the service process. These benefits contribute to a higher likelihood of customers engaging in future co-creation efforts. This is due to improved abilities and confidence gained through participating in the recovery process, enhancing their readiness and competence for future interactions (Dong et al., 2008). The third step described by Tax and Brown (1998), involves communicating about and categorizing service failures, emphasizing the importance of converting informal feedback into a structured format for use in improvement efforts. The fourth and final step is to integrate this data to enhance overall service, meaning that information from various sources, such as market research or customer feedback, is consolidated to inform improvement initiatives. This is followed by data analysis, helping companies to prioritize different improvement actions more effectively (Tax and Brown, 1998). It is crucial for companies to continuously monitor negative experiences and address them promptly (Tueanrat et al., 2021), since a successful service recovery not only resolves the crisis but can also impress customers and foster brand loyalty.

2.3 Proposed Conceptual Framework

Based on the studied literature a conceptual framework has emerged, see Figure 2. By combining the two main areas of interest: value creation and customer satisfaction, the aim is to be able to map the service steps, determine the type of value sphere, and determine the impact on the five service quality dimensions, either technical or functional.

The framework has been developed based on the theoretical framework, such as Grönroos (1984), Grönroos and Voima (2013), and Parasuraman et al. (1988). More specifically, the service steps and value spheres customer sphere, joint sphere, and provider sphere (Grönroos & Voima, 2013) are visualized to the left vertically, while the five service quality dimensions (Parasuraman et al., 1988) are placed horizontally (see descriptions in *2.1.5 Service Quality*). The technical and functional quality (Grönroos, 1984), respectively represented by some of the service quality dimensions (see section *2.2.1 Grönroos' Model*). On the top, customer satisfaction is represented by the performance of technical and functional service quality in accordance with what was stated by Kang and James (2004) and Grönroos (1984).

Value creation in the OSS process		Customer Satisfaction				
		Technical Quality - Problem solving meets expectations (Grönroos, 1984)		Functional Quality - How the service provided is perceived by the customer (Grönroos, 1984)		
Step	Sphere/involved actors	Tangibility	Reliability	Responsiveness	Empathy	Assurance
1.						
2.						
…						

Figure 2. *The framework shows the different service steps, the involved actors in each step, and each step's impact on customer satisfaction through the dimensions from the technical quality. (Inspired by Grönroos, 1984; Grönroos & Voima, 2013; Parasuraman et al., 1988).*

3 Method

In this chapter, the research approach, research design, and data collection methods are presented. Furthermore, the explanation of the sampling and the data analysis is included, along with a discussion on research quality and ethical considerations.

3.1 Research Approach

This study was anchored in a case study methodology to provide an exploration of on-site service (OSS) processes within the manufacturing industry. The case study approach was particularly suited for this research due to its ability to provide a detailed analysis of complex phenomena (Yin, 2009). In our case, the topic being examined is the aspects of customer satisfaction and experience within a manufacturer's OSS process. The case approach allows for an intensive examination of the process. By focusing on a single, well-defined case, the study could yield detailed insights that might be lost in a broader survey or experimental study.

An abductive approach in research involves starting with an observed set of data, in this case the survey and interview data, and then theorizing the most likely explanation or underlying theory that best fits the data (Bryman & Bell, 2019). This way, existing theories and concepts can be used while finding new insights and perspectives directly from the data. Additionally, the study incorporated an inductive and iterative approach, where repeated cycles of data collection and analysis inform ongoing theory development (Patton, 2014). This iterative process was critical for refining hypotheses and explanations based on emerging patterns, for example when new perspectives from the interviews were considered, which enhanced the depth and relevance of the theoretical framework.

An abductive research method, complemented by inductive reasoning, was chosen for its suitability in this study, particularly in the context of a case study. The use of an abductive method allowed for a flexible approach to theory development, moving between theory and empirical observations (Bryman & Bell, 2019), while inductive reasoning supports an iterative refinement of these theories as more data is collected and analyzed (Patton, 2014). This combined method was particularly suitable for exploring the complex and dynamic nature of OSS processes, where pre-defined theories did not fully capture the nuances of the real-world practices. By adopting an integrated abductive and inductive approach, the study could adapt and refine theoretical frameworks. Based on the data gathered from the company and the customers, more nuanced insights and a more robust understanding could be achieved.

3.2 Sampling - The Case Company

The case company (called the Company in this study) is a large-sized actor in the manufacturing industry. The company was chosen through purposive sampling, which means that it was a strategic non-probability decision, to make sure that it was relevant for answering the research questions (Bryman & Bell, 2019). The choice of a large global manufacturer enabled a comprehensive examination of processes and customer interactions across multiple countries. Additionally, the Company's status as a well-established manufacturer means it has structured, defined processes, coupled with a comprehensive network of stakeholders and actors. All of this together allowed for a detailed analysis based on various data, including historical data, customer cases, and experiences.

3.3 Research Design

The study employed a mixed methods research design, combining quantitative and qualitative data collection techniques. The specific type of mixed methods research is called exploratory sequential design (Bryman & Bell, 2019), and the sequence was qualitative, quantitative, and lastly qualitative again (See Figure 3).

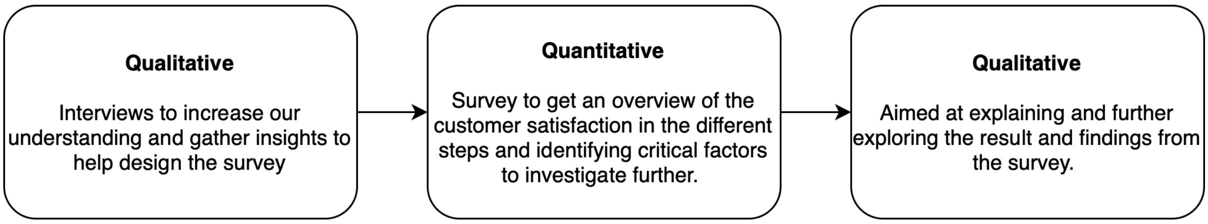

Figure 3. *Overview of the mixed methods design.*

The first qualitative part was intended to help design the survey by conducting three key informant interviews. One was with an external customer and the other two interviews were conducted with internal service process owners, to gather their opinions on the process that the survey intends to study. This led to an enhanced survey design, incorporating new or modified aspects of the service process that reflect the perspectives of both customers and stakeholders. For instance, we gained new insights regarding critical areas, reduced the number of questions to minimize respondent fatigue, and revised the wording for improved readability. Based on feedback on the survey questions from the customer interview, we divided one question into two to better differentiate between the experience of the two different types of actors in the service process. Additionally, the survey was enhanced with an overall satisfaction question and an inquiry regarding how respondents encountered the OSS-provider. Before the survey was distributed, the Company's existing customer feedback team refined the survey's format and design to align with official company communications.

The quantitative part consisted of the survey, which gave us an overview of the customer satisfaction in the different steps and helped identify critical factors to investigate further, allowing us to answer the first research question. The last qualitative step contained the majority of the interviews, which aimed at explaining and further exploring the results and findings from the survey. The explorative nature of the study is utilized when the goal is to enrich a set of quantitative data with additional qualitative information (Bryman & Bell, 2019). This approach was aligned with the objective of providing a comprehensive understanding of the factors influencing customer satisfaction and identifying key stages and touchpoints in the customer experience within the service process. The approach allowed us to identify the OSS-steps first during the key informant interviews and then add more and more information and details to it (See Figure 3) from internal documents and interviews with suppliers later during the process.

During the second qualitative part, the Critical Incident Technique (CIT) was partially utilized. The CIT is a method particularly suited for identifying and analyzing specific events or situations that significantly impact an individual's experience (Flanagan, 1954; Bryman & Bell, 2019). By focusing on these extreme cases, both positive and negative, the CIT aims to identify key drivers for customer satisfaction and enhance the quality of the service process. This approach allowed us to explore the dynamics of service experiences and provides insights into areas for improvement in the OSS. In this paper, we specifically examined incidents in the OSS process that can be characterized as critical. These incidents are defined as situations where the customer has experienced either a very good or a very poor experience of the service process (Bryman & Bell, 2019). To identify and collect some initial information about these specific incidents, a document study was conducted. This involved searching through the available internal databases to identify cases considered as critical incidents. For each identified incident, an analysis was conducted by examining the documents and logs pertaining to the specific case. The information about the nature of the incidents, their occurrence times, and geographical details enabled a thorough understanding of each critical incident. Further information about the incidents was gathered through the interviews, to gain a deeper understanding of the various perspectives and experiences associated with these critical real incidents. This information was supported by document studies, including internal reports, logs, and service manuals. These sources were utilized before the creation of the survey to identify problems, past experiences, and key steps in the service process. Additionally, these studies contributed to a comprehensive understanding of the structured service processes during the data collection phase and assisted in identifying critical factors that significantly impact customer satisfaction, thus allowing triangulating data (Eisenhardt, 1989).

Finally, to validate potential suggestions for improvement in the process (Bryman & Bell, 2019), focus groups discussions were conducted. Boddy (2005) describes that a focus group discussion is a method where a group of individuals engages in conversation about a specific topic, aimed at eliciting a wide range of views and deep insights through open and often friendly exchanges. The aim was to gather insights and opinions on aspects critical to the coherence and effectiveness of the overall service process. Engaging with individuals who play key roles related to the process ensured that any unforeseen issues or misunderstandings were addressed. This interactive setting of the focus group discussion encouraged participants to debate, question, and share perspectives, enriching the discussion's breadth and depth (Boddy, 2005). The choice of a focus group discussion is motivated by our intention to have a loosely directed discussion with the goal of understanding highly involved people’s opinions on the OSS and its impact on customer satisfaction.

3.4 Data Collection and Sampling

In this section, we outline our methodology for data collection, encompassing both quantitative and qualitative approaches. Both qualitative phases are described jointly in the interview section.

3.4.1 Survey

To achieve the goal of collecting initial data through the quantitative survey, we created a set of questions based on the service quality variables and our understanding of the service process supported by internal documents and key informant interviews. Each variable was linked to relevant dimensions outlined in Appendix B.1. For each question related to the indicators in the table, the respondents answered on a Likert scale. Likert scale is one of the most frequently encountered formats for measuring attitudes (Bryman & Bell, 2019). One advantage of this scale is that the closed question in the survey can be pre-coded, which makes the data processing process for computer analysis a simple task. The survey used a 5-point Likert scale where respondents could choose one point out of five points to answer the questions. In addition to the 5-point Likert scale, every question could be answered with *Do not know / Not applicable* to allow respondents to avoid questions that they have not experienced or do not remember. The survey was created in a digital format, accessible by a link in an email sent to the respondents. The main advantages of web based surveys is that it allows for point-and-click responses, structured responses, flexible time constraints for respondents, and employment of adaptive questions to reduce the number and complexity of questions presented to users (Van Selm & Jankowski, 2006). On the other hand, a potential issue with the web-based survey sent via email is that respondents may place value on anonymity, leading them to be hesitant to respond to our non-anonymous survey. The reason for the survey being non-anonymous was to obtain details regarding the customer cases, identify the parties involved, and understand the reasons behind the scores given. In the last part of the survey, respondents were asked if they were willing to participate in an interview to further explore their expectations and experiences.

Table 3. *Overview of the response rate of the survey.*

What	**Amount**
Survey sent	103
Opened	78
Responses	27

To identify survey recipients, we employed purposive sampling (Bryman & Bell, 2019). It is a non-probability sample in which the researcher aims to sample cases in a strategic way so that they are relevant to the research questions. This means that it was sent to everyone involved in the specific process of interest, in this case customers who have experienced the OSS during 2023 and 2024. Furthermore, we accounted for customers who had opted out of email distributions, removing them from the sample before the survey was dispatched. The survey aimed to increase the understanding and quantify customer expectations and perceptions and to understand critical stages as well as important touchpoints during an OSS process. Although this approach resulted in a slightly skewed distribution of demographic aspects such as age and gender, it was accepted since the focus was on analyzing customer experiences and satisfaction during specific process steps, requiring input from all respondents. However, we did analyze the distribution and took that into consideration when formulating the conclusion. The total number of survey invitations were 103, of which 27 responded, which means a response rate of 26 % (See Table 3). The response rate was higher than expected and considered good (Kantar, 2023), and can actually be higher considering that some of the customers received the email but never actively divided not to participate. The number of emails that were never opened was 28. There is a possibility that some of the email addresses are not actively used, which could actually mean a higher response rate in reality.

3.4.2 Interviews

The qualitative data collection included semi-structured interviews with various stakeholders, such as service agents, the management team, suppliers, partners, and customers, to gather detailed insights into the service process and customer interactions. This decision aligns with the guidelines provided by Bryman and Bell (2019), who advocate for the effectiveness of interviews in qualitative research, particularly for studies focusing on complex subjects such as OSS processes and customer satisfaction dynamics. Semi-structured interviews were used for their flexibility and structure, offering a balanced approach that is suitable for this research (Bryman & Bell, 2019). This format allows us to maintain a consistent framework across all interviews, ensuring that each participant is prompted with the same foundational questions (the questions used as a basis for the semi-structured interviews are provided in Appendix A1, A2, and A3). Examples that were posed to all parties included questions about crucial factors or areas contributing to a successful service process and any potential or experienced pain points.

The internal interviews lasted between 30 minutes and one hour and the external interviews lasted between 30 minutes and 90 minutes. Both members of the research team were present during all interviews. Maintaining some standardization was important to allow for comparative analysis, for example between the two sub-suppliers to the Company. Simultaneously, the semi-structured nature of these interviews provided the flexibility to explore emergent themes (Bryman & Bell, 2019), for example specific expectations and emotions that customers experienced during the service process. This adaptability is essential for exploring specific, nuanced areas that become relevant during individual interviews, thereby enriching the data with detailed insights. Some interviews were recorded and transcribed, while the rest were noted down as extensively as possible during the interview process. The reason for this is that some interviewees did not want to be recorded. The advantage is that they are more open and willing to share their subjective opinions, which could be valuable (Rutakumwa et al., 2020). However, the downside is that it requires significant concentration to transcribe the interviews as they proceed. The benefit of recording the interviews is that we can search and review everything they said afterward, including direct quotations. The disadvantage is that interviewees might feel uncomfortable being fully transparent when recorded. The total number of interviews conducted were 35 of which 17 were internal and 18 were external, see Table 4. For the interviews conducted in Swedish, we translated the transcript to English before the data analysis and coding process. In Table 5 below, "Supplier 1.1" denotes the first interviewee from the first supplier, while "Supplier 1.2" denotes the second interviewee from the same supplier. When "Supplier 1" is employed as a descriptor, it indicates the collective opinion of the supplier, which may encompass the perspectives of multiple interviewees.

Table 4. *A presentation of interviewees, their position, and the type of interview. Key informant interviews are labeled with * after the abbreviation.*

External			
Code name	**Abbreviation**	**Type of interview**	**Length of the interview [min]**
Customer 1	C1*	F2F	90
Customer 2	C2	Video	30
Customer 3	C3	Video	30
Customer 4	C4	Video	30
Customer 5	C5	Video	35
Customer 6	C6	Video	30
Customer 7	C7	Video	30
Insurance 1	IP1	Video	50
Insurance 2	IP2	Video	40
Supplier 1.1	S1.1	Video	50
Supplier 1.2	S1.2	Video	70
Supplier 1.3	S1.3	Video	50
Supplier 1.4	S1.4	Video	40
Supplier 2.1	S2.1	Video	50
Supplier 2.2	S2.2	Video	35
Supplier 2.3	S2.3	Video	55
Supplier 3	S3	Video	50

Internal			
Code name	**Abbreviation**	**Type of interview**	**Length of the interview [min]**
Process Owner 1	PO1*	Video	45
Process Owner 2	PO2*	F2F	60
Process Owner 3	PO3	Video	60
Service Agent 1	A1	F2F	30
Service Agent 2	A2	F2F	45
Service Agent 3	A3	F2F	60
Service Agent 4	A4	F2F	45
CC Agent 1	CCA1	Video	50
CC Agent 2	CCA2	Video	30
Salesperson 1	SP1	Video	45
Salesperson 2	SP2	Video	60
Salesperson 3	SP3	Video	30
Salesperson 4	SP4	Video	35
Salesperson 5	SP5	Video	30
Manager 1	M1	Video	50
Manager 2	M2	F2F	40
Manager 3	M3	F2F	50
Workshop 1	W1	Video	40

To enable using the critical incident technique, we used a set of questions to help them share what they think is important about the incident. Bryman and Bell (2019) discuss that one limitation is that it depends heavily on the ability to recall the event that they experienced in the past. Therefore, we asked the interviewees to prepare for the interview. Based on Bott and Tourish (2016), some typical follow-up questions we used to encourage customers to provide more details include: "What happened next?", "Who was involved?", "What did you/they do?", "What was the outcome?", "How would you describe your/their behavior in handling this situation?", and "How did this make you feel?"

