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# **A Systematic process for using customer feedback in offering development**

Case Study

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**ABSTRACT:**

Perinteiset valmistus- ja tehdasteollisuuden yritykset etsivät nykyään lisäarvoa palveluliiketoiminnasta. Yrityksille, joilla on laaja laitekanta, tuotteiden ympärille rakennetut palvelut luovat suuren potentiaalisen liiketoiminnan kasvattamiselle. Palveluiden luominen ja tuottaminen vaatii kuitenkin paljon sellaista osaamista ja kyvykkyyksiä, jotka eroavat perinteisen tuotantoteollisuuden toiminnasta. Muutosta perinteisestä tuotteiden valmistuksesta tuotteiden ja palveluiden tarjoajaksi kutsutaan palveluistamiseksi. Tämä on merkittävä trendi alalla, mikä näkyy sekä yritysten strategioissa että akateemisessa tutkimuksessa. Keskeinen osa palveluistamisessa on palveluiden kehitys. Palveluiden kehitys eroaa merkittävästi perinteisten tuotteiden kehityksestä ja on yksi osa-alue, jossa palvelu- ja tuoteliiketoiminnan osaamisen eroavaisuudet korostuvat. Palveluistaminen eroaa puhtaasta palveluliiketoiminnasta siten, että palvelun keskiössä on tuote. Tällöin palveluliiketoiminnan malleja ja oppeja ei voida suoraan käyttää sellaisenaan, kun kyse on palveluistamisesta, vaan näitä pitää tarkastella palveluistavan yrityksen kontekstissa. Nykytutkimus on käsitellyt palveluistamista tuotantoteollisuuden näkökulmasta, mutta se on kuitenkin rajallista ja omaa puutteita käytännön tason tutkimuksista. Palveluliiketoiminnan kehityksessä, asiakkaiden ja asiakaspalautteen sisällyttäminen suoraan palveluiden kehittämiseen on ollut pitkään keskeistä ja tutkitusti menestyksekkästä. Tämän tutkimuksen tarkoituksena on selvittää miten asiakas ja asiakaspalaute voidaan sisällyttää palveluiden kehitykseen palveluistavan yrityksen kontekstissa. Tutkimus esittää oikean tapausyrityksen palveluiden kehitysprosessin, sekä tarkastelee asiakkaan ja asiakaspalautteen sisällyttämistä kyseiseen prosessiin. Tutkimuksen tulokset pohjautuvat case-yrityksen sisäisiin aineistoihin sekä haastattelukierrokseen, jossa haastateltiin useita palvelukehitykselle keskeisiä toimijoita yrityksessä. Tutkimus osoittaa, että asiakas ja asiakaspalautteen sisällyttäminen palveluiden kehittämisessä nähdään yleisesti tärkeänä toimijoiden keskuudessa sekä positiivinen vaikutus on tunnistettavissa. Systemaattinen asiakkaan ja asiakaspalautteen hyödyntäminen palveluiden kehittämisessä vaatii kuitenkin useita erilaisia toimia, jotta siitä saadaan tehokasta. Erilaiset vaiheet ja näiden tarpeet palveluiden kehittämisessä on huomioitava ja näille vaiheille hyödyllinen asiakaspalaute on tunnistettava sekä saattaa toimijoiden saataville. Asiakkaan ja asiakaspalautteen käyttö on kirjattava selkeästi osaksi palvelukehitysprosessia, sen käytöstä on raportoitava ja sille on tarvittaessa osoitettava erillisiä resursseja.

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**KEYWORDS:** Service development process, Customer feedback, Offering development, Servitization, Customer participation, Manufacturing industry

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# 1 Introduction

## 1.1 Study background

Manufacturers increasingly seek new value in services and integrated solutions (Matthyssens et al., 2010). Integrated solutions are described as a “combination of products and/or services” (Miller et al., 2002, p.3). Traditional manufacturing companies with a large installed base of products have enormous potential for improved profitability in the shift from selling products to selling integrated solutions. (Huikkola et al., 2022a) However, this requires a complex shift of organisational resources (Huikkola et al. 2016), capabilities and processes, and a new approach towards design activities (Huikkola et al., 2022b; Rabetino et al., 2017). This organisational shift is described as servitization (Baines et al. 2009). The most significant challenge in exploiting the opportunities of servitization is how to transform a manufacturing organisation proficiently (Rabetino et al., 2017; Huikkola et al., 2020). Due to the profound benefits of integrated solutions and services for manufacturing companies, the topic has gained the attention of researchers (Baines et al., 2017; Rabetino et al., 2018).