The selection of interview participants was carried out by purposive sampling. Initially, a list of potential interviewees, primarily consisting of suppliers, sub-suppliers, and stakeholders related to the company, was provided. To augment this list and ensure a comprehensive perspective, additional relevant actors from the manufacturing service network were identified from an analysis of the service logs and from the key informant interviews. This expansion aimed to encompass a diverse range of viewpoints, enhancing the depth and breadth of the collected data. To further diversify our pool of interviewees, snowball sampling was utilized (Bryman & Bell, 2019). This technique commenced with initial contacts suggested by the company, who subsequently recommended further participants. This method proved effective in uncovering key informants within the network, thus introducing diverse perspectives on the service process. Regarding customer interviews, the list was also supplemented by critical incidents identified in the survey. This entailed contacting relevant customers who had agreed to be contacted during the survey for a follow-up interview, and out of the seven customer interviews conducted, five were identified from the survey (C3, C4, C5, C6, and C7).

A critical aspect of our methodology was minimizing selection bias. Selection bias arises when the study population is not representative of the target population, leading to measurements of risks or benefits that do not accurately reflect the target population to which conclusions are being extended (Nour & Plourde, 2019). While the initial list of contacts provided by the company served as a starting point, the final selection of interviewees was independently determined. More specifically, we identified additional interviewees that were suitable for the research questions and did not limit ourselves to the list provided by the Company. This approach was adopted to ensure that our sample was not disproportionately influenced by the company's preferences, aiming for an unbiased understanding. By owning the selection process, the study aspires to present an as authentic representation as possible of the various aspects of OSS and customer satisfaction within the Company and its suppliers and customers.

3.4.3 Focus Groups

In the latter stages of the data collection process, a total of four focus groups were conducted. This was undertaken to solicit their perspectives on the findings and gain a deeper understanding of the feasibility of the proposed solutions. The aim was to ensure that we had an accurate understanding of the process and its associated issues and challenges. One benefit of using focus groups is that they are a cheap and quick way to validate some findings (Morgan et al., 1998) by hearing the perspective of those who experience it firsthand on a daily basis. However, the limitation associated with focus groups is the risk of participants conforming to what others have said even though they may not actually agree (Hennink, 2013). To address this, we did not focus on specific peoples' onions but rather the overall discussion about challenges and feasibility of potential improvement suggestions.

Notes were taken during the meeting that was then used to validate the findings and some of the conclusions. The groups consisted of two to five people within different fields, both internally (local and international) and external parties.

3.4.5 Secondary Data Sources (Document Studies)

To gain an initial understanding of the process, its functioning, and the included steps, we conducted a document study. This involved reviewing internal documents including logs, emails, and process maps/descriptions to grasp the processes comprehensively, aiding in the formulation of survey and interview questions. Additionally, this approach was utilized to verify and augment the data collected from other methods. For instance, customer statements were cross-checked and compared with internal logs to ensure a comprehensive perspective. Document studies, as a form of secondary data usage, are pivotal in providing insights without the need for primary data collection, which can be both time-consuming and costly (Johnston, 2014), and allowed to build upon existing knowledge while focusing on gathering new data relevant to our research.

3.5 Data Analysis

For the qualitative interviews with customers, internal colleagues, and suppliers, thematic analysis was employed to systematically analyze the data collected. This method is particularly suited for identifying, analyzing, and reporting patterns (themes) within qualitative data, without the constraint of predefined categories, thus allowing for the emergence of unexpected insights (Maguire & Delahunt, 2017). This was done in a six-step approach as described by Braun and Clarke (2006), and some examples of how it was done can be seen in Table 5.

The first step was about becoming familiar with the data, and it involved reading the interview transcripts and summaries to gain a deep familiarity with the content. This immersion in the data helped prepare for the second step, namely generating initial codes. The coding was done iteratively in NVivo and data segments were annotated with codes that succinctly described the content. This process relied on the researcher's analysis and the study's theoretical framework. The codes were then used in the search for potential themes. This involved grouping together different codes that were related through a central concept or idea. These themes were continually refined and adjusted to ensure they accurately represented the data. The themes were then reviewed to ensure coherence. This step involved revisiting the coded extracts and the entire data set to validate each theme. It was critical to ensure that themes reflected a consistent pattern across the data set and were distinct from each other. Once they were established, the themes were clearly defined and named. This step involved a detailed analysis of each theme and its associated data to determine the essence of what was captured and how it is related to the research questions. Lastly, we used the themes for the last step, the write-up, meaning that the themes and the corresponding information was used in the paper to answer the research questions.

Table 5. Examples of how the coding and thematization was done.

Quote	First level code	Second level code	Theme
“Actually discovered it at the moment of the crisis […] and I was very relieved by the fact that just by pushing the bottom, everything [the OSS process] started”	Expectations	Expectations of Communication	Communication
“If the agent has said they will call back, [they have to] call back”	Communication between suppliers	Communicating with the customer	
“Information transfer between different people was not very good.”	Information transfer		
“Positively surprised that they covered everything without any comments”	Communication of the coverage	Coverage	
	Reimbursement management		
“An incident should be resolved the same day, at least within 5-6 hours because that is how [the OSS] is marketed”	Expectations	Expectations of Sustaining Operational Continuity	Sustaining Operational Continuity
“We struggled a lot with getting the case prioritized in the workshop”	Permanent solution - workshop	Permanent solutions	
	Permanent solution - towing		
	Prioritization at the workshop		
	Forced diagnostics		

In the quantitative research (the survey), the analysis primarily involved examining each question, considering both the average value and the distribution of responses. Because of the small sample size (27), we opted not to analyze correlations between aspects and customer satisfaction. Instead, we used a descriptive analysis as an indication of which areas are important to customers and to some extent support the findings from the interviews. By analyzing the results, we found that specific topics consistently emerged as significant concerns or areas of interest among the respondents. This insight guided us to tailor our interview questions more strategically, focusing on these key areas to obtain deeper, qualitative insights that the survey could not provide. The survey acted as a preliminary filter, helping us identify these critical topics, ensuring that the subsequent interviews were both efficient and directly aligned with our research objectives.

3.6 Research Quality

Maxwell (1992) highlights that quantitative researchers have criticized qualitative research for its absence of standardized methods to ensure validity. The concepts of validity and reliability may not always be relevant in the context of qualitative studies. The criteria for qualitative research proposed by Lincoln and Guba (1985) are trustworthiness and authenticity. Trustworthiness is made up of four sub-criteria: credibility, transferability, dependability, and confirmability. Since this research contains both qualitative and quantitative parts, we assess the trustworthiness of the qualitative part differently than the quantitative part. For the qualitative part, the criteria are credibility, confirmability, transferability, and dependability, while we use validity and reliability for the quantitative part.

3.6.1 Qualitative Part

According to Bryman and Bell (2022) the credibility of the study refers to how believable the findings of the study are. One common technique for ensuring credibility of research is triangulation (Bell et al., 2022). More specifically, the use of multiple data collection methods together with literature helped ensure the credibility of the conclusions that were drawn. When interviewing dissatisfied customers, there is a risk of negativity bias (Rozin & Royzman, 2001), wherein the negative aspects of the service process receive excessive attention. To mitigate this, we engaged with relevant stakeholders, conducted an analysis of customer satisfaction data, and categorized various types of complaints to maintain an objective perspective on the OSS.

In an effort to enhance the credibility of the research, selected interviews were audio-recorded, allowing for validation of the results later during the research process. Bryman and Bell (2022) highlight this technique as a strategy to minimize the impact of the researcher's biases and personal values on the study. Additionally, it provides the opportunity to review the spoken content repeatedly, facilitating a deeper comprehension.

Confirmability is similar to objectivity and achieving total objectivity in qualitative research is challenging because the researchers' decisions and personal biases inevitably influence both the research process and its outcomes. To address this, we made an effort to form individual perceptions before discussing other perspectives among ourselves, aiming to minimize the risk of personal biases. Furthermore, the use of interview recordings also boosts confirmability, as reviewing these recordings helps researchers maintain an objective stance on the interview content.

In qualitative research, focusing on a small group within a specific area and time can make it hard to apply findings more broadly. To ensure transferability, meaning the results could apply in different settings too (Bryman & Bell, 2022), this study described the conditions of the services studied (see section *4.1 The OSS process*). These included descriptions of the OSS process, how the service network is set up, and how customers are involved. Additionally, analytical generalization is described by Yin (2009) as extracting broader conceptual insights from specific case study findings, which remain applicable to contexts beyond those initially examined. In this, the created framework makes it possible to use the findings for future evaluations of service offerings.

To enhance the study's dependability, regular evaluation meetings with supervisors from Chalmers University and the case company acted as an auditing mechanism. This approach aligns with Bryman and Bell's (2022) framework, ensuring an orderly research process through the involvement of peers and supervisors.

3.6.2 Quantitative Part

Reliability entails ensuring that methods and results remain stable over time and can be reproduced by other researchers under similar conditions (Bryman & Bell, 2022). In this study, several measures were implemented to enhance reliability, focusing on structured data collection and analysis methods.

First of all, the survey questions were grounded in the SERVQUAL model, a renowned service quality framework, which includes variables that are both reliable and validated. By basing questions on this well-established model and supplementing them with insights from internal documents and key informant interviews, the study ensured a consistent and systematic approach to data collection. This supports the reliability of the data by reducing variability that might arise from ambiguous or inconsistently framed questions. Furthermore, each variable was explicitly linked to relevant dimensions outlined in Appendix B.1 of the study, reinforcing the reliability of the findings through uniform data collection procedures across different respondents. The use of a Likert scale format for responses is another critical factor in enhancing reliability. As noted by Bryman & Bell (2022), pre-coded closed questions facilitated by the Likert scale simplify data processing and ensure that responses are consistent across different participants. The structured and standardized nature of a 5-point Likert scale also aids in minimizing the subjectivity in responses, which is particularly important in enhancing the reliability of attitudinal measurements.

Despite these strengths, challenges to reliability were identified concerning the representativeness of the sample. The survey was distributed to a specific group of 103 customers who had experienced the service. Although this ensures relevance, it may not comprehensively represent the broader customer base, potentially impacting the generalizability and reliability of the results. Moreover, the sample of respondents who completed the survey might not accurately reflect all 103 customers, leading to possible inconsistencies in the data. This limitation was acknowledged in the study, and efforts were made to address it by using the survey results as a preliminary guide to identify key areas for deeper exploration through in-depth interviews.

Additionally, the subset of customers willing to participate in follow-up interviews may not represent the broader survey sample, which could introduce another layer of bias and affect the reliability of the findings. This aspect was carefully considered, and the interviews were used to provide qualitative depth and context to the quantitative survey data, rather than as standalone evidence.

When it comes to the survey's validity, we look at two main things: "face validity" and "construct validity." Face validity is about how much a test seems to measure what it is supposed to. It is like a first impression of the survey's effectiveness. Construct validity is about how well the test actually measures what it claims to, based on its theory.

The use of the Likert scale in the survey aligns with established research practices, as it is a widely used format for measuring attitudes (Bryman & Bell, 2022). The choice of this scale enhanced the construct validity of the survey instrument. By quantifying subjective judgments on a linear scale, the Likert format allows for precise measurement of attitudes. To further strengthen the validity of the survey, an option for "Do not know / Not applicable" was included. This choice allows respondents to opt-out of answering certain questions where they might not have an opinion or relevant knowledge. This approach helps minimize response bias by ensuring that data collected reflect genuine opinions and accurate information, thereby enhancing the face validity of the survey by ensuring that responses truly represent respondent perspectives. Further, the construct validity was strengthened by utilizing document studies to compare and critically evaluate the respondents' answers to specific questions.

Lastly, the strategy of inviting respondents to participate in follow-up interviews plays a significant role in validating the survey findings. Such interviews can uncover deeper insights and allow for a more nuanced understanding of the participants' attitudes and behaviors, contributing to both the construct and face validity. These interviews offer a qualitative depth that survey questions alone might miss, providing a richer, more complete understanding of the underlying constructs being studied.

3.7 Ethical Considerations

When conducting a study, it is crucial to consider the ethical issues that may arise. Bryman & Bell (2022) emphasize harm to participants, lack of informed consent, invasion of privacy, and deception as four key areas regarding ethical behavior in research. It is vital that all individuals involved are properly informed about the research. In this thesis, interviews and surveys were the primary data collection methods, and all participants were informed about the purpose of the study and how their information would be used. To maintain confidentiality and minimize the risk of harm to participants, interviewees remained anonymous in the thesis. The company obtained additional information beyond what was published in this study, nevertheless, sensitive details were consistently anonymized by withholding names. The survey was conducted non-anonymously due to limitations of the company's database and survey system, which do not support anonymizing customer responses. Those recorded during interviews were asked for their consent and informed that the recordings would only be accessed by researchers and deleted once the data was compiled. Additionally, the case company remained anonymous to reduce potential implications for them and the interviewed employees and customers.

4 Empirical Findings

The empirical findings under each subsection are based primarily on qualitative interview data, but they were also supplemented with information from identified critical incidents, which were gathered from emails and logs. Additionally, quantitative data from the survey (see Appendix B.2 for the full survey result) was added to support and nuance the findings. To get an overview of the OSS process, see Figure 4. The findings are divided into two main themes. The first theme, *Communication and Information Transfer,* covers aspects regarding how the communications works and are perceived during the different OSS steps and the actors involved. The other main theme, *Sustaining Operational Continuity,* covers the actual solutions that were provided for the customers. These two main themes were identified during the coding procedure described in the method section *3.5 Data Analysis.*

4.1 The OSS process

The depicted process outlines the steps involved when a customer encounters a service issue, involving multiple actors to ensure resolution and operational continuity (see Figure 4). Initially, when a customer experiences a breakdown, they contact the Company for assistance. The Company redirects calls to either Supplier 1 or Supplier 2, evaluating their performance using KPIs such as response time. Following this, the designated supplier, along with their sub-supplier, responds to assist the customer directly. Both suppliers have many different suppliers outside of the Nordic region, often one in each country.

To address the issue on-site, the service provider arranges and communicates either a permanent solution at the site or provides the customer with a temporary solution while the product is repaired at a workshop. Often, if the customers receive service at a workshop, they get a temporary solution, while if it is repaired on-site, there is no need for one. Ultimately, the process aims to maintain the customer's operational continuity. If the initial suppliers did not cover costs from the outset, the customer can be reimbursed for potential expenses. Lastly, the insurance provider is also an active part of the OSS process that customers experience, even if it is not part of the assistance provided by the Company, as they sometimes cover costs that the Company does not.

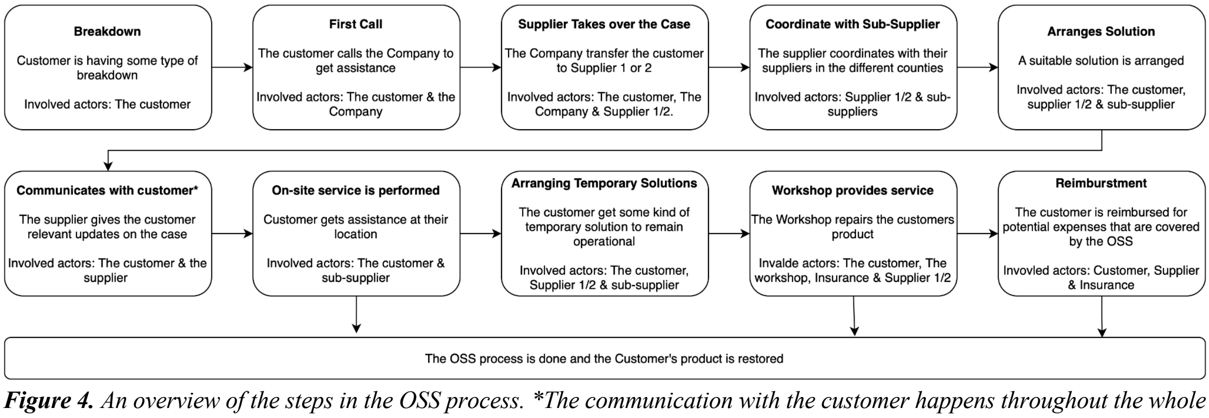

Figure 4. *An overview of the steps in the OSS process. *The communication with the customer happens throughout the whole process.*

4.2 Communication and Information Transfer

The OSS process involves the customer and multiple different actors, including the Company, suppliers, and workshops. To keep the process efficient, a lot of information needs to be communicated to many different parties. This section will cover what the various actors think about the communication and transfer of information between different actors at different steps in the process. The sections *4.2.1 Customer's View of Communication and Information Transfer* and *4.2.2 Provider's View of Communication and Information Transfer* respectively aim to differentiate the results based on whether they reflect the perceptions of the customer or the provider offering the OSS.