Organisations and scholars have investigated ways to mitigate this challenge. In this, the role of customer participation has been found to positively influence new service design performance and results in manufacturing companies. Customer participation is important in service development, especially in industries with complex customer needs. (Morgan et al., 2024; Morgan et al., 2019). Customer feedback has also been shown to reduce other adverse moderating effects related to new service development (Carbonell et al., 2012).

As products, new services also often have a process in place for their development. In the servitization literature, there are multiple frameworks and models concerning service development processes (Kindstöröm & Kowalkowski, 2009; Mourtzis et al., 2018; Huikkola & Kohtamäki, 2020; Pekkala et al., 2019). While the different processes address

the participation of customers in different ways and depths, they are all aligned on the importance of customer participation. Therefore, the role of customer participation in relation to the service development process is key when designing new services.

## **1.2 Motivation for the study**

Although the servitization field has gained and continues to attract scholars, there is still a lack of practical implications of theories and findings. A research review conducted by Baines et al. (2017) found that the field still lacks papers describing how to servitize manufacturing firms, stating that the field could better overcome gaps with practice, to minimise theory-practice disparities. As new service development is a crucial part of servitization, the study in relation to service development and customer participation falls in that context and is a case in point. Studies around this topic also lack attention, as Morgan et al. (2019) call for a direct investigation into how customer participation affects the knowledge flow and new service development.

As customer-centric approaches and studies have become more common in the service industry and servitization in the manufacturing field are gaining attention (Rabetino et al., 2021), scholars have called for the implementation or comparison of those findings in the manufacturing context. For example, in the paper by Alam and Perry (2002), future research suggestions include studying the feasibility of the findings for service providers in different industries. As manufacturing companies are entering the service industry through servitization, they become an objective for that suggestion. Mourtzis et al. (2018) presented their model and feedback-gathering tool in the context of the information technology industry and proposed future research for the model in more industrial case studies. So, a clear need to adopt more customer-centred models and frameworks from the service industry to the manufacturing industry can be recognized.

### **1.3 Research objectives and questions**

With the arguments presented, it is evident that there is a need for research on how a servitizing manufacturing company can approach customer feedback in its service development processes. Therefore, the purpose of this study is to tap into this research opportunity by answering the following research questions:

“How does customer feedback impact the service development process in manufacturing, and how should it be utilised in the different phases?”

The contribution of this study is threefold. Firstly, the study contributes to the servitization field by providing practical implications for servitized manufacturing firms, which addresses the theory-practice disparity in the field mentioned by Baines et al. (2017). Secondly, the study shows how current knowledge flows and processes may change with a structured approach to customer involvement. This partly addresses the research suggestion presented by Morgan et al. (2019). Lastly, the study contributes to research on the manufacturing industry by comparing research findings to those in the service industry research. (Alam & Perry, 2002; Mourtzis et al., 2018).

### **1.4 Thesis structure**

The study is structured in five main chapters. Following this introduction, a theoretical background for the study is established. The theoretical background presents the two main theoretical streams of the study and presents a theoretical framework that is based on the theoretical elements. The third chapter will present and justify the research methods used in the study. This is followed by the fourth chapter that presents the findings. Lastly, the study concludes by discussing the implications of the findings, highlighting possible limitations and pointing out possibilities for future research.

## **2 Theoretical background**

The study's background includes two theoretical aspects: reflection on the thesis topic and research questions. Firstly, the service development process as a concept is established, and its different structures are presented. After that, the focus is on customer feedback, its different forms, and how it can be adapted to a service development process. As the conclusion to the theoretical background, a theoretical framework is presented, which is used as the basis for the study's data collection.