4.2.1 Customer's View of Communication and Information Transfer

The process of information transfer and clarity are subjects that the customer had many opinions about. However, few customers were able to articulate their expectations regarding the OSS. It is a service that is not used on a daily basis, resulting in a lack of awareness about what the service offers and what can be expected when it is used. This is illustrated by customer 5, who mentioned having no expectations because they were outside their home market, and customer 4, who stated they only expected it to work and didn't even know the service existed. Customer 6 further reinforced this point by mentioning they "actually discovered it at the moment of the crisis […] and I was very relieved by the fact that just by pushing the bottom, everything [the OSS process] started". However, there are exceptions with customers expecting good and prompt service (Customer 3) and that the Company should handle the communication with the different actors involved (Customer 2, 3 & 7) but overall few customers have expressed detailed expectations.

There are different perspectives on the performance of various parts of the process, and Table 6 summarizes some of the most common implications mentioned by the customers. The different areas will be explained in more detail in the following sections.

Table 6. *A summary of some of the most common challenges or critical factors regarding communication and information transfer expressed by the customers.*

Area	**Important factors**	**Respondents**	**Illustrative quotes**
Cultural and Language	Problems with the language barrier	C2, C6, C7	"We had to call and talk to them and they didn't speak any English, so we had to do that in Spanish. That was quite difficult" (C7)
Coverage	Uncertainties regarding OSS coverage	C3, C4, C5, C7	"There was also a problem since they didn't have information if the assistance covered the problem or not. I think they have a problem to see if he has the assistance or not" (C3)
Communicating with the customer	Bad updates	C1, C2, C3	"Very poor foresight with certain types of information, if the agent has said they will call back, [they have to] call back" (C1), "They never called back so I had to call myself and ended up in a phone queue" (C2)
	A lot of different contact points	C1, C2, C3	"Difficult when speaking with a new person everytime. Explaining everything that happened from the beginning again" (C3)
Internal Communication	Problem with information transfer	C3, C7	"They do not have very good communication" (C3), "I do not think they talked too much to [the Company], actually. So I think we did a lot of talking" (C7)
Customer Involvement	Frustrating to drive the case forward	C1, C2, C3, C7	"I had to drive the case myself" (C2)

4.2.1.1 Cultural Differences and Language

Customers recognize that communication may pose a challenge when they are abroad and have therefore adjusted their expectations accordingly, and Customer 6 realized that “he [the service workshop staff] was maybe not too confident to speak English”. Others perceive it as a difficulty, for example Customer 7, who said that: “We had to call and talk to them and they didn't speak any English, so we had to do that in Spanish. That was quite difficult”. The same customer also mentioned that they received assistance from a local friend to overcome the language barrier with local providers: “we do not speak fluent Spanish, but we have a friend that speaks well, quite good. So he had to take all these phone calls for us because the [OSS-provider] did no't”. The overall perception is that customers realize that the language barrier exists and experience challenges with communication as a result.

4.2.1.2 Coverage

The interviewed customers express differing experiences and understandings regarding their eligibility, information clarity, and reimbursement processes. While some customers encounter challenges such as unclear information and unexpected payment requests, others have positive experiences with smooth reimbursement processes. One example is, that both Customers 3, 4, and 5 had some unclarity regarding what was covered by OSS and what was covered by the insurance company. Another perspective was shared by customer 6, who expressed being “positively surprised that they covered everything without any comments” and found the reimbursement process really fast and smooth. Customer 7 received some information about the OSS from the dealer beforehand, so they had some knowledge of the coverage before the incident. However, during the breakdown, the workshop requested payment, leading to uncertainties. Overall, the customer interviews highlight varying levels of clarity and satisfaction among customers regarding the financial coverage offered by the OSS process. The survey results support the identified challenge regarding uncertainty, with 28 % of the respondents giving the lowest score (1) for the clarity of OSS coverage, which indicates that there seems to be uncertainties from customers regarding the coverage. See the distribution of answers in Figure 5. The average score, however, was 3.6.

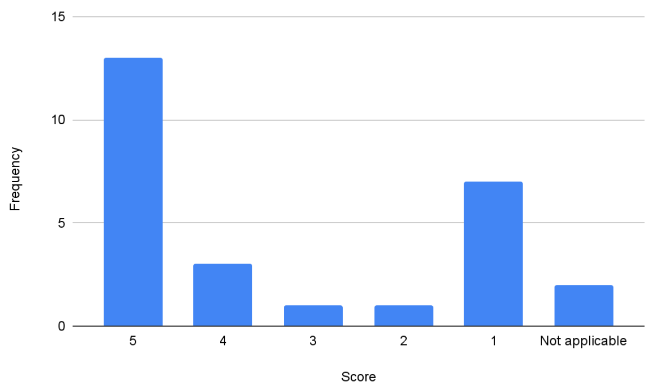

Figure 5. *The clarity of the OSS coverage.*

4.2.1.3 Feeling of Being Cared for

The customers have mixed experiences regarding how well they felt taken care of. Customer 4 was insecure after the incident but got some quick information from the agent who said that the issue should be solved quickly. Customer 5 was pleased with the process but expressed some uncertainty about how much support he really got. Nevertheless, he said that “everyone I talked to was knowledgeable, and eager for [the problem] to be resolved”. Customer 6 explained that the service agent was very calm and could answer all questions quickly, and described the agent as very good, reassuring, and helpful, stating, “I felt very well taken care of in the urgency of the situation". Customer 7 did not feel like they were taken care of and said that they “felt like we were stuck on our own and had to fix their situation on our own”. In general, it appears that customers find the agents knowledgeable and professional, aligning with the survey results (see Figure 6); however, some of them still seem to feel neglected and left to resolve issues on their own.

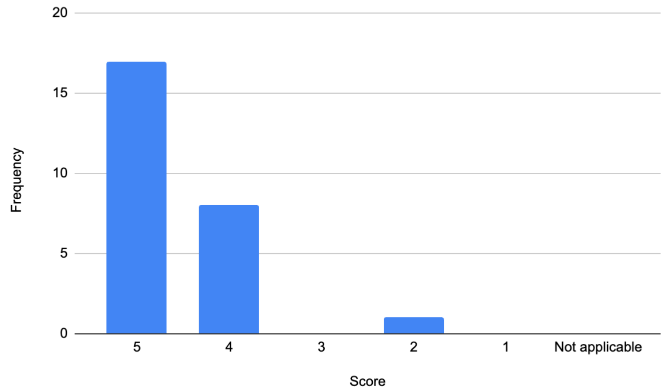

Figure 6. *The service agent was patient and listened to my request/problem.*

4.2.1.4 Communicating with the Customer

There have been several complaints from customers regarding the information and number of updates that they got from the providers (mainly supplier, sub-supplier, and workshop) during the OSS process. The dissatisfaction with the communication is somewhat supported by the survey, where it can be seen (Figure 7) that a relatively high percentage of the customers are strongly dissatisfied with the communication with the workshop. It is also supported by the Customer 3 saying ”in the beginning I had to call them [the service workshop] everytime. I called 2-3 times a day. I did not get any information from them.”

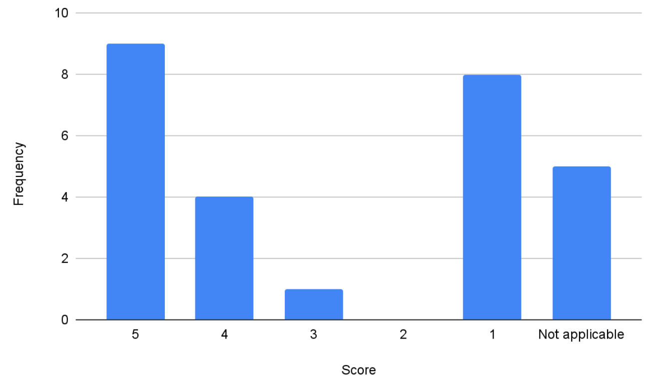

Figure 7. *The communication with the service workshop was good.*

The low frequency of updates has been mentioned frequently throughout the interviews, where multiple customers were frustrated since they were promised callbacks with updates and new information that never happened. Customer 1 stated that the agents had “very poor foresight with certain types of information”. However, the majority of survey respondents are satisfied, a sentiment further supported by Customer 4, who received prompt information regarding solutions, and Customers 5 and 6, who received continuous updates and callbacks as promised. Nevertheless, the positive aspects were often mentioned together with negative experience, illustrated by Customer 3 stating that “all persons working [at the service provider] were not bad. Some helped me and called back but many of them just took notes and then nothing else really happened.” One clear example of the lack of updates is exemplified by a case where a customer, despite adjusting his expectations while abroad, became upset due to extended waiting times. The shared log system between the supplier and the Company revealed that the agents deemed the situation stable and chose to defer action until after the weekend. However, the customer was never informed of this decision, leading them to believe that the provider was incapable of performing the OSS.

The number of contact points throughout the process was a common complaint. While some customers encountered a seamless process where they interacted solely with one actor, the majority expressed frustration at having to communicate with multiple individuals or actors throughout the process.

4.2.1.5 Internal Communication

The transparency of the process differs between different customer cases, where some could clearly describe the different actors involved and how the communication seemed to work between them, while others could not identify the different actors involved. For the customers with insights into the communication, there was frustration about the communication between the country specific sub-supplier and the supplier, potentially delaying the OSS. Customer 2 stated that the supplier blamed the sub-supplier, something he did not appreciate.

The empirical results highlight that some customers experienced communication problems between the Company, the supplier, and sub-suppliers. Less than half of the interviewed customers were satisfied and customer 3 noted that “they [the Company and its suppliers] do not have very good communication”. Additionally, some customers express that they sometimes got stuck in a loop between the Company and Supplier 1 when no one could give the right information. Also, customers 1, 2 and 3 expressed that every time they called the Company, they didn't know what was happening with their case. The flow of information to and from the workshops was also a recurring factor, with several customers expressing criticism. Customer 7 was very explicit, saying “I do not think that [the Company] or [the Supplier 1] had any communication with the workshop. Because we informed them about what was happening”.

The results from the survey (see Figure 8) strengthens this varied perception of communication. In response to the question about how customers perceived the transfer of details of their case to the next person(s) in the process, it is evident that there were both satisfied and unsatisfied customers, indicating an unstable quality of service.

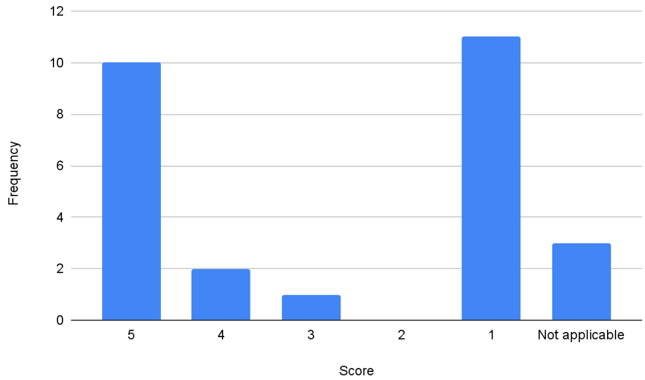

Figure 8. *Details of my case were smoothly transferred to the next person(s) in the service process.*

4.2.1.6 Customer Involvement

Generally, the customer plays a significant role in the OSS, from providing information to the providers to managing some of the temporary solutions themselves. Some have participated in the process voluntarily, while others felt compelled to intervene to advance the processes, despite preferring the OSS-provider to manage everything. The recurring issue is that customers expected to be less involved in driving the case forward than actually were. Both customer 2 and 7 both specifically said: "I had to drive the case myself" which is also supported by the results in Figure 9. One example is that customers thought that they had to make way too many phone calls to the OSS-provider. To summarize, several customers expressed their reluctance to drive the case forward, instead expecting the OSS-provider to drive the case forward. One notable example is that Customer 7 said that "when we called the Company, we usually were a step ahead of them, we had more information than they had. So they just said, we are going to call […] and they said that they could not reach them [the Workshop], but we usually managed to reach them".

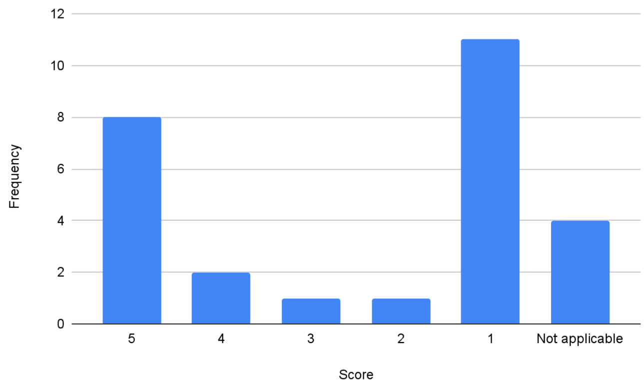

Figure 9. *The service provider was driving my case forward rather than me pushing.*

Regarding the degree of customer involvement, Customer 2 was asked by Supplier 1 whether he preferred them to arrange a temporary solution or if he would like to handle it himself and be reimbursed later. He chose the first option to minimize his own efforts, but later expressed frustration and claimed that he would have managed it himself had he known the complexity involved.

4.2.2 Provider's View of Communication and Information Transfer

The different interviewees from the providers also hold various opinions about communication and information transfer. While different parties offer diverse perspectives on various parts of the process, Table 7 summarizes some of the most common complications. These areas will be explained in more detail in the following sections.

Table 7. *A summary of some of the most common challenges or critical factors regarding communication and information transfer expressed by the providers.*

Area	Important factors	Respondents	Quotation
Managing Expectations	Important to manage expectations	A3, A4, M3, SP1, SP2, S1.1, S1.2, S2.1, S2.2	"It can be easy to promise too much" (A4), "managing expectations is always hard" (S1.1)
Cultural Differences and Language Barrier	Problems with the language barrier	CCA2, M1, M2, PO3, SP2, SP3, SP4, S1.1, S1.2, S2.1, S2.2, S2.3, S3, W1	"You may have a really skilled technician, but most likely those technicians are not capable to speak a word of English" (SP4), "It can be difficult when someone can't speak Swedish and has to try to explain what's wrong or what happened" (Workshop 1)
	Cultural difficulties	IP1, IP2, M1, M2, PO3, SP2, S1.1, S1.2, S2.1, S2.2, S2.3, A3	"Other countries have a different perspective on time - they do not work as quickly as Nordic customers expect" (S1.1), "When it comes to Spain, Italy and France, it takes them too long to serve the customer. The service level is rather poor. Communication is usually poor. Reliability is poor." (SP2)
Coverage	Unclear what's included in the OSS	A2, A3, A4, PO1, PO3, S1.4, IP1, CCA2,	"The policies are sometimes unclear both for customers and workshops" (A2), "It might sometimes be hard knowing what exactly is covered and what is not" (S1.4)
Feeling of being cared for	Important to make the customer feel taken care of OR The customers often feel insecure	A2, A4, CCA1, CCA2, IP1, IP2, M2, PO1, PO3, S1.1, S2.1, S2.2, S2.3	"It is particularly important in international cases to be soft and embracing." (A4), "The customers are in a greater dependency position when abroad." (IP2), "The customer needs much more support compared to in Sweden, where people generally have a better grasp." (S1.2), "The most important thing is that the customer feels seen, heard." (S2.2)
Communication with the customer	Keeping the customer informed	S1.4, SP2	"We usually have a follow-up with the customer so that they do not have to call us" (S1.4), "Proactive communication is really key." (SP2)
	Problems with keeping the customer informed	CCA1, CCA2, S2.1, SP4, S1.4	"The main problem is a lack of information" (CCA1), "Communication is very important in the whole process" (SP4), "Being proactive is essential" (A3), "Some days we are very efficient and have the opportunity to call all customers, but other days it might be a bit too much to manage" (S1.4)
Internal communication	Information transfer between	A1, A3, PO3, S1.3,	"Would have been great if everyone had a system that was interconnected" (S1.3), "insufficient information has consequences further down in the process" (A3)
Customer Involvement	Finding a suitable level of customer involvement	A3, S1.2, S2.2, S2.3	"If the customer comes up with their own solutions, then usually the case goes much faster" (S2.2), "The customer's situation, together with long waiting times, makes the customer impatient for updates, feeling they need to contact the Company or the supplier for more information. This might make it feel like the customer is driving the case forward" (A3)
White Label	Suppliers and sub-suppliers represent the Company	A3, CCA1, CCA2, M3, PO3, PO2	"The subcontractors do not think at all like [the Company][...] they have a different priority and way of providing service" (PO2) "The understanding and feeling of care are not the same and become worse further from [the Company]" (A3)

4.2.2.1 Managing Expectations

Managing expectations is a significant aspect of the agent's role, and several stakeholders have emphasized the importance of providing clear instructions and establishing the process from the outset. They generally agree that it is important to be transparent with the customer and explain how the process will work, not hiding the fact that it could and probably will take some time. However, they also express that it is one of the harder things to do for the service agent.