### **2.1 Service development process**

Research has found that service development should be established as a formal process (Fitzsimmons et al, 2000, p. 8). Servitization is shifting manufacturing companies from products to more service-like entities, which requires firms to change their innovation processes and develop new approaches (Santamaría et al., 2012, p. 145). Service development generally differs and requires different capabilities from those commonly practised by traditional manufacturing companies (Ettlie & Rosenthal, 2011). Therefore, the first chapter of the theoretical background will focus on the service development process and models in the context of manufacturing companies. By understanding the development process, it is possible to see how customer feedback is best adapted to it.

#### **2.1.1 Service development process as a concept**

In the field of research, there are multiple service enhancement-related terms, i.e., service development, service design, and service innovation. Therefore, it is important to clarify the definition of service development. According to Fitzsimmons et al. (2000, p. 5), service development is defined as the "overall process of developing new service offerings". This means that the service development process includes the different activities related to generating services, such as service innovation and service design, which

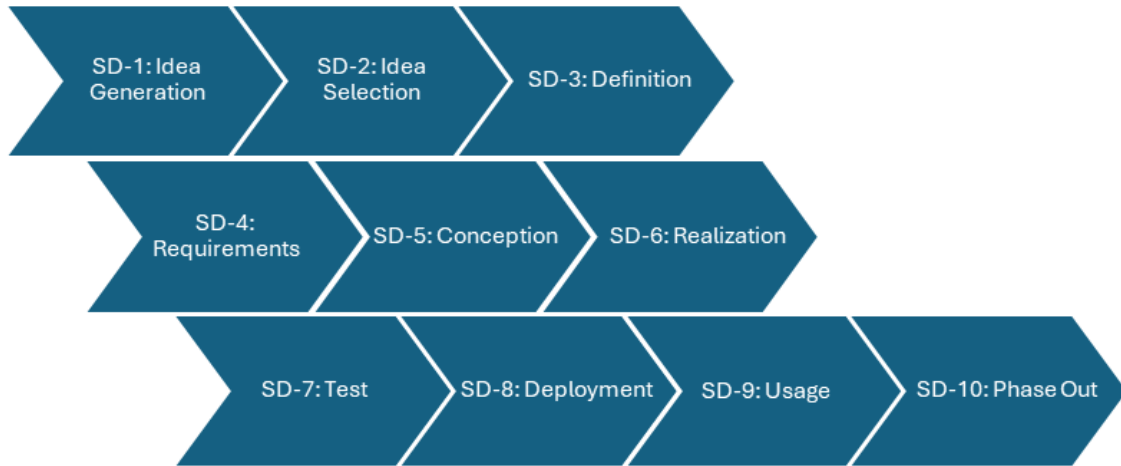
are presented in separate stages within the service development process. The different stages vary in different service development models or frameworks. A formal process for service development can be achieved through a process model. According to Meyer (2011, p. 616), a process model is “a pattern for describing a development process based on a development scheme”. The process model can consist of activities or stages that aim for the finished development object, and different models may be applied to different development schemes (Meyer, 2011, p. 616).

Existing service development literature has focused on consumer markets and professional service firms, which has led to a gap in service development in the manufacturing context. (Kindström & Kowalkowski, 2009, p. 157). Therefore, a lot of the research and proposed models are based on studies conducted in the service industry. This possibly has led to the conclusion by Fitzsimmons et al. (2000, p. 27), who already stated in their early study of service development in the manufacturing context that an understanding of product development mainly drives the understanding of service development in that field. This was further confirmed by Witell et al. (2014, p. 45), as their study found that in manufacturing firms, service development is often done by using the product development process. Therefore, it is possible that a manufacturing firm can use multiple ways to approach the service development process. To build a comprehensive understanding of the service development process, the following subchapters will present the process models’ distinctive characteristics in the contexts mentioned previously.

### **2.1.2 Service development process in the service industry**

According to Meyer (2011, p. 618), service development models can have separate phases, start and endpoints, and emphasize earlier or later stages. Therefore, to capture the most common phases used in different models, he presented a framework to represent the main phases of service development models, as shown in Figure 1 below. As the framework presented only displays the main phases of different modes, it does not

suggest any order or sequence. However, it gives a general sense of what stages could be included in a process development model.



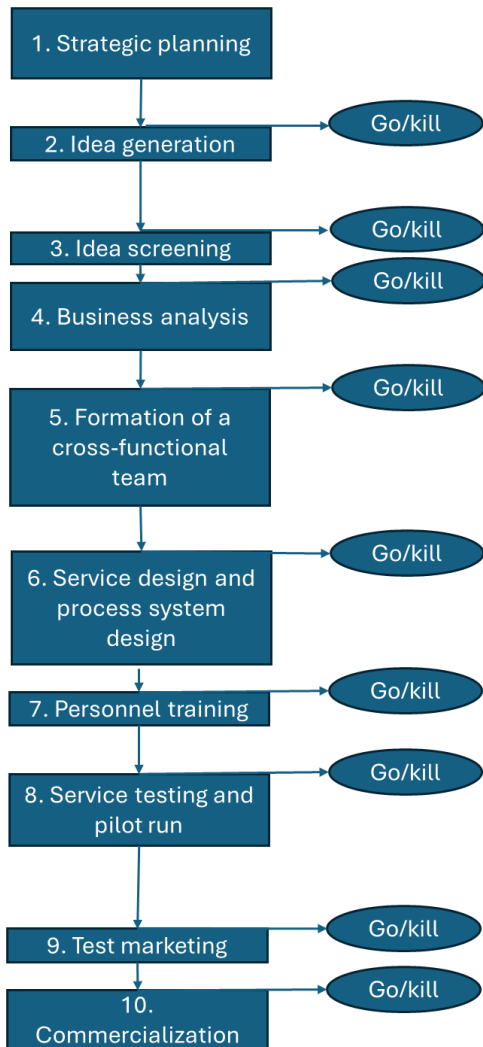
**Figure 1.** The general main phase of the NSD process models (Meyer, 2011, p. 618).

Confirmation of the general main phases of service development processes can be found in empirical studies. Alam and Perry (2002) presented two models for service development processes, as shown in Figure 2 below. Their qualitative case study identified ten stages incorporated into a model, as the model by Meyer et al. (2011). Some single stages differ from the general main phases, and the start and endpoints have slight differences, but overall, the processes follow the same pattern. As the models presented by Alam and Perry (2002) are concrete examples of service development processes, they suggest that the process can be approached with a linear or parallel sequencing of the stages. In addition, the models also include evaluating the viability of continuing the project after each stage.

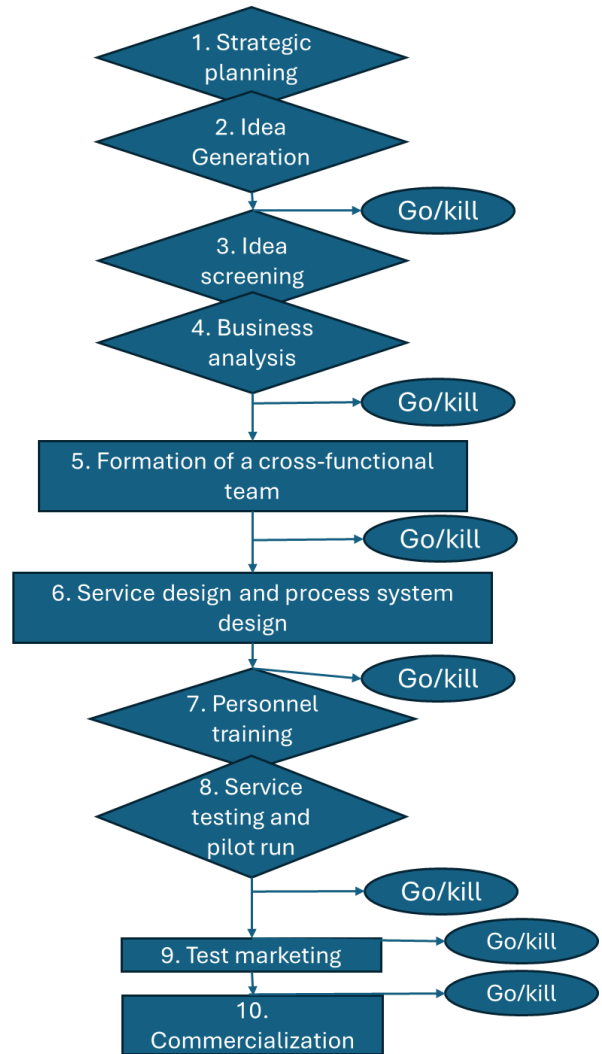
In conclusion, service development processes can generally consist of multiple distinctive stages and are linear in sequence. Additionally, the start and endpoints can differ depending on the model's scope. When considering the viability of service development models from the service industry, it is important to consider the findings of Witell et al. (2014, p. 44). Their research found that implementing these elements directly into a manufacturing context and using existing processes does not lead to preferable outcomes. Therefore, it is important to understand the logic for service development