In the interviews it was emphasized that managing expectations is crucial for cases abroad. Multiple interviewees stressed the importance of setting realistic expectations and informing the customer about the involvement of multiple actors and subcontractors, which could result in longer processing times compared to domestic cases. They specifically noted that if expectations for service time are lowered, customers may be more satisfied if the actual time required is shorter. Supplier 2.2 said “so they are prepared for the worst and then it ends up better in the end”. They also said that they want to give a realistic waiting time, and that this allows the customer to do something during the waiting time as well.

Much of the responsibility for managing customer expectations lies with the suppliers. However, Supplier 1 also emphasized the importance of the Company managing expectations before transferring the customer. Manager 3 supports the saying that managing customer expectations is important and adds that it has to be worked on actively, especially when the performance cannot be influenced. Further, Salesperson 2 said that one way to manage the expectations is to send out a sms before the holiday season explaining the circumstances for the OSS process.

4.2.2.2 Cultural Differences and Language Barrier

The majority of the interviewed actors in the OSS process agree that language barriers and cultural differences contribute to the complexity of the process, often making handling abroad cases difficult. The language makes it harder for the different actors to communicate, sometimes leading to important information being significantly delayed, misinterpreted, or even ignored. One example is when the suppliers have to contact a workshop and need to go through the sub-supplier since they themselves do not speak the language. Another example directly impacting customers is the direct contact between the customer and a local provider or workshop where the two actors speak different languages. This is a problem that the suppliers have expressed being aware of and sometimes receives complaints about. Even though this is identified as a clear problem, there is no clear process in place for how to handle these barriers. According to the Company agents, the suppliers should be able to assist in the contact with the workshops in case of language barriers, but they are not aware of how it works in reality.

In terms of cultural differences, suppliers note varying customer expectations based on their origins, with claims that Nordic customers generally hold high expectations for an efficient and smooth OSS process. Additionally, several actors have observed significant variations in service quality from sub-suppliers depending on the country in which they are located. The common pattern is that countries in the southern part of Europe (such as Greece, France, Italy, Spain, etc.) generally have significantly longer service times and less degree of reliability, which negatively impact customer satisfaction. The longer service time has several potential causes, including high concentrations of customers during the summer months. However, the cultural aspect is mentioned as one key factor by multiple actors throughout the entire process, for example Insurance Provider 1 saying that “it is a huge difference in how it is handled depending on which country the customer is in. Italy and Greece, for example, do not have the same level of service at all. It is actually us here in the Nordic countries who are spoiled with a very high level of service” and Agent 3 expressing that “the time perception is different in Southern Europe”.

4.2.2.3 Coverage

First of all, there seems to be some uncertainties when determining whether customers are entitled to the OSS or not during the first call. Process owner 3 describes that since the question of being entitled or not is the whole foundation of the OSS, it should be the first thing that appears to the service provider.

Several interviewees report that managing the coverage agreement is challenging and that it could be difficult for the customers to understand what is included or not. It can also be difficult to determine what falls under the OSS-agreement and what goes on insurance. If it is insurance related, Supplier 2 contacts the insurance company to discuss the division of costs between the OSS agreement and the insurance, something that often takes time. The Insurance Provider confirms this perspective and noted that there is a lot of coordination together with Supplier 2 and the Company. It was also explained that they have realized that customers are sometimes unsure about the difference between OSS and insurance and that this is something they consider important to improve.

Lastly, being a service agent requires instincts to solve problems in a good way, as agents can never be fully trained to handle each unique case. This challenge often leads to discussions between the supplier and the Company, particularly when decisions are needed for potential solutions that slightly deviate from the agreement. There may be cases where agents need to deviate from the process or conditions in the agreement to save both time and money. The following quote from Supplier 2.3 summarizes the provider's perspective on coverage: "We have quite large mandates to solve things, which is very nice because abroad there can be many ifs and buts. But as long as we stay within the framework, there is some wiggle room that mostly suffices when helping a customer".

4.2.2.4 Feeling of Being Cared for

When asked about the extra important factors for cases abroad, almost all interviewees responded that customers are often more insecure, afraid and in a greater dependency situation when experiencing a breakdown abroad. As a result, making the customer feel taken care of is considered one of the most important factors. However, this is also an area where many agree that there could be a lot of improvement. Interviewees from the Company often expressed that the suppliers do not do enough to make the customer feel being taken care of, for example, by providing regular updates. The suppliers themselves agree that it is an area needing improvement, but also mention that the problem is challenging to handle during the summer when there are a lot of cases to manage. Further, Supplier 2.1 explains that it is a balance between taking care of one customer and helping the next: "The Company has a requirement [for us] to respond within 20 seconds. The longer I spend with a customer taking care of them, the worse help the next person gets who has to wait longer in line". The most important actions for agents to consider to make the customers feel being cared for are shown in Table 8 below.

Table 8. *Considerations and the corresponding actions from providers.*

Consideration	**Actions suggested by providers**
Customer is afraid, insecure, and worried abroad	Ensuring customers are not denied service on the first call and are quickly redirected to the correct agent.
	Providing complete information immediately upon contact.
	Have a close contact with the customer, for example providing updates when service has been started.
	Explaining processes clearly and defining the responsibilities of both the customer and provider.
	Managing their tone and pace during calls to match customer needs.
Customers have varied expectations and personalities	Being cautious with promises to avoid unmet expectations.
	Finding a personalized way of managing specific customers and ensuring the right communication path for the customer. Showing empathy and making the customer feel heard.
	Gather information directly from the customer and adjust the temporary and permanent solutions to the individual's needs

4.2.2.5 Communicating with the Customer

As mentioned in the previous section, giving the customer regular updates is an important factor that most of the actors agree upon. However, there are differences on how the different actors experience and think that the process should work. Generally, the suppliers are striving to communicate often with the customers, for example informing about the next step, giving regular updates, and asking if they need further support. Supplier 2 explains that they have a system in place to remind agents to check on customers who haven't received updates for a while. However, the efficiency of this system relies on the quality of information provided in the logs. This quality can often suffer during the summer months when many inexperienced interns are working, despite having a process description clearly outlining which questions to ask and what information to provide. Connecting to that, several internal actors perceive that the suppliers do not reach out as frequently or promptly as expected regarding benefits and ETAs (such as temporary solutions, towing, etc.). They explain that they understand customers become frustrated when not receiving sufficient updates which they also often see customers' complaints about.

It is also noted that the updates have a big impact on the perceived waiting time and service level exemplified by Agent 3 stating that "unknown waiting time is perceived as longer than known waiting time", a statement which is agreed by multiple other actors. This is an interesting aspect since most actors interviewed also mentioned that the agents should not promise too much. It was often explained that the promises made in the beginning of the process will set the customer expectations for the whole OSS process, which could be problematic if promising too much. This is especially true for abroad cases since the supplier has limited control and information about how and when the sub-supplier does their assigned tasks. Instead of promising the customer a time, some actors have explained that they should tell the customers that it will probably take a long time and encourage them to do something while waiting to minimize the perceived waiting time and lower the expectations.

One common reason for customers not receiving updates, aside from the lack of resources, is that the supplier or workshop has nothing new to report, as nothing has changed in the case.

Both Supplier 1 and 2 say that they try to send out updates, often via SMS, even if something has not changed "just so the customer does not feel forgotten" (Supplier 1.3). However, both are aware that this sometimes does not work as it should, explained by Supplier 2.3: "That's probably what we may need to work on, to communicate even if there is not any new sorting […] if it takes too long in between, the customer can feel that they are forgotten. So, to communicate even if there is not anything new to communicate to the customer. That's probably what might be a deficiency sometimes when it is busy in the summer with us".

Several actors emphasized the importance of gathering as much information as possible about the case during the initial call. This enables the suppliers to plan ahead and inform the customer about the overall plan early in the process. Both suppliers and internal actors specifically pointed out that they always want to stay ahead to provide the customer with good service and be a step ahead to manage delays efficiently. It is also mentioned, especially from Supplier 2, that customers should be given all relevant information about the process and following steps in the first call. Regarding follow ups, Supplier 1.4 mentioned "our goal is to call all customers to hear what they wish that we should do and what they themselves will do", which is well in line with other actors as well.

4.2.2.6 Internal Communication

The process involves numerous actors at various stages, making communication transfer a crucial aspect for smooth operation. Opinions vary on how well this works, but many actors have expressed concerns. A common complaint is the absence of an effective connected channel for transferring information among the different actors, leading to difficulties in obtaining a clear view of the case's status in real time, both for the Company, the suppliers, and the involved insurance company.

Process Owner 3 highlighted the challenge posed by the long-distance supply chain, characterized by multiple layers of suppliers, which creates a gap between the service provider executing the task and the one interacting directly with the customer. It is time consuming to transfer information between the supplier and the sub-supplier in the specific country and they rely on email communication since there is not an internal system available for keeping track of the process. The communication between the Company and Supplier 1 however, seem to be working well thanks to communication systems such as the shared chats because everything is much easier and faster to get answers to.

Supplier 1.3 also explained that general communication problems exist with the workshops, for example that they do not answer the phone, and that it is difficult to get updates. Effective communication is crucial for workshop efficiency. For example, workshops require detailed waybills when products are towed to facilitate prompt service. Missing or unclear information, such as poorly written notes, can delay processes and hinder customer contact.

However, the challenges do not just exist between the different organizations involved but also among different individuals or agents within each organization. Typically, one case is not handled by just one agent, necessitating the transfer of information between agents. According to Agent 1, communication on agent level accounts for the majority of the problems with the OSS. Suppliers 1 and 2 stated that they have established processes to handle information transfer, with digital logs being updated after every service process step or contact and Supplier 2.3 said that: "Everything that we agree upon with the customer should be written there [...] We really emphasize that we'll never be better than our logs. If something is not logged, then it can have consequences later. So, it is super important to summarize during the call, and maybe after, what has happened in the interaction with the customer". Despite recognizing the importance, it was pointed out that the logs sometimes are not good enough, which could cause agents to try to solve the situation again giving the customer more benefits that they are entitled to.

4.2.2.7 Customer Involvement

Most stakeholders agree that ideally, the customer should only need to make the initial call in their native language. After that, the provider - preferably the same agent throughout the entire case - should manage everything without requiring the customer to contact anyone else. Supplier 1.4 expressed that "we usually have a follow-up with the customer so that they do not have to call us. That is at least our goal. Yes, so they know what will happen next and do not need to ask us. We should ideally be a bit ahead". Supplier 2.3 describes that they have a system on how to handle the challenge of communication: "We have a case management system [...] There we have all the details about the incident and we also have logs [...] This is happening today, this is what the customer should have, this is what the customer should be informed about [...] When you're in the system, you get notifications to call the customer about things".

In reality it is a complex process with many involved actors, making it hard to coordinate and there are indications that the supplier has a hard time to actually have a good picture of the whole process and keep the customer updated. The agents describe that the customer sometimes calls back to the Company because of lack of information. Agent 3 gives one possible explanation on why, saying that "the customer's situation, together with long waiting times, makes the customer impatient for updates, feeling they need to contact the Company or the supplier for more information and about the next step. This might make it feel like the customer is driving the case forward." Another reason for the supplier not driving the case forward is due to being overloaded with customer cases during the summer. Suppliers note that the process often moves faster if the customer manages parts of it themselves, such as arranging temporary solutions. However, there should be some kind of middleground, which is well described by Supplier 2.2 stating that:

> "A middle ground is always appreciated. If the customer is very proactive, comes up with their own solutions, then usually the case goes much faster. If it is a customer who expects us to do everything, then they usually call often asking for updates because they think we are taking a long time, perhaps. But if someone does everything themselves, they might have missed something in the terms, so a middle ground is absolutely preferable so that we can bounce ideas off each other."

One exception is during the workshop stage, where the suppliers are not responsible for communications. Process Owner 1 clarifies that it is the workshop's responsibility to provide customer updates. Subsequently, it is the customer who should inform the suppliers about the progress of their case and any additional temporary solutions they may require.

4.2.2.8 White Label

The OSS process is described as white label, which means that Supplier 1 and Supplier 2 represent the Company in process steps that belong to the suppliers, for example by answering in the name of the Company. This is aimed at providing customers with a seamless journey between different actors. However, it is not always utilized, and at times, it could introduce additional complexity. Of the internal agents that transfers the call to the suppliers, only one out of four fully follows the white label process. The rest of the agents explain to the customers that they are now transferred to the Company's supplier who handles the abroad cases. One issue that can arise when it is unclear for the customer who they are supposed to speak to is that the customer calls back to the Company because they are not aware that they are going to contact Supplier 1.

Regarding the suppliers, there are also some exceptions. Supplier 1 typically responds as a part of the Company, but later in the process, especially for follow-up calls, they often present themselves as the supplier if needed to clarify who is doing what. However, not everyone is completely aligned. Supplier 1.1 claims that they most often present themselves as Supplier 1 and only sometimes as the Company when calling back to the customer. Supplier 2 seems to adhere more strictly to the white label process. Supplier 2.2 says, "We always present ourselves as [the Company]. We always do that," and the rest of the interviewees from Supplier 2 express a similar sentiment, stating that they only identify themselves as Supplier 2 if someone explicitly asks about it.

4.3 Sustaining Operational Continuity

The purpose of the OSS process is to assist the customer in the event of a breakdown and to minimize downtime and unnecessary complications. This section will go through how it works and how the different actors view the process. The sections "Customer's View of Sustaining Operational Continuity" and "Provider's View of Sustaining Operational Continuity" respectively aim to differentiate the results based on whether they reflect the perceptions of the customer or the provider offering the OSS.

4.3.1 Customer's View of Sustaining Operational Continuity

The customer has a lot to say about the various actions taken to keep them operational throughout the process. Some customers seem to have about the same expectations of the OSS abroad as they have in their home country, for example Customer 2 who expressed that an incident "should be resolved the same day, at least within 5-6 hours because that's how it is [the OSS] is marketed", while other customers have lower expectations abroad because they are aware that the Company is dependent on a sub-supplier for the specific country.

Overall, several customers have experienced a negative impact of the incident and the subsequent processes on their vacation. The common theme was that the process consumed a significant amount of their time and effort to resolve the problem, ultimately preventing them from enjoying their vacation. The experience as a whole is described by Customer 3 as that instead of quick help, he "received four days of vacation full of nervousness, constantly talking to the OSS-provider". Several customers also explained the concerns about their families including children and pets, for example due to the stressful and dangerous environment, a lot of uncertainties, worrying, losing vacation time, and sometimes significant heat. Some of the most common implications mentioned by the customers are summarized in Table 9. The different areas will be explained in more detail in the following sections.

Table 9. *A summary of some of the most common challenges or critical factors regarding sustaining operation continuity expressed by the customers.*

Area	Important factors	Respondents	Quotation
Permanent Solutions	The local workshop didn't prioritized the case	C1, C5, C7	"My case wasn't checked for two days" (C1)
	Competence of the local workshop	C2, C7	"The local workshop didn't find the real issue" (C7)
Towing	Long waiting time for the OSS-provider to arrive	C1, C3, C4, C5, C6,	"The towing truck came to pick us up. It was quite some time, at least in that situation, it felt like it took a very long time" (C6)
Temporary solutions	Was not satisfied with the temporary solution	C2, C3	"[Supplier 2] said they had already arranged a rental [product] once and that it was not possible to get another one according to the agreement" (C2), "They could not find a company that could give me a similar [product] [...], I needed a bigger one" (C3)

4.3.1.1 Workshop Prioritization

The workshops are a recurring factor that holds significant importance in the overall process affecting customer satisfaction. Multiple customers have expressed issues and frustrations regarding how the workshop handles cases, especially concerning prioritization. This is also supported by the survey since the question about workshop prioritization has the lowest score of all questions (see Figure 10 & Appendix B.2). From the interviews there have been several instances where customers describe how they have been waiting for several days, if not weeks, before the workshop conducts an initial diagnostic. Customer 5 describes it as the workshop "did not prioritize the case as they should have done to resolve it as soon as possible", and this is further supported by Customer 7 stating that "we struggled a lot with getting [the case] prioritized in the workshop". This has created frustration both towards the workshops, but also the Companys, for example Customer 5 saying that "[the Company] should have discussed and pressured the workshop". Except for the waiting time there are some customers describing the staff as unhelpful. For example, it was mentioned that the workshops were not at all service-oriented and that they were very nonchalant in their handling of the case. However, the survey result (see Figure 11) shows that a big majority of the customers are happy with the staff's behavior.