processes, specifically in the manufacturing context, which will be presented in the following subchapter.

*Linear model of development process*



*Parallel model of development process*

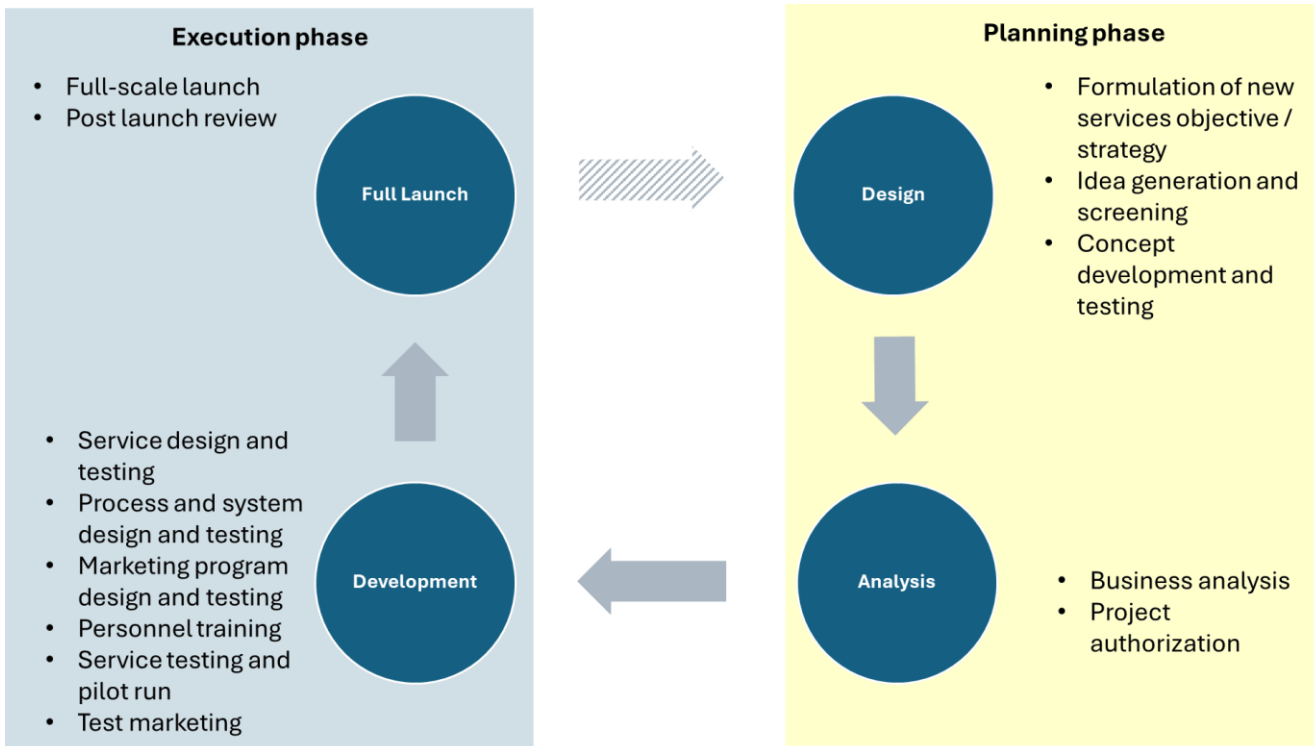


**Figure 2.** Two models of new service development (Alam & Perry, 2002, p. 525).

### 2.1.3 Service development process in the manufacturing industry

A basic structure of a service development model for the manufacturing industry is presented in Figure 3 below. The basic structure presented by Fitzsimmons et al. (2000) includes four stages: Design, Analysis, Development, and Full launch. Each stage consists of a series of activities related to the preceding stages. The process is nonlinear and can

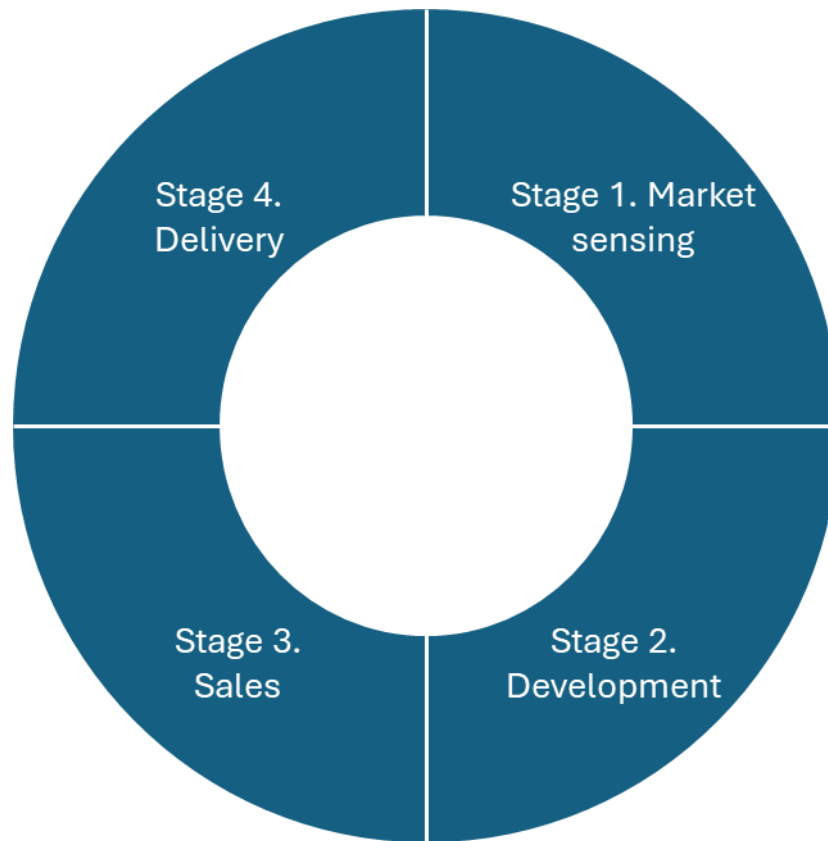
be separated into two phases: planning and execution. The first two stages represent the planning phase, and the last two stages represent the execution phase.



**Figure 3.** The NSD Process Cycle (adapted from Johnson et al., 2000).

A similar approach to the service development process was done by Kindström and Kowalkowski (2009). As seen in Figure 4 below, the service development process was separated into four stages: Market sensing, Development, Sales, and Delivery. There are two notable differences compared to the model by Fitzsimmons et al. (2000). Firstly, Kindström and Kowalkowski (2009) extend the service development process to the services' sales and delivery. It was argued in their paper that literature focuses too much on the earlier stages of the process and on activities that are viewed as the development stage. Therefore, their model extends the process further in the lifecycle of services. Secondly, Johnson et al. (2000, p. 18) elaborate in their paper that the decisions on market viability, internal resources, and capabilities are made within the planning phase of the first two stages. The model in Figure 2 separates similar activities into one stage. Kindström and Kowalkowski (2009) argue that before addressing any ideas in the

development stage, a thorough screening of the customers, competitors, and international organisations is to be conducted.