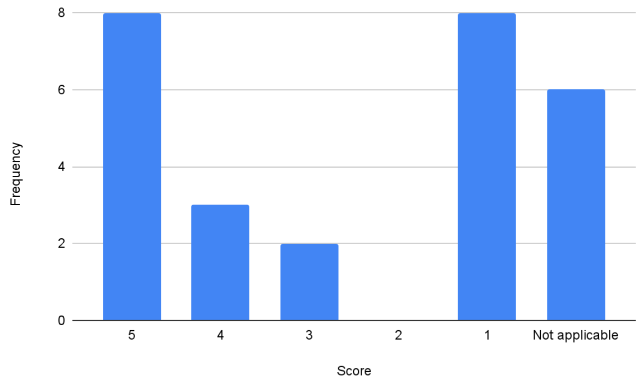

Figure 10. *I perceived that the workshop prioritized my case.*

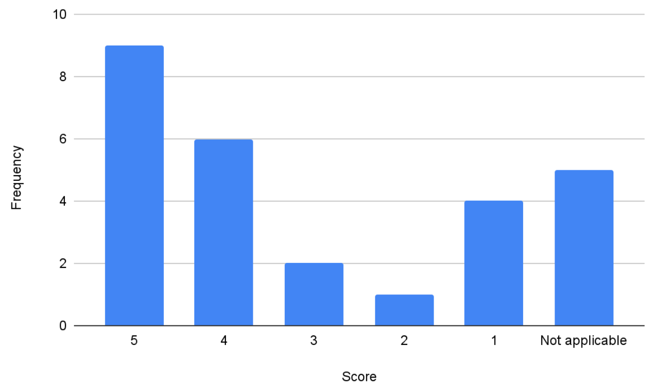

Figure 11. *I perceived the workshop staff as professional and helpful.*

4.3.1.2 Towing

In general, customers expressed dissatisfaction with the waiting times for the tower to arrive. While some customers described that they understand that it can take longer than in their home country, the overall opinion is still that it took too long considering the circumstances. Customer 6 said that "the towing truck came to pick us up. It was quite some time, at least in that situation, it felt like it took a very long time".

4.3.1.3 Temporary Solutions

Depending on the nature of the customer's issue, not all necessitate the temporary solutions provided by the company, as these are typically reserved for special occasions when waiting for a permanent solution would be too time-consuming. Those who received temporary solutions noted some sub-optimal aspects, such as Customer 2, who was frustrated that the coverage was insufficient to keep him operational, and Customer 3, who was dissatisfied with not receiving a replacement product of the same model as his original. Customers 6 and 7 were pleased with the solutions provided, except for minor logistical challenges that caused additional wasted time for Customer 7. Despite the problems some interviewees reported, the survey results indicate that most customers are satisfied with the solutions they received, as shown in Figure 12.

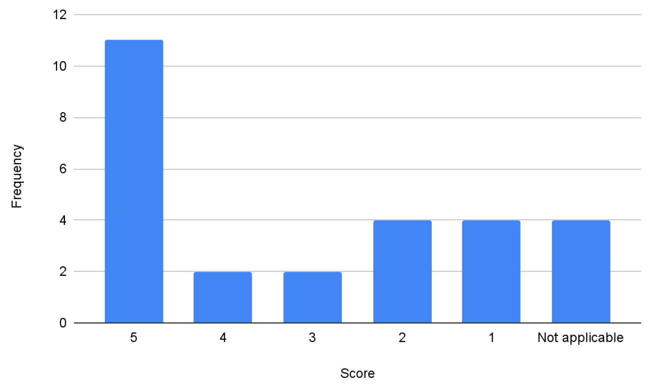

Figure 12. *I received the benefits I was entitled to according to the service agreement.*

4.3.2 Provider's View of Sustaining Operational Continuity

The nature of OSS abroad is characterized by customers facing challenging situations where they highly value their time, while the OSS-provider must solve complex problems under time pressure and supply chain dependencies. Interviewees from the provider side have identified several difficulties inherent in sustaining operational continuity for customers in such challenging situations, including high customer expectations and language barriers. A quote from Manager 1 represents the overall opinion relatively well, namely that "cross-border assistance is a nightmare". This is partly due to the complex nature of the process that requires coordination and fast decisions across multiple levels and generally there are a lot of different things that can go wrong since solutions need to be tailored to specific customer needs. Table 10 summarizes some of the most commonly mentioned problem areas, which will be described in more detail in the following sections.

Table 10. *A summary of some of the most common challenges or critical factors and who mentioned them.*

Area	Important factors	Respondents	Quotation
Workshop prioritization	The local workshop do not prioritize the cases	CCA1, M1, M2, SP2, SP4, SP5, S1.1, S1.4, S2.1, S2.3, S3, S1.4, S1	"It is not easy to deal with the retailers because they have their own customers with priority" (CCA1), "We see that they give priority to their own customers. If it is a foreign [product], it is not a priority for them" (SP5), "European markets prioritize their own customers" (S1.1), "If you're not a local customer, they have less reason to give you good service" (S2.1)
	Capacity issues	SP4, SP5, S1	"What we see during the holiday period is that the retailers abroad have less capacity because some of their people are also on holiday" (SP5)
	Spare parts issues	SP5, S3	[Down prioritization] in a combination with lack of spare parts, is a huge problem" (SP5)
Towing	Long waiting time for towers to arrive	S2.3, SP5	"It is often that they will take care of it later, and then the tow truck comes when it wants" (S2.3)
	Lack of information about location	W1, S3	"Sometimes it can be hard to know where the [product] was transported" (W1)
Temporary solutions	Finding a temporary solution that satisfy the customer	S1.3, S2.3	"As long as we keep the customer satisfied, and keep the cost down; it does not matter if we make a little mix to save the situation […], it becomes a puzzle that we need to lay" (S2.3), "sometimes you have to think that a little extra money is nothing when the alternative is that the customer does not get any help" (S1.3)

4.3.2.1 Workshop Prioritization

One common aspect of the process that many of the different actors have complaints about is the workshop. A majority of the interviewees have expressed some kind of issue regarding the time spent in the workshop, often indicating that the workshops do not do enough or prioritize as they should. The OSS process stipulates that workshops should conduct diagnostics within the first four hours of receiving the case, however, this appears to be rare. Most actors seem to agree that the actual time frame is significantly longer than that, often spanning multiple days at least. Some common complaints are that the workshops are not easy to deal with and that they often prioritize local customers. The biggest problems can be seen in the southern parts of Europe, where Italy, Spain and France are the most frequently mentioned trouble areas. There is somewhat of an understanding that it takes time, since there are so many cases during the summers, which can be indicated by CC Agent 1, stating that: "I understand that it is difficult to prioritize in the summer, overall, is our most difficult period with more work. So I understand that the retailers do not have enough technical people, but at least make a diagnosis at first". And the diagnostics part is agreed upon by Supplier 3, who says: "We would be very happy if we could ask the retailers to give the priority to make a diagnostic for each assistance case. Once we have that, we can understand if there are parts available or if they have the capacity in the workshop at that moment." However, Supplier 3, like many others, describes that the workshop often does not even bother to handle the cases.

But even though the prioritization is critical to get the customer going and save costs for the Company, no clear agreement or process is stipulated on how the workshop should prioritize. Neither do they have any incentives to handle the cases quickly. Salesperson 2 says "we do not have kind of a regulation or service level agreement or so with our retailers in Switzerland that says, hey, if someone from the Netherlands breaks down in Switzerland, make sure that you treat this customer with highest priority" and it looks the same for all markets that have been investigated. One exception was found in Sweden, where Process Owner 2 indicated a very clear process for handling OSS cases. However, during the interview with Workshop 1, who is responsible for this process, the interviewee clarified that the process was developed internally, and they had never received any instructions on handling OSS cases from the company. Generally, this seems to be an issue that there are no direct requirements for the workshops to act on. Salesperson 2 describes frustration about how the southern countries have made a business model out of the Nordic cases, that voles around them charging standing fees instead of actually helping the customers, since that is often easier and could even mean more money. This is also supported by the internal service logs.

Some internal actors describe that they have to contact colleges in other countries in order to get help to push the workshops. A common suggestion mentioned, from both salespersons and other actors is that the sales companies could talk to the retailer and try to push for the importance of good service for customers eligible for OSS. This could be done by explaining that it will improve customer experience and brand recognition. Salesperson 1 explained that they try to make the workshops to "jump out of the box and think about what they could do seeing the case from the customer's perspective".

4.3.2.2 Towing

To keep the customer operational, one common thing the service provider does is to move the product to another place. This is usually the first encounter with the physical service provider and is an important step for the OSS process. Some common complaints from customers that the providers perspective mentioned is that the towers are often delayed, that information about the towers position is lacking, and that the towers do not provide information about where the product is taken. More specifically, Supplier 2.3 said that a normal waiting time for the tower is one to two hours in Northern Europe, while it is between two to eight hours in southern Europe. The interviewee summarized it as: “it is often that they will take care of it later, and then the tow truck comes when it wants. This urgency that we have in Swedish society is not really present in European culture”. Furthermore, Workshop 1 explained that the waybill contains important information about where the product was towed from and contact details so that the workshop can contact the customer if there is insufficient documentation, and the customer should be able to call the workshop and ask how it is going. As long as we get the customer's details from the start, it sorts itself out.

To improve the collaboration with the towing trucks, Manager 3 mentioned a closer collaboration with the tow trucks could give the Company control more and get a better process. He also noted that this requires that their agents can have direct contact with the tow trucks, which requires that the tow trucks have advanced IT systems, which currently do not exist.

4.3.2.3 Temporary Solutions

When the customer has received on-site service, or when the workshop has started working, the customer often needs help with a temporary solution to sustain operational continuity. The providers (often Supplier 1 and 2) are responsible for arranging the temporary solutions and they generally believe that the current conditions for temporary solutions are effective.

Some success factors include understanding the customer's initial plan and striving to meet their needs. When customers request a combination of temporary solutions, managing these while adhering to the agreement becomes more challenging. In such cases, it is particularly important to analyze what the customer really needs to maintain operational continuity, even though the customer may have a different perspective on this. Supplier 2.3 explained their approach for more complex situations as: “as long as we keep the customer satisfied, we keep the cost down; it does not matter if we make a little mix to save the situation. We do not invent any new conditions or take any other costs outside. But it becomes a puzzle that we need to solve”. Regarding goodwill, Supplier 1.3 explained that “sometimes you have to think that a little extra money is nothing when the alternative is that the customer does not get any help”. From the Process Owner 1’s perspective, she recognized the challenge of balancing premium service and not wasting too much money on cases.

4.4 Image

Image is an important part of Grönroos (1984) model and has been examined during the interviews in this study. This section will cover how customers and providers view the corporate image and how it is influenced by the service process. The sections "Customer's View of Image" and "Provider View of Image" respectively aim to differentiate the results based on whether they reflect the perceptions of the customer or the provider offering the OSS.

4.4.1 Customer's View of Image

The interviewed customers expressed themselves differently regarding their view of the brand image after having experienced the OSS process. Some were not satisfied, for example customer 3 who said that: "I have very bad memories of my experience with the OSS, I think I was treated like a lower-class customer who wanted to receive help that he was not entitled to". He further explained that "I do not know if it was a problem with [the Company or Supplier 1]. I didn't know who I talked to but for me it does not matter. For me I have assistance from [the Company]". He felt that the Company did not think it was their problem since they had already transferred him to Supplier 1, but he still had assistance from the Company. Nevertheless, several customers were really satisfied, for example customer 4 who said that he was very satisfied. It met his expectations and he's not scared of taking a trip to Germany again. Customer 5 described his experience in relation to the brand image and said: "so I mean advertising-wise it was probably the best advertisement you could have gotten at least for me and for my friends and acquaintances that I've told this to."

4.4.2 Provider's View of Image

Many interviewees highlighted the brand image of the Company as an important aspect in relation to the OSS offered to the customers. The Company described the OSS as a premium service and that they have a premium brand that they have to maintain. Further, the Company wants to stand out a bit more as a company and recognize that many other companies offer OSS too, but the Company has offered the service for more than 10 years which is much longer than legal requirements and many other competitors. Also, the OSS is closely linked to safety, which is one of the Company's cornerstones. The OSS belongs to a larger department, which is strategically aimed at enhancing the corporate image by fostering a closer relationship with customers, directly influencing customer satisfaction by managing services in-house. However, since the OSS operations abroad are not insourced like the rest of the department's activities, the Company has less influence over customer contact and does not control what happens at the supplier's site for international assistance. There is a perception that it is challenging for Supplier 2 to create a premium experience for customers.

Nevertheless, Process owner 1 explained that there are customers who have claimed that next time they buy a product, it will be of the Company's brand again thanks to the service offered by the Company. On the other hand, the feeling of not getting help with the same urgency as the customer itself feels in the situation when they are eager to get to the destination can affect the Company's corporate image a lot. However, the goal is for the OSS to be a nice experience where you feel well taken care of and it will affect your future choices. Building on this, the OSS is not just a complex network of multiple stakeholders as shown in Table 11 below, but also a critical tool for fostering customer loyalty and enhancing the brand. Successful execution of the OSS and effective collaboration between the supplier and the Company are vital in ensuring a consistent and favorable brand image.

Table 11. *Areas of consideration and corresponding quotes related to brand image.*

Area of consideration	Illustrative quotes
The OSS is a complex process with several actors	"We know that the correlation is actually one to one. If you solve the customer's issue like this during the first contact, you have a satisfied customer. But if it is very complicated, then it is difficult to have a satisfied customer in the end. The probability decreases." (Manager 2)
OSS as a tool to build customer loyalty	"If you can handle a critical situation, you've gained a loyal customer […] but it is difficult to deliver with a premium service, it is easy to say that you should have a premium service but harder to deliver" (Manager 3)
A successful OSS strengthens the brand image	"I just can imagine from my point of view, if I would be in the role of a customer that had a breakdown, I would expect maybe when it comes to a breakdown and everything goes well and it will be handled. Great. Probably have a positive image of [the Company] support, more positive image, […] that's what I could imagine." (Salesperson 3)
Collaboration between the supplier and the Company to ensure they present a unified brand image.	"I think quality and customer needs to be a starting point. What is it like? To be [the brand]?[...], it is not the same as any other brand. You have some specifications from the Company. Safety goes first. The history, the premium part. We sat together with a team of important persons at our site that are linked to the assistance. [...] and we received some information, guys as well on who is [the Company] and what does the Company stand for?" (Supplier 3)

5. Analysis

In this chapter the analysis of the empirical results is presented. The empirical findings regarding the OSS process are analyzed through the conceptual framework. The chapter starts with a focus on the technical quality in relation to the service steps as well as value spheres (Grönroos, 1984). Thereafter the functional quality is assessed in the same way. The chapter ends with an analysis of Image, a core component from the framework of Grönroos (1984) that the empirical results have shown to be an important factor for perceived quality of OSS.

5.1 Technical Quality

In the framework (See Figure 13), the technical quality is represented by two dimensions, tangibility and reliability (two of the five dimensions for service quality originally from Parasuraman et al. (1988)). Tangibility in the context of the OSS process concerns the physical and visible aspects of the service that can be observed and experienced by customers. This involves the appearance of the towing staff, workshop staff and the tangible quality of the solutions provided. Reliability is the ability of employees to perform the promised service accurately (Parasuraman et al., 1988). The impact of the service steps (to the very left) and the involved actors are mapped against each of the two dimensions. The two dimensions will be discussed in the following sections.

Value creation in the OSS process		Customer Satisfaction				
		Technical Quality - Problem solving meets expectations				
Step (See Figure 4)	Sphere/involved actors	Tangibility	Reliability			
First call	Customer & the Company		X			
Supplier takes over the case	Customer & supplier		X			
Coordinate with sub-supplier	Supplier & sub-supplier					
Arranges solution	Customer, supplier & sub-supplier		X			
Communicates with customer	Customer & supplier		X			
On-site service performed	Customer, sub-supplier	X	X			
Arranging temporary solution	Customer, supplier, sub-supplier	X	X			
Workshop provides service	Customer, workshop, insurance, supplier	X	X			
Reimbursement management	Customer, supplier, insurance	X	X			

Figure 13. *The framework shows the different service steps, the involved actors in each step, and each step's impact on customer satisfaction through the dimensions from the technical quality. (Inspired by Grönroos, 1984; Grönroos & Voima, 2013; Parasuraman et al., 1988).*

5.1.1 Tangibility

The majority of the OSS process steps involve intangible elements like communication and coordination. While Edgett and Parkinson (1993) noted intangibility as a service characteristic that implies the inability to physically touch a service, the OSS process does encompass certain tangible elements, such as the temporary and permanent solutions integrated into it. In SD-logic service emerges as the paramount aspect of the exchange process, and when goods are utilized, they serve as aids to the service-provision process (Vargo & Lusch, 2008), which supports the result found in the study. This means that even for services, it is relevant to also consider the tangible aspects that sometimes are included in delivering the OSS. The combination of service and product within this specific process makes it complex and presents challenges in management. One such example that emerged from the interviews is the work carried out by workshops. Some stakeholders have observed that workshops abroad may sometimes lack the competence and experience to handle certain types of cases, leading to delays and sometimes errors. Naturally, this aspect also has the potential to affect customer satisfaction negatively.

The service outcomes are the results for the customer and their experience of the service process, meaning that the customer's view will impact the result (Johnston et al., 2012). The outcomes, often referred to as benefits by Johnston et al (2012), are affected by the temporary solutions offered by the company's OSS process. Empirical findings from interviews with customers affirm that it is these benefits that instill a sense of value or perceived gain from the provided service just as described by Johnston et al. (2012). The empirical results also show the level of the customer's perceived gain has been shown to make a big impact on the customer satisfaction and is therefore important for the provider to focus on. Another type of service outcome described by Johnston et al. (2012) is products, which is the functional output of the service provided. Some customers have not received acceptable solutions and the suppliers express that it is sometimes impossible due to a lack of available solutions due to high demand and other limitations. No matter the reason behind it, the lack of satisfactory temporary solutions means that the technical quality is not meeting the customer's expectations, which causes the perception of service quality to be affected negatively (Grönroos 1984).

5.1.2 Reliability

The empirical findings highlight the importance of reliability, meaning that issues such as long waiting times, inconsistency in the information provided to customers, unclear coverage, and lack of follow-up on updates could have a big impact on technical quality, and consequently customer satisfaction. Almost every step, from the initial call to the service provider, until the customer receives reimbursement for costs caused by the breakdown, will be important to fulfill this aspect, as illustrated in the framework (see Figure 13), confirming that reliability is a key dimension affecting customer's view on service quality (Parasuraman et al., 1988).

In the studied OSS process, problematic areas are often recognized by both providers and customers. This acknowledgment suggests that providers generally understand customer expectations accurately. However, potential issues may arise from a gap between the company's perception of customer expectations and the actual service quality specifications (Bergman & Klefsjö, 2010). This discrepancy is intensified because agreements with suppliers do not clearly include requirements and KPIs for the aforementioned reliability aspects. Additionally, gap five - between customer expectations and perceived service - where customers express dissatisfaction due to unmet expectations (Bergman & Klefsjö, 2010), may also contribute to dissatisfaction. This is particularly the case when customer expectations exceed their perceptions of the service during and after a stressful breakdown.

Customers and providers often highlight the issue of customers abroad being downprioritized at service workshops, which affects reliability negatively. Despite some customers expecting the Company to intervene and prioritize their case, providers emphasize that the workshop operates independently from the main OSS process which puts more responsibility on the customer involvement. This is problematic since the view of the role of the customer differs from the customer’s and provider’s perspective, which makes the co-creations process less likely to satisfy the customer as described by Verley (2015) because the process is not tailored after the customer needs, for example the degree of personal interaction (Johnston et al., 2012) or expectations. The mismatches between expectations and the performance from some of the workshops and suppliers seems to cause the technical quality dimension to be affected negatively in the service steps related to the workshop, leading to dissatisfaction as shown in the empirical findings. Thus, this confirms Parasuraman et al.'s (1988) statement that reliability is a key dimension affecting customers' views on service quality.

In the OSS process, communication plays a significant role in value co-creation. Companies and customers contribute value through their resources and participation in the process (Grönroos & Voima, 2013; Tueanrat et al., 2021). In the case study, it is indicated that the suppliers assert that they make efforts to communicate frequently with customers, such as providing updates on the next steps, offering regular progress reports, and inquiring if further support is needed. However, some customers perceive that they do not receive as many updates as they would prefer. This often leads them to request updates themselves, which, in turn, make them feel like they are one step ahead of the Company, making their role in the process unclear which potentially could cause dissatisfaction (Verley, 2015). This could potentially exemplify gap number three, indicating a disparity between the OSS-provider’s quality specifications and the actual service delivery. For instance, if the service agents fail to provide updates as regularly as they should, possibly due to time constraints or human errors. However, the issue might stem from a discrepancy between what the OSS-provider perceives as customer expectations, such as frequent updates, and what the customer actually expects, which could include even more regular updates and proactive communication. This suggests gap number one, reflecting the difference between the customer’s expectations and the company’s perception of those expectations (Bergman & Klefsjö, 2010). Determining whether the root causes of customer dissatisfaction lie more with gap number one or gap number three is challenging to ascertain.

Another aspect of gap number three (Bergman & Klefsjö, 2010) is that the OSS quality often varies because of the difficulty in standardizing services, a situation largely impacted by the employees tasked with service delivery (Parasuraman et al., 1985). In the context of workshop prioritization, this inconsistency in service quality can be traced back to employees' performance, despite existing guidelines. The exclusion of international customers from the prioritization process and the favoritism towards local customers illustrate the disconnect between service delivery and the service specifications. This variability could be attributed to several factors, including the employees' exclusion from the service design process or insufficient teamwork (Parasuraman et al., 1985).

Bergman and Klefsjö (2010) described that gap number four is the difference between service delivery and external communications to customers about service delivery. The empirical results indicate that this type of gap exists. One example is the long waiting times for assistance that multiple customers have experienced. The expectations, potentially influenced by the promises and marketing made by the Company, seem to suggest that a breakdown should be resolved faster than it typically is, highlighting a potential gap between what the company promises its customers and what is actually delivered, as described by Parasuraman et al. (1985). The gap often results from external communication that influences customers' expectations about a service and their perceptions of the service that has been provided (Parasuraman et al., 1985). Further, the risk of setting expectations too high might result in difficulties meeting the expectations considering that the service is delivered by individuals, whose actions can vary (Bergman & Klefsjö, 2010). There might be an issue with expectations, as the service is marketed as a premium OSS to reflect the brand image. However, the complexity of the OSS process makes it difficult to meet these expectations for customers abroad. If this discrepancy affects many customers, the lower technical quality could lead to a decline in overall service quality because of the low reliability of some aspects of the service.

5.2 Functional Quality

In the next part of the framework (See Figure 14), the functional quality is represented by three dimensions, responsiveness, empathy, and assurance (three of the five dimensions for service quality originally from Parasuraman et al. (1988)). Responsiveness is the willingness of employees to provide prompt service. Assurance is the knowledge and courtesy of employees and their ability to instill trust and confidence in customers while Empathy concerns the care and individualized attention given to customers (Parasuraman et al., 1988). The impact of the service steps (to the very left) and the involved actors are mapped against each of the three dimensions. The three dimensions will be discussed in the following sections.

Value creation in the OSS process		Customer Satisfaction				
				Functional Quality - How the service provided is perceived by the customer		
Step	Sphere/involved actors			Responsiveness	Empathy	Assurance
First call	Customer & the Company			X	X	X
Supplier takes over the case	Customer & supplier			X	X	X
Coordinate with sub-supplier	Supplier & sub-supplier					
Arranges solution	Customer, supplier & sub-supplier			X		
Communicates with customer	Customer & supplier			X	X	X
On-site service performed	Customer, sub-supplier			X		
Arranging temporary solution	Customer, supplier, sub-supplier			X		
Workshop provides service	Customer, workshop, insurance, supplier			X		
Reimbursement management	Customer, supplier, insurance				X	

Figure 14. *The framework shows the different service steps, the involved actors in each step, and each step's impact on customer satisfaction through the dimensions from the functional quality. (Inspired by Grönroos, 1984; Grönroos & Voima, 2013; Parasuraman et al., 1988).*

5.2.1 Responsiveness

Nearly all customers in the study, along with various providers, express concerns about the process's slow progression. The workshop's responsiveness stands out as a significant issue, with a majority of customers and providers highlighting the prioritization and service time as key challenges. It is even more problematic since the service provided at the workshop is not considered to be a real part of the OSS process. However, as per Tueanrat et al. (2021), all touchpoints from the beginning to the end of the service delivery process must communicate consistent values to support the formation of brand associations. This suggests that if the customer perceives the process as including the workshop, it will not matter how the company defines it, the Company will still be influenced by the workshop's responsiveness to the customer. This is also supported by Maechler et al. (2016), who describes that it is important to look at the whole customer journey and ensure customer experience is seamless and consistent across all points of interaction, which at the moment is not the case with the workshops. Similarly, Payne et al. (2008) describe that understanding the different steps and their impact on the customer journey is crucial and that integrating them strategically within the broader business processes could contribute positively to the overall service offered to customers.

Overall, it can be concluded that all steps involving communication with the customer have a high dependency on the provider's responsiveness. Since the communication stretches over multiple stages and providers, effective collaboration is crucial for a fast, consistent, and seamless customer experience (Maechler et al., 2016). Furthermore, Maecheler et al. (2016), describes that it is important to have a holistic approach to customer experience management by considering the customer's end-to-end journey. In the OSS process this is particularly important since the customers often are in a vulnerable and time critical stage; it will have a huge impact if the agents are responsive or not. Particularly for the first two contacts, responsiveness is crucial because customers are often in urgent situations, and receiving timely assistance could be important. In this phase, the providers generally meet customer expectations quite well, as evident from the survey results (Q2 and Q3). The Company also sets Key Performance Indicators (KPIs), for example regarding response time, for this step and evaluates its suppliers accordingly. Upon examination, the responsiveness appears to be satisfactory. However, the subsequent steps, which involves coordination and the actual provision of on-site service, is equally important for ensuring the situation is secured. Unfortunately, in this aspect, the score is not as high, with multiple actors and customers experiencing very long lead times for both updates and solutions. Maechler et al. (2016) emphasize the importance of evaluating processes by measuring customer satisfaction across the entire journey, rather than focusing solely on individual touchpoints. This approach prevents companies from being misled by the appearance of a better process than it actually is, which is somewhat the case when only considering the existing KPIs, with a strong focus on response time, thus indicating that the company's KPIs currently are not fully capturing the performance across the entire customer journey.

Regarding the step of arranging temporary solutions, there are several customer complaints about it being time-consuming. This step involves nearly every actor, emphasizing the importance of communication and responsiveness from all parties involved. The co-creation emerges from the collaborative process and interrelationship among members in this service ecosystem as described by Tueanrat et al. (2021). The customer needs to provide input, the supplier may need to consult their sub-supplier and the company to determine feasibility. As described by Tax et al. (2013) it is important to understand and coordinate all the stakeholders within the customer journey to effectively satisfy the customers to create value. This is noteworthy because there have been multiple instances when stakeholders have expressed that they do not know how the other actors work, or sometimes even not who they are. This means that, with all these steps and and sometimes limited knowledge about other stakeholders, it becomes challenging for the supplier, who is responsible for providing the customer with answers, to offer prompt solutions.

The suppliers are aware of the issue of long lead times, and their primary solution is to manage expectations by explaining to the customer that the service process may take a considerable amount of time. This is crucial because customer expectations must align with the eventual service delivery (Grönroos, 1998). Further, the suppliers sometimes explain to the customer that the OSS will probably be faster if they manage some of the solutions themselves. However, customers' experience of this approach will depend on the CP-readiness, as described by Dong et al. (2015), since some customers are happy to be part of the process and their involvement may therefore enhance their experience, while others might have a less satisfactory experience. It will also depend on whether the role of the customer is clear, as described by Verleye (2015). If the customer is informed at the outset about what to do, the experience will likely be much better compared to other cases observed in the study where the customer has to act simply because they do not receive any response from the providers.

5.2.2 Empathy

Johnston et al. (2012) emphasized the significance of emotions as a key component of service outcomes experienced by customers throughout the service process. Empirical findings, particularly from customer interviews, affirm the importance of emotions in OSS experiences. Specifically, the feeling of being cared for emerges as particularly crucial. During both initial contacts with the company and interactions with suppliers it is imperative for suppliers to listen attentively, and not doing so risks affecting the functional quality negatively, ultimately decreasing the customer satisfaction. To be empathetic towards customers, the providers need to understand and adapt to the specific customer's preferences and needs (Prahalad & Ramaswamy, 2004; Johnston et al., 2012) because customers introduce variation when participating in service creation, which often makes standardization ineffective (Gremyr et al., 2020). There is not one template for how the service agents can make the customer feel cared for, especially considering the varying personalities of customers (Gremyr et al., 2020; Johnston et al., 2012), as highlighted in the empirical results of this study.

Moreover, not only do customer personalities vary, but so does the environment. The execution of on-site services and its adaptation to specific circumstances is noteworthy, as Lin and Liang (2011) suggest that the service environment significantly shapes customer perceptions and satisfaction. Factors like temperature, occasionally problematic, are cited as examples supported by empirical evidence. Given that many environmental factors in OSS cannot be directly controlled, understanding, and addressing them to enhance the customer experience are crucial. Unique circumstances, such as the weather, the nature of the breakdown, and the distance to the closest workshop, may necessitate extra care or specialized solutions. Therefore, suppliers emphasize the importance of gathering comprehensive information about the customer's case during the initial call to be able to offer appropriate solutions.

Gathering as much information as possible has also been pointed out as crucial for customizing the OSS process to suit individual needs, including preferences such as how the customer wishes to be contacted or updated, and the level of involvement they desire. For instance, clarifying the customers' expectations regarding their involvement could be crucial for the end result, depending on their readiness for co-production (CP). According to Dong et al. (2015), customers with high CP readiness typically desire involvement in the process, resulting in better outcomes. Conversely, customers with low CP readiness may experience decreased satisfaction and outcomes if they are overly involved. This aspect is intriguing, as some customers have expressed satisfaction with contributing to solutions themselves, while others are dissatisfied because they did not anticipate being involved at all.

If customers receive additional support and coverage of costs after an initially problematic service process, their dissatisfaction can be transformed into satisfaction. This observation resonates with the findings of Tax and Brown (1998), who emphasized the transformative potential of effectively managing service recovery. By addressing service failures adeptly, companies can not only resolve dissatisfaction but also elevate satisfaction levels beyond those prior to the occurrence of errors. In the case study, although the initial service fell short of

Customer 5's expectations, the subsequent provision of assistance and financial coverage for repatriation resulted in significantly heightened satisfaction and building brand loyalty, confirming what Tax and Brown (1998) explained. Moreover, the study reinforces the importance stressed by Tueanrat et al. (2021) regarding the continuous monitoring and prompt addressing of negative experiences. Customer 5's case illustrates how proactive service recovery efforts not only resolve crises but also leave a lasting impression on customers, building brand loyalty and impacting the empathy dimension in Figure 14.

5.2.3 Assurance

Assurance involves the employees' knowledge, courtesy, and ability to instill trust and confidence in customers (Parasuraman et al., 1988), which means that the service steps with communication between customer and provider become crucial. The nature of the service, which involves assisting customers with breakdowns of what are supposed to be high-quality products, creates a starting point where customers are in need of assurance from the service provider. The first two steps in the OSS have been identified as important, for example, it is crucial for service agents to collect enough information during the first call to ensure that the subsequent process runs smoothly and that the solutions provided are suitable, considering customer specific needs. During these steps it is important that the agents create a sense of credibility by being transparent and clear about the OSS coverage and its conditions.

Since most of the OSS is outsourced, it can be concluded that the supplier’s communication with the customer is an important aspect where the assurance dimension is significantly impacted. Partner-owned touchpoints, as described by Lemon & Verhoef (2016), impact the customer's experience, even though the partner-owned touchpoints are not entirely within the Company’s control. As described by Kranzbühler et al. (2019), outsourcing critical touchpoints could be a way to protect the brand from bad customer experiences, however since the Company uses white-label for its suppliers that possible advantage disappears. In this case, the Company see more of the negative aspect of the outsourcing as described by Tax et al. (2013) and Kranzbühler et al. (2019), namely that it leads to loss of control over the customer experience and the third-party providers adds complexity to operations which makes it hard to hold consistent quality. There are stipulated contracts and processes outlining how the suppliers should handle the process, however, many different stakeholders agree that the further the process is from the company, the more challenging it becomes to communicate the values that the company wants to achieve. It also makes it more difficult to measure the quality and to work with continuous improvements which are described as crucial factors for customer experience management by Maechler et al. (2016) and Hogan et al. (2005).

Proactive communication is an important factor brought up by several interviewees, and the goal from the suppliers is that the customer should be informed and updated about the following service steps, creating a feeling that the provider is a step ahead of the customer. However, despite the suppliers’ efforts, there appears to be a gap either between customer expectations and the service experienced, like gap number five (Bergman & Klefsjö, 2010), or simply unstable service quality provided by the suppliers. The gap could be connected to the complex nature of the OSS and the increased demand during the summer complicate achieving a high assurance. It could also be influenced by factors such as inexperienced summer staff, unrealistic customer expectations, or a deeper problem related to lacking the proper tools to effectively handle the service ecosystem, which is crucial when outsourcing touchpoints (Tueanrat et al., 2021). At the moment, the company lacks measurements of the services, which makes tracking and improving the process very difficult (Hogan et al., 2005; Maechler et al., 2016).