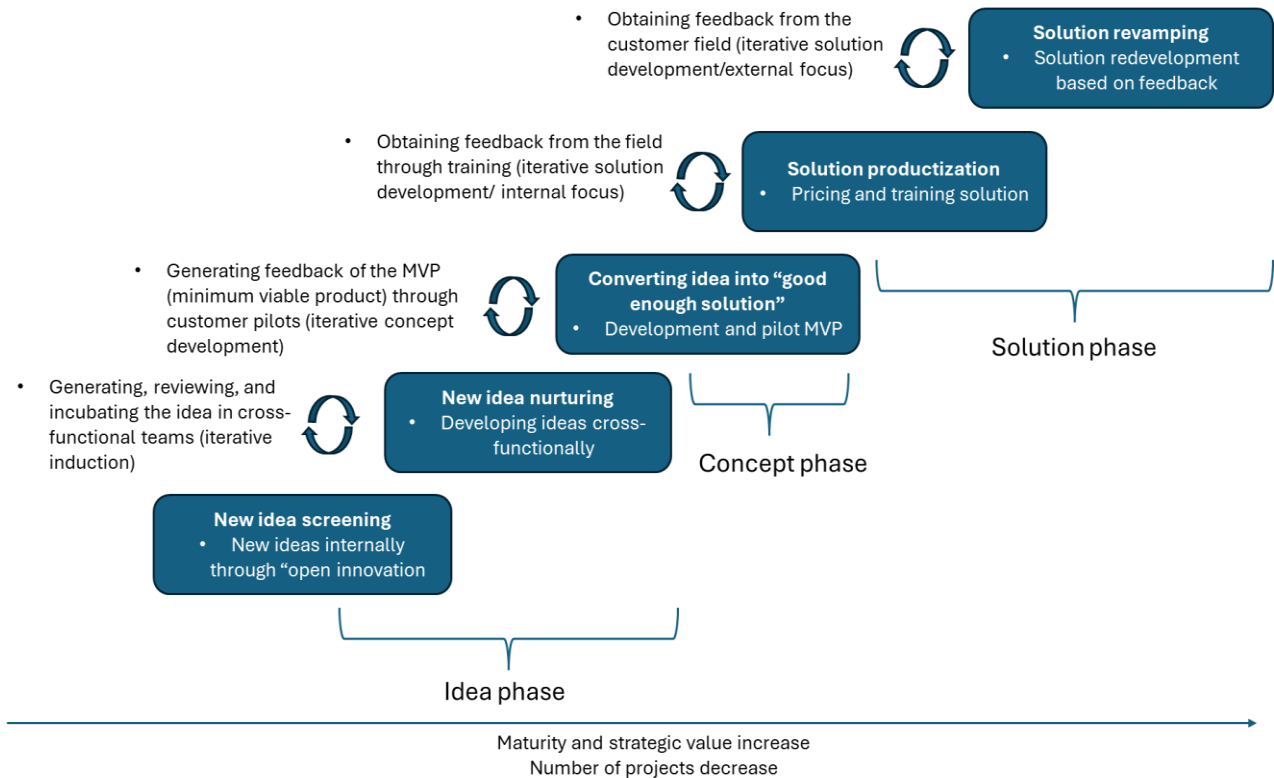


**Figure 4.** A four-stage framework of NSD (Kindström and Kowalkowski, 2009).

Lastly, a new agile model is presented to gain a different perspective. Agile in research has many meanings, but in the model context, it can refer to the dynamic nature of applying previous knowledge and continuous learning within the process (Sjödín et al., 2020, p. 480). Huikkola and Kohtamäki (2020) present a different approach with an agile development model in their research by addressing the development process for solutions. Solutions are generally described as “combinations of products and/or services” (Miller et al., 2002, p. 3). Therefore, in this paper’s context, including a model for solutions development is also viable. Huikkola and Kohtamäki (2020, pp. 17-18) point out that in traditional service development models, the feasibility of the service is often overemphasised, and desirability and viability are often neglected. They presented an agile model, which better addressed all three service development dimensions.