5.2.3.1 Language and Culture

Another aspect of establishing a sense of assurance during the service process is the language of communication. Overall, the language barrier, recognized by both customers and providers, complicates communication among different actors, sometimes leading to important information being significantly delayed, misinterpreted, or even ignored. Additionally, cultural differences between customers and local sub-suppliers have been reported to cause dissatisfaction. This could be connected to the theories of Tax et al. (2013) and Kranzbühler et al. (2019), specifically emphasizing that managing relationships with third-party providers adds complexity to operations, particularly in maintaining consistent service quality. While these studies do not explicitly mention cultural differences, the empirical evidence gathered suggests that both cultural aspects and outsourcing add to the complexity due to differing views on time and overall sense of service. In terms of gaps, it is similar to number five (Bergman & Klefsjö, 2010), because the dissatisfaction arises because of a difference between customer expectation and customer perception. Nevertheless, it is a specific type of reason for the gap, namely that the expectations formed in another country creates a gap between the customer perception of the OSS process. A customer from the Nordic region is expecting the same level of service and waiting time as in their home country, and when this cannot be reached in southern Europe, dissatisfaction arises. This means that the expectations that the gap model by Bergman & Klefsjö (2010) proposed can also be formed by the specific cultural differences between the country of origin and the country where customers experience the service, which ultimately negatively affect the perception of quality in the functional quality area (Grönroos, 1984).

5.3 Image

Grönroos (1984) emphasizes that the corporate image is significantly shaped by the technical and functional quality of its services, which are affected by the experiences described by the Company's customers and stakeholders. The functional and technical quality are affected by customers' expectations, which is why it is important for the provider to manage these expectations. As Robledo (2001) pointed out, when a company encounters customers with excessively high expectations, it must address expectations to bring them to a reasonable level. This was precisely what was found in the empirical results: the company acknowledges the importance of managing customer expectations and recognizes that it must be actively addressed, especially when performance cannot be influenced. Bateson (1989) explained that if a company has reason to believe that initial expectations are unrealistically it should modify these expectations to fit more closely what can be delivered, similar to what the Company explained that the agents often inform the customer about longer processing times compared to domestic cases due to the involvement of multiple actors and subcontractors.

Managing expectations might involve tailoring approaches to specific customers, such as when employees recognize unrealistic expectations during initial interactions and use their discretion to independently decide the best course of action (Coye, 2004). This confirms the overall perspective that the initial call and the skills of individual service agents are crucial for creating a good start with realistic expectations for the subsequent service process.

According to Grönroos (1984), negative service experiences can profoundly impact the corporate image because the service interaction itself forms a critical component of the customer's perception of the brand. As noted by Kang and James (2004), functional quality has a stronger influence on image and overall service quality compared to technical quality, which suggests that how the service is delivered is more important than the quality of the service itself. This underscores a disconnect between the Company's brand promise and the actual service experience some customers encounter, particularly when issues arise involving third-party suppliers.

Kranzbühler et al. (2019) describes that companies can outsource certain customer touchpoints - particularly those identified as inherently dissatisfying to enhance customer satisfaction and overall brand perception. However, this strategy requires careful consideration of which touchpoints to outsource, which third-party brand to partner with, and how the outsourcing arrangement is presented to customers. Effective management of these elements is crucial to ensure that the outsourcing strategy aligns with customer expectations and enhances their overall perception of the brand (Kranzbühler et al., 2019). The Company's use of a white-label service process means that every customer touchpoint, negative or positive, is attributed to the Company, regardless of if it is actually the Company or the supplier that interacts with the customer. This approach has the disadvantage that it is not possible to reduce the negative impact of certain touchpoints on brand evaluations by allowing firms to dissociate from failures and attribute issues to the third-party service provider instead of the focal brand (Kranzbühler et al., 2019). As has been described in the empirical results, many issues and customer dissatisfaction stem from suppliers, and this confirms what Tax et al. (2013) and Kranzbühler et al. (2019) said that managing relationships with third-party providers adds complexity to operations, particularly in maintaining consistent service quality (Kranzbühler et al., 2019).

On the other hand, the positive experiences, created by the suppliers, can enhance customer perceptions of the Company (Kranzbühler et al., 2019), leveraging the strength of the partner to boost the Company brand's value. However, the overall finding is that dissatisfaction almost always is caused by the suppliers, which is expected given that everything except the initial call is outsourced. As Kranzbühler et al. (2019) outlined, when services that are less satisfactory are outsourced and explicitly branded as such, customers tend to attribute any dissatisfaction to the third party rather than the focal brand, thus maintaining a more favorable view of the primary brand. This is not the Company's current approach, which is not optimal for maintaining the premium brand image (Kranzbühler et al., 2019).

As a way to mitigate the above described challenges, Lee et al. (2018) describe how supplier development strategies can improve supplier performance and found that by investing in supplier development, companies can indirectly enhance their brand image and operational performance through improved supplier quality and reliability. This is similar to what Supplier 3 mentioned that they were doing together with the Company to ensure that the supplier and the Company have a clear view together on what the service should deliver to represent the image of the Company. This approach can be particularly effective in mitigating risks associated with poor supplier performance (Lee et al., 2018). However, such a close and alignment-focused collaboration does not exist between the Company and Supplier 1 and 2, indicating an improvement area.

Genereally, the Company recognizes the necessity of maintaining a high standard of service to uphold its premium brand image. This aligns with Grönroos' (1988) argument that the corporate image should reflect the actual technical and functional quality of the services offered. Ensuring consistency in service quality, both technically and functionally, across all customer touchpoints is essential to maintaining a strong corporate image and fulfilling the brand's premium promise. The challenges with an international outsourced OSS highlighted in this study, underscore the complexities of consistently delivering this quality with multiple suppliers (Tax et al., 2013; Kranzbühler et al., 2019) across global markets. The inconsistencies can misalign with customer expectations shaped by the Company’s advertised brand promises, potentially leading to customer dissatisfaction.

Despite these challenges, there is a consensus among company managers that while OSS is not a primary selling point, effective management of critical situations through this service can significantly boost customer loyalty and reinforce a positive brand image. The Company's assertion that a positive experience can foster customer loyalty aligns with Lemon and Verhoef's (2016) concept of the loyalty loop. This model suggests that the post-purchase stage can either strengthen customer loyalty through repurchase and continued engagement or lead the customer back to the pre-purchase phase to consider alternative options (Lemon & Verhoef, 2016). The overall opinion is that an effective management of the OSS process can strengthen customer loyalty through repurchase.

5.4 Applied Conceptual Framework

The Conceptual Framework (see Figure 15) show which service steps contribute to the service quality dimensions respectively. Zeithaml and Bitner (2000) describe that the dimension of reliability has been consistently shown to be the most important dimension in service quality. In this study, when counting the service steps affecting the five dimensions, we observe that reliability emerges as the most prevalent service quality dimension, with eight out of nine service steps potentially impacting it. This is followed by responsiveness, with tangibility, empathy, and assurance being similarly common occurrences. The frequency does not determine the importance for the customer, but indicates that for an OSS, there are many different service steps that influence the dimension of reliability, indicating that a consistent performance across touchpoints is important.

Value creation in the OSS process		Customer Satisfaction				
		Technical Quality - Problem solving meets expectations		Functional Quality - How the service provided is perceived by the customer		
Step	Involved actors	Tangibility	Reliability	Responsiveness	Empathy	Assurance
First call	Customer & the Company		X	X	X	X
Supplier takes over the case	Customer & supplier		X	X	X	X
Coordinate with sub-supplier	Supplier & sub-supplier					
Arranges solution	Customer, supplier & sub-supplier		X	X		
Communicates with customer	Customer & supplier		X	X	X	X
On-site service performed	Customer, sub-supplier	X	X	X		
Arranging temporary solution	Customer, supplier, sub-supplier	X	X	X		
Workshop provides service	Customer, workshop, insurance, supplier	X	X	X		
Reimbursement management	Customer, supplier, insurance	X	X		X	

Figure 15. *The framework shows the different service steps, the involved actors in each step, and each step's impact on customer satisfaction through either technical or functional service quality. (Inspired by Grönroos, 1984; Grönroos & Voima, 2013; Parasuraman et al., 1988).*

The importance of reliability and responsiveness might have a connection to the fact that most steps involve multiple stakeholders, pushing for the importance of efficient, trustworthy, and fast communication. All the different actors involved also mean that an efficient service ecosystem is crucial for the process and since many of the steps/touchpoints are not owned by the company it is crucial that the supplier understands the values that the Company wants to deliver. Additionally, some steps will have an impact on the customer satisfaction even though they do not directly impact any of the quality dimensions in Figure 15. Looking at the step of sub-supplier coordination for example, customers are not directly involved. However, it still significantly influences the responsiveness of the process, as customers are indirectly affected by the collaboration between the supplier and sub-supplier. Another example is when the supplier or sub-supplier arranges a solution, which may not directly influence tangibility. However, the solution provided to the customer subsequently will undoubtedly influence their perception of the tangibility dimension, for example when the customer uses the replacement product.

6. Discussion

The following two sections will include a discussion structured around the research questions: *What are the critical factors within the OSS process of manufacturers that significantly influence customer satisfaction and experience?* And the second research question, *how can the steps shaping customer satisfaction in a multi-actor OSS process be identified?*

6.1 Critical Factors Influencing Customer Satisfaction in the OSS

Since the OSS process consists of multiple touchpoints and actors from different organizations and backgrounds, there are a lot of different factors that need to be taken into consideration to successfully provide a service that satisfies the customer's experience. Parasuraman's (1988) five dimensions of service quality is considered to cover the different dimensions that affect customer satisfaction. This study confirms the importance of these five dimensions also for an OSS process. See Table 12 below for an overview of the relevant aspects of each dimension.

Table 12. *Overview of the relevant aspects for each of the five dimensions.*

Dimension	**Important factors**
Tangibility	The inclusion of tangible components, such as temporary and permanent solutions, is essential for service provision. The limited access to replacement products and the quality of work performed by workshops are two important aspects that directly impact customer satisfaction.
Reliability	Issues with reliability in on-site service, such as long waiting times, inconsistent information provided to customers, and a lack of follow-up on updates, negatively affect the technical quality throughout the service process, from initial contact to reimbursement for breakdown costs. These issues are exemplified by the prioritization in the workshop and are influenced by factors such as employee performance and the increased responsibility on customer involvement resulting from the customer's independent contact with the workshop.
Responsiveness	Slow progression and prolonged service times lead to customer dissatisfaction and additional costs. Effective collaboration across various stages and providers is necessary to ensure a fast, consistent, and seamless customer experience, as responsiveness at every point of interaction directly influences customer perception and the overall effectiveness of the service provided.
Assurance	Assurance in on-site service (OSS) depends on service agents' ability to show expertise and courtesy, particularly important during initial interactions where collecting accurate information is key to customizing solutions and setting clear expectations about service coverage. However, challenges with outsourced touchpoints lead to a loss of control over service consistency and quality, as seen in customer feedback that highlights significant gaps in proactive communication and updates, reducing trust and confidence in the OSS.
Empathy	Empathy in on-site service (OSS) experiences is crucial, as customers often in vulnerable states value feeling cared for and understood by providers, which enhances trust and satisfaction. Service providers must attentively listen and adapt to individual customer needs and environmental factors, such as weather or specific breakdown circumstances, to tailor the service effectively and improve the overall customer experience.

Common across the different steps in the OSS is the existence of customer expectations regarding how the process should be handled. These expectations are influenced by various factors, such as the customer's previous experience with the service, whether they are aware of the terms and conditions, or the Company's marketing. The latter part opens for a potential gap between service delivery and external communications to customers about service delivery, since highly set expectations will make it more difficult to deliver accordingly. However, one of the main contributors to the OSS expectations is the Company's image. The Company aims to position itself as a premium brand with a strong emphasis on safety. As a result, most customers expect a premium experience from the OSS that is reliable. The case study has indicated that the customer expectations sometimes are not met, perhaps due to high expectations because of the brand image, indicating a gap between customer expectations and perceived service (Bergman & Klefsjö, 2010).

Even though the OSS is primarily managed by the supplier, the customers' expectations on the Company are inevitably transferred to the supplier and even to sub-suppliers. In the latter case, the sub-supplier might not even be aware of the Company's identity and even less their values. This finding aligns with Tueanrat et al. (2021), who emphasize the importance of all service touchpoints, whether owned by the brand or not, in communicating consistent values and supporting the brand's foundation. This is confirmed in the current study, noting that the interviewed customers expressed that they do not care about the specific company involved; instead, it is the Company that owns the OSS that sets their expectations. This finding challenges some of Kranzbühler et al.'s (2019) statements, which suggest that companies can somewhat protect themselves from a poor customer experience by outsourcing critical touchpoints. Our findings suggest that customer expectations remain unchanged even when the service is handled by the supplier, and that potential bad experiences and criticism are directed towards the Company, even when customers are aware that it is handled by a third party. This implies that, in order to effectively satisfy the customer, maintain a consistent quality level, and safeguard the Company's image, all steps must be carefully managed to ensure they align with the Company's standards. To accomplish this, service ecosystem and customer journey management are crucial.

All the different touchpoints have the potential to contribute to the overall satisfaction or dissatisfaction of the process. However, as described by Maechler et al. (2016), solely focusing on one touchpoint to try to manage it might risk missing out on the bigger picture and still not be able to significantly improve the overall process for the customer. Instead, both Maechler et al. (2016) and Payne et al. (2008) emphasize the importance of considering the entire customer journey. This is particularly crucial for the OSS process, given the interconnected nature of its many steps and the special nature of services (see the descriptions of IHIP characteristics specific for the OSS in Table 13). Neglecting one step could potentially have a huge impact on other touchpoints as well as the overall process. However, since every step or touchpoint has the potential to influence the experience, they also need to be carefully considered and managed, as emphasized by Hogan et al. (2005), who also underscores the importance of allocating resources to the most critical touchpoints.

Table 13. *Service characteristics, adapted from (Gremyr et al., 2020; Parasuraman, 1985; Edgett & Parkinson, 1993) and the specific characteristics for the OSS described based on the empirical findings.*

Characteristic	**Description**	**Specific characteristic for OSS derived in the study**
Inseparability	Services cannot be separated from their providers.	The service is provided at the location of the breakdown, making it inseparable from the setting in which it is required. The presence of the customer is essential as the service directly involves the customer's product.
Heterogeneity	Quality of services depends on who provides them and when, where, and how.	Each service instance can vary significantly based on the product's condition, location, time of day, and even the specific needs of the customer.
Intangibility	Services cannot be seen, tasted, felt, heard or smelled before purchase.	While the immediate results (like a repaired or towed product) are visible, the quality and effectiveness of the service are often perceived and evaluated only during and after the interaction.
Perishability	Services cannot be stored for later sale or use.	OSS cannot be provided in advance or saved for later use; it is only 'consumed' when an incident occurs, and its capacity (e.g., availability of service personnel and equipment) is wasted if not used.

The process also involves multiple actors, highlighting the importance of managing the service ecosystem. Currently, the knowledge among different actors about each other's operations is somewhat limited, which several interviewees have found problematic, especially given the involvement of multiple tiers of subcontractors and some steps being performed without either the Company or supplier. This confirms the findings of Chandler and Vargo (2011), Tax et al. (2013) as well as Viglia et al. (2023), emphasizing the necessity of a good understanding and coordination among stakeholders to effectively satisfy customers. Furthermore, Viglia et al. (2023) describe that achieving an effective service ecosystem requires the organization to proactively decide, select, delegate, and allocate tasks, which are then communicated to its compliant stakeholders. What is noteworthy in our case study is that the Company outsources almost the entire process to its suppliers, thereby making them responsible for the rest of the process and consequently responsible for the service ecosystem. However, this approach appears to cause problems, as some actors may not meet the company's requirements. Combined with the highly variable nature of the OSS, this makes it challenging to bridge the gap between the actual delivery of a service and the service specifications, as described by gap three in Bergman and Klefsjö's (2010) model. This is because the company loses control and some ability to measure the delivery.

It can further be noted that many of the steps that are handled by the supplier are critical for the customer experience, sometimes leading to negative experiences. Kranzbühler et al. (2019) describes the strategic use of branded outsourcing to manage customer touchpoints that are typically perceived negatively. Branded outsourcing means that the customer sees every brand involved in the process, as opposed to a white-label process where suppliers represent the company. This means that touchpoints often leading to dissatisfaction are outsourced in order to protect the image of the company offering the service (Kranzbühler et al., 2019). The Company is currently outsourcing the process, which could potentially protect them from some of the negative aspects of the customer experience if it was not for the usage of white labels. Currently, the Company mainly gets the negative aspect of the outsourcing, which is that it adds to the complexity and gives the Company less control of the process (Kranzbühler et al., 2019), without protecting the brand from the negative customer experiences.

Dong et al. (2015) described that the customer's involvement and its impact on the customer's experience depend on the CP-readiness of the customer. This study highlights that customers that have been involved in the process to a greater extent more often express dissatisfaction with the process, than those who were not. However, it does not necessarily mean that all the customers have low CP-readiness or that Dong et al. (2015) is wrong. Because the biggest dissatisfactions are observed when the customer feels like they have to step in just because nothing happened from the provider side, which could be connected to Verley (2015), who describes that besides the readiness and motivation, the clarity of the customer's role will have a big impact on the overall experience.

Furthermore, the study identified a new potential gap that explains customer dissatisfaction. It was named gap number six, and it concerns the difference between the expectations formed in the country of origin and the actual performance in another country with a different service culture. This study focused on Nordic customers being abroad and often highlighted the difference in expectations formed from experiencing customer service in the Nordic countries and the country where they experienced the service process. To conclude, this study confirms Bergman and Klefsjö's (2010) five gaps and contributes with a sixth, which explains why service expectations might cause customer dissatisfaction in other countries (see more in Table 14).

Table 14. *The gaps, adapted from Bergman & Klefsjö (2010), and their connection to the OSS-context.*

Gap	**Description** (Bergman & Klefsjö, 2010)	**Examples in the OSS process identified in the study**
1	Gap between customer's expectations and the company's perception of those expectations.	A difference between what the OSS-provider perceives as customer expectations, such as frequent updates, and what the customer actually expects, which could include even more regular updates and proactive communication.
2	Gap between the company's perceptions of customer expectations and the service quality specifications.	The company realized that customers value proactivity, regular updates and a feeling of being cared for. However, even if the suppliers claim that they also perceive these as important, they are not specific in the service specifications or visible in the KPIs.
3	Gap between service quality specifications and service delivery.	Some workshops do not always follow the service specifications, instead prioritizing domestic customers and sometimes charging extra for abroad customers.
4	Gap between service delivery and external communications to customers about service delivery.	Long waiting times for assistance in relation to the formal/informal promises made by the Company.
5	Gap between customer's expectations and perceived service.	Customers often have higher expectations than their perception of the actual performance regarding the clarity of information about their coverage, the frequency of updates received, and the degree of involvement required from them.
6	Gap between the expectations formed in the country of origin and the actual performance in another country with a different service culture.	Nordic customers being abroad have different expectations that are impossible to reach in some of the countries where they experienced the service process.

6.2 Service Steps in OSS that Shape Customer Satisfaction

The second research question is about how companies can identify service steps that impact customer satisfaction in a OSS process involving a network of actors and stakeholders. The ultimate purpose with the Conceptual Framework developed in this study (see Figure 16) is to show which service steps contribute to the service quality dimensions respectively. It combines the theory from Grönroos (1984), Grönroos and Voima (2013), and Parasuraman et al. (1988) to integrate concepts of service quality, customer satisfaction, co-creation theory, and specific service steps obtained from the empirical results.

The analysis has confirmed the importance of reliability, responsiveness, tangibility, empathy, and assurance in shaping customer perceptions and experiences throughout the service journey (Parasuraman et al., 1988), and also that reliability seems to be the most important dimension (Kvist & Klefsjö, 2006). Grönroos and Voima's (2013) descriptions of the value sphere and its corresponding challenges has been confirmed to be particularly true in the context of an OSS process, characterized by a network of actors and stakeholders. We validate the complexity of the joint sphere theory and emphasize the critical role that service steps within this sphere play in maintaining effective customer engagement and satisfaction. Further, even if not explicitly visible in the framework, this study contributes to the theory on the IHIP characteristics (Parasuraman et al., 1985; Edgett & Parkinson, 1993) by describing what the four characteristics mean for an OSS. Additionally, this study confirms that all five gaps are important potential root causes of dissatisfaction, as exemplified in Table 15. To contribute to the research on gaps as potential root causes of customer dissatisfaction, we formulated a sixth gap, which we described as the “gap between the expectations formed in the country of origin and the actual performance in another country with a different service culture”.

The framework allows stakeholders and researchers in the field of on-site services to identify and prioritize critical factors for enhancing customer satisfaction across the five dimensions. The inclusion of specific service steps makes it possible to identify critical touchpoints, understand how they influence subsequent steps, and to what extent the respective dimensions are fulfilled through the specific steps in an OSS process.

Value creation in the OSS process		Customer Satisfaction				
		Technical Quality		Functional Quality		
Step	Sphere/involved actors	Tangibility	Reliability	Responsiveness	Empathy	Assurance
First call	Customer & the Company		X	X	X	X
Supplier takes over the case	Customer & supplier		X	X	X	X
Coordinate with sub-supplier	Supplier & sub-supplier					
Arranges solution	Customer, supplier & sub-supplier		X	X		
Communicates with customer	Customer & supplier		X	X	X	X
On-site service performed	Customer, sub-supplier	X	X	X		
Arranging temporary solution	Customer, supplier, sub-supplier	X	X	X		
Workshop provides service	Customer, workshop, insurance, supplier	X	X	X		
Reimbursement management	Customer, supplier, insurance	X	X		X	

Figure 16. *The framework with the different steps (Inspired by Grönroos, 1984; Grönroos & Voima, 2013; Parasuraman et al., 1988).*

6.3 Limitations and Future Research

This master thesis has been limited to OSS for customers being abroad originating from the Nordics. The findings around critical factors and its impact on customer satisfaction are therefore affected by this limitation, and other critical factors might be of importance in other countries and for another type of process. One example is the critical factor of cultural differences, which limit generalizability because customers from other countries likely have different reference points in their home countries compared to Nordic customers. The sixth gap, “between the expectations formed in the country of origin and the actual performance in another country with a different service culture” could still be valid, but the specific reasons for the difference in expectations will not be same as in this study.

The explanatory power of the quantitative survey in this study is limited by the low sample size, however, it was valuable to indicate and guide the qualitative data collection and analysis.

Additionally, the study's scope is somewhat constrained by the characteristics of the interviewee customers, who often had experienced a critical incident. Although using critical incidents was a deliberate choice for this study, we acknowledge that this approach may restrict the ability to represent objective customer satisfaction and experience comprehensively.

An interesting area for further research is to conduct a similar study with a larger sample size to investigate if the findings hold, and to identify more positive aspects that are important to keep doing for the Company. It would also be interesting to conduct a cross-national study to compare different countries, investigating whether the cultural differences suggested by this study are accurate, and identifying which countries exhibit the most significant cultural differences affecting OSS. Moreover, future studies could explore the applicability and usefulness of the conceptual framework across different industry sectors.

Dong et al. (2015) noted that a customer's involvement and its impact on their experience depend on their readiness to participate (CP-readiness). Future research could include questions to assess customers' CP-readiness and then analyze how it correlates with customer satisfaction in OSS processes that naturally require a high degree of customer involvement.

7. Conclusion

The purpose of this thesis was to *examine how an on-site service (OSS) process, with multiple actors and stakeholders, can be evaluated and improved to enhance customer satisfaction while maintaining a strong brand image.* The empirical findings, along with the subsequent analysis and discussion, demonstrate that what makes OSS unique is its execution at the customer's location, often necessitating highly individualized solutions. Additionally, the process often spans a longer period of time with multiple steps, each requiring actions from different stakeholders, making it challenging to plan. However, it has been observed that many of the factors influencing an "ordinary" service also apply to OSS such as the the five dimensions of service quality by Parasuraman et al. (1985). Although customers view the expectations for an OSS as similar to those for other services, management faces additional challenges due to the high expectations for quickly restoring operational functionality and the involvement of numerous stakeholders across different countries. The implications are that managing the entire system, encompassing all the touchpoints and stakeholders, becomes increasingly important, as a failure in any one of them could potentially result in a significantly poorer outcome because of dependencies and time constraints. Specifically, the organization offering the service must ensure that all providers can deliver according to the customer's expectations of the brand to maintain the Company's image. However, given the involvement of numerous actors and the diverse nature of cases, success is not guaranteed in every instance. Therefore, it could be crucial to consider taking actions, such as managing expectations or revising outsourcing strategies, to protect the Company's brand from potential backlash.

7.1 Managerial Implications

Every managerial decision can play a significant role in shaping the overall performance and perception of a company. However, given the constraints in terms of human and financial resources, management must set strategic priorities and allocate resources effectively. By utilizing our introduced framework (see Figure 16), which integrates customer satisfaction theories, co-creation concepts, and specific service steps, companies in various industries can identify crucial service steps to enhance customer satisfaction across the five dimensions of service quality.

The framework developed in this study facilitates a detailed identification and analysis of the service steps and how they affect customer satisfaction. Increased understanding of this relationship can enable managers to strategically invest in and focus on service steps where the greatest potential for enhancing functional and technical quality exists. However, it is important to recognize that certain steps in the service process are interconnected, and changes or improvements in one step can significantly impact subsequent steps. Therefore, the framework should be employed with an understanding of how specific actions indirectly influence the entire service process.

Viewing the OSS as a service ecosystem, as detailed in the discussion, is crucial for managers aiming to successfully navigate and improve customer satisfaction within such a complex environment. The insights gained from understanding each touchpoint within the OSS process allow management to devise a comprehensive strategy that addresses both direct and indirect interactions with the customer. This holistic approach is vital as each touchpoint, whether managed directly by the company or an outsourced partner, contributes to the customer's overall experience and perception of the brand.

The current approach to outsourcing and insourcing presents both advantages and challenges. Currently, the disadvantages of outsourcing with white-label seem to outweigh the advantages. Furthermore, the complexity of managing joint spheres where customer interaction is intense underscores the importance of these steps in maintaining robust customer involvement and satisfaction. This calls for a more nuanced management strategy that not only recognizes the critical nature of these interactions but also optimally leverages the benefits of both outsourcing and insourcing to strengthen customer relations and enhance overall service quality.

The factors identified as important for the OSS process are described in Table 15, which also presents potential actions to mitigate the respective challenges. Improving the actual service is one approach, but since some factors are beyond the control of companies or their suppliers, managing customer expectations is expressed as a critical and challenging aspect. Specifically, the management of anticipated service times emerges as a crucial factor. Failure to accurately manage and communicate these expectations can lead to disproportionately high customer expectations, which are ultimately unattainable. Another practical example of this intervention is to send out information before the summer period as a way to manage expectations and explain some reasons for longer waiting times abroad compared to the expectations for customers accustomed to the Swedish OSS process (Coye, 2004).

In conclusion, by understanding the complex interdependencies of service steps and properly managing the service ecosystem, companies can better align with customer expectations, thereby improving satisfaction and strengthening their competitive edge in the industry. This structured approach to dissecting and enhancing service delivery within OSS is essential for maintaining a consistent quality level and supporting the company's reputation.

Table 15. *The most important challenges and the corresponding actions to mitigate.*

Important factors	Involved actors	Actions to mitigate
Expectations - The brand image - Values communicated - Cultural differences	the customer the Company,	**Short term focus:** Being cautious with promises to avoid unmet expectations. Explain and consider cultural differences for the customers. **Long term focus:** Ensuring that all suppliers and sub-suppliers represent the Company in an ideal way.
Customer is afraid, insecure, and worried abroad Customers have varied needs and personalities - Suitable level of customer involvement	the customer the Company, the suppliers, sub-suppliers, workshop	**Short term focus:** Ensuring customers are not denied service on the first call and are quickly redirected to the correct agent. Providing complete information immediately upon contact. Have a close contact with the customer, for example providing updates when service has been started. Finding a personalized way of managing specific customers and ensuring the right communication path for the customer. Showing empathy and making the customer feel heard. Gather information directly from the customer and adjust the temporary and permanent solutions to the individual's needs.
Smooth communication with the customer - Sufficient updates and information - Suitable number of contacts - Minimize language barriers	the customer, the Company, suppliers, sub-suppliers, workshop	**Short term focus:** Gather information directly from the customer so that the ones that manage the case are the ones obtained the details from the customer. Provide regular updates to the customer both when new information is available and when the customer has not been informed for a while. **Long term focus:** Ensure sufficient language skills at every supplier and/or sub-supplier.
Efficient information transfer - Information flow between different actors - Information flow between different agents	the Company, suppliers, sub-suppliers, workshop	**Short term focus:** Ensure all written communications are in English to allow every participant to easily understand and trace information if needed. Always write detailed logs immediately after the call has ended. **Long term focus:** Use a shared information system between the Company, supplier, and sub-supplier.
Customer involvement	the customer, the Company, suppliers, sub-suppliers, workshop	**Short term focus:** Explaining processes clearly and defining the responsibilities of both the customer and provider. Be proactive and communicate so that the customer feels like they do not have to do most of the work themselves.
Providing suitable solutions - Prioritization at the workshop - Waiting time for tower - Availability of the workshop - Capacity at the workshop - Spare part issue at the workshop	the customer, suppliers, sub-suppliers, workshop	**Short term focus:** Prioritize the initial diagnostic. Make sure spare parts are available. **Long term focus:** Incentive/agreement for the workshop to prioritize foreign cases.

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A Interviews

A.1 Interview Guide Customer

Transfer of information

- What were your expectations?
- What is your experience?
    - Were there any parts that were particularly problematic?
- Communication between different stakeholders?
    - Supplier
    - Sub-supplier
    - Insurance

Benefits

- What were your expectations?
- What is your experience?
    - Clear view of the coverage?
    - Did you get the right benefits (the once you were entitled to)? Explain

Driving the case forward

- What were your expectations?
- What is your experience?
    - Updates
    - Your involvement or effort to push the case forward
    - Did you feel like you were taken care of during the service process?
    - Most problematic and impressive parts?

A.2 Interview Guide Internal Stakeholder

Describe your role and experience

What is your experience of abroad cases?

- Extra important factors?
- Customer pain points?
- How do you make the customer feel taken care of?
- Common feedback and problems? How are they managed?

Biggest challenges for the agents?

What's your view of the suppliers?

How do you transfer information between the different actors?

Workshops - do you have any agreements regarding how (OSS) cases should be handled/prioritized?

Do you have an opinion on how the workshops currently work / prioritize? Good or bad?

Do you think it is important for the workshop to prioritize abroad cases?

Do you have any perception of how the process works between the different actors?

[Viewing the survey for insights] - What's your thoughts?

A.3 Interview Guide Sub-supplier

Describe your role and experience

What is your experience of abroad cases?

- Extra important factors?
- Customer pain points?
- How do you make the customer feel taken care of?
- Common feedback and problems?
- How does the hand-over work?
    - What's your expectations regarding information?
    - How do the customers know who to contact?
    - How do you present yourself?
- How do you handle problems that come up?

Biggest challenges for the agents? (e.g benefits)

Who is driving the case forward? Customer, you or another actor?

- How much is the customer expected to do?

How do you keep the customer updated?

How do you transfer information between the different actors?

- different agents within your organization
- sub-supplier and insurance

What's your view of the other actors in the process?

- sub-suppliers
- upstream

How do you handle cases where insurance is involved?

B Survey

B.1 Survey Questions

B1. The five SERVQUAL dimensions and their corresponding indicators for the OSS process in the company.

Variable	Dimension	Indicator	
Reliability	Clarity	Q1	It was clear who I was speaking with
	Knowledge	Q2	The service provider(s) offered a solution to my problem (e.g. guidance on simple troubleshooting, on-site repair, transport to a workshop)
	Flexibility	Q3	I perceived that the workshop prioritized my case
	Time-efficient	Q4	I felt that the total service time (from start to finish) was acceptable
	Coverage/ compensation clarity	Q5	It was clear whether the agreement covered the service or not
Responsiveness	Prompt service	Q6	The service agent(s) responded promptly when I contacted them
	Communication/ updates	Q7	The communication with the service workshop was good (e.g. estimated service time and updates)
	Proactive communication	Q8	The service provider(s) was driving my case forward rather than me pushing (e.g. updates and suggested plans going forward)
Assurance	Information-sharing	Q9	I perceived that the details of my case were smoothly transferred to the next person(s) in the service process
Empathy	Attentive	Q10	The service agent was patient and listened to my request/problem
	Acknowledge	Q11	I received the benefits I was entitled to according to the service agreement
Tangibility	Appearance	Q12	I perceived the on-site staff as professional and helpful
	Appearance	Q13	I perceived the workshop staff as professional and helpful

B.2 Survey Result

B2. The survey results for the 14 questions for the OSS process in the company.

Question number	Question	Average score	5	4	3	2	1	Not applicable
Q1	Overall satisfaction	3.4	12	3	2	3	7	0
Q2	The service agent(s) responded promptly when I contacted them	4.3	17	6	1	2	1	0
Q3	The service agent was patient and listened to my request/problem	4.6	17	8	0	1	0	0
Q4	It was clear who I was speaking with	3.6	11	5	4	2	5	0
Q5	The service provider(s) offered a solution to my problem	3.7	13	4	3	1	5	1
Q6	I perceived the towing staff as professional and helpful	4.5	19	5	1	1	1	0
Q7	The communication with the service workshop was good	3.3	9	4	1	0	8	5
Q8	I perceived that the workshop prioritized my product	3.1	8	3	2	0	8	6
Q9	I perceived the workshop staff as professional and helpful	3.7	9	6	2	1	4	5
Q10	It was clear whether the OSS covered the service or not	3.6	13	3	1	1	7	2
Q11	I received the benefits I was entitled to according to the service agreement	3.5	11	2	2	4	4	4
Q12	The service provider(s) was driving my case forward rather than me pushing	2.8	8	2	1	1	11	4
Q13	I perceived that the details of my case were smoothly transferred to the next person(s) in the service process	3.0	10	2	1	0	11	3
Q14	I felt that the total service time (from start to finish) was acceptable	3.1	10	2	0	2	9	2

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