Huikkola and Kohtamäki (2020, p. 20) found five stages in their model, as presented in Figure 5 below. The five stages consist of new idea screening, new idea nurturing, conversion of ideas into good enough solutions, solution productization, and solution re-vamping. The stages can be further separated into the idea, concept, and solution phases. Compared to the models previously presented in this paragraph, this model follows a more linear path, and the cyclic element is present in each stage rather than repeating the complete process. Additionally, the presented model keeps focus on the actions in the development of the solution, rather than listing concrete steps like sales and delivery as part of the process.

In conclusion, the manufacturing industry models include broader stages and phases. Activities in each stage may differ in terms of the start and endpoints. Additionally, the models follow a more cyclic approach rather than a linear one. The differences in the models compared to the service industry can be explained by both the differences in business logic and culture in the manufacturing industry (Kindström & Kowalkowski, 2009, p. 157) and the history of product development practices (Witell et al., 2014, p. 45). This chapter presented the necessary elements to analyse a service development process, its attributes, and structure. The following chapter will present customer feedback as a concept and further elaborate on how customer feedback can be adapted into the service development process.



**Figure 5.** Key phases of agile new solution development for manufacturing companies. (Huikkola & Kohtamäki, 2020, p. 20).

## 2.2 Customer feedback in service development

The second chapter of the theoretical background focuses on customer feedback in service development. It aims to analyse what different customer feedback forms are relevant to service development. It will also evaluate the dynamics and roles of different customers providing feedback. The key to the chapter is to understand what customer feedback includes and from whom, in service development.

### 2.2.1 Customer feedback

To utilise customer feedback in service development, it is required to analyse and define the different forms of customer feedback and how companies receive it. There is limited

research regarding manufacturers developing customer knowledge and involving customers in their service development processes (Johansson et al., 2019). Therefore, as Baines et al. (2017) suggested, a multidisciplinary approach to theory will be applied, mainly through service industry research.

Customer feedback is a form of customer engagement, and its definition can vary depending on the context. Generally, and neutrally, customer feedback concerns goods or services (Nasr et al., 2018). Similarly, Guo and Li (2022, p. 4) define customer feedback as information that consumers provide to sellers about products or services. Molnár et al. (2025, p. 43) propose the theory of behavioural science to back the definition by including the requirement of intent, defining customer feedback as customer insight that is provided consciously. In conclusion on the definitions, it can be proposed that customer feedback is any form of communication, information, or insight concerning products or services that originates from the customer. This definition does not single out whether the information is produced or shared intentionally.

As customer feedback is presented in multiple ways, its definitions and distinctions provide a foundation for understanding different types of customer feedback. Customer feedback can be categorised according to varying attributes related to it. To begin with, customer feedback can be categorised based on its valence. Wirtz et al. (2010, p. 366) split the valence into two, positive and negative, or more generally, into compliments and complaints. Doorn et al. (2010) presented an additional third form of neutral valence, which included feedback in the form of comments and suggestions that do not have a polar connotation. Nasr et al. (2014, p. 533) expanded and specified the spectrum further. In their suggestion, valence-free feedback was defined as general information about the use of products or services. The two additional types presented are concerns and counsel. The concerns include information on issues that are not yet complaints but have the potential to develop into ones if they remain unaddressed. Counsel includes feedback in the form of suggestions and constructive critical reviews. The **valence** of

feedback is an important factor as it can affect the likelihood and motivation of reporting feedback for service development purposes (Wirtz et al., 2010).

Furthermore, customer feedback can be categorized according to the voice of the feedback. Fundin & Elg (2006) researched different feedback routes for customer feedback and showed that companies use two approaches to gathering customer feedback through their different systems: active and passive. The distinction lies in whether the company's feedback systems actively seek to increase the amount of feedback transfer. Companies may implement both types of systems simultaneously. The distinction between active and passive feedback can be furthered by assigning responsibility to the parties. The product or service provider solicits active feedback, and passive feedback is unsolicited and initiated by the customer (Gremyr et al., 2022, p. 224). Different initiation of feedback can lead to varying formats of customer feedback.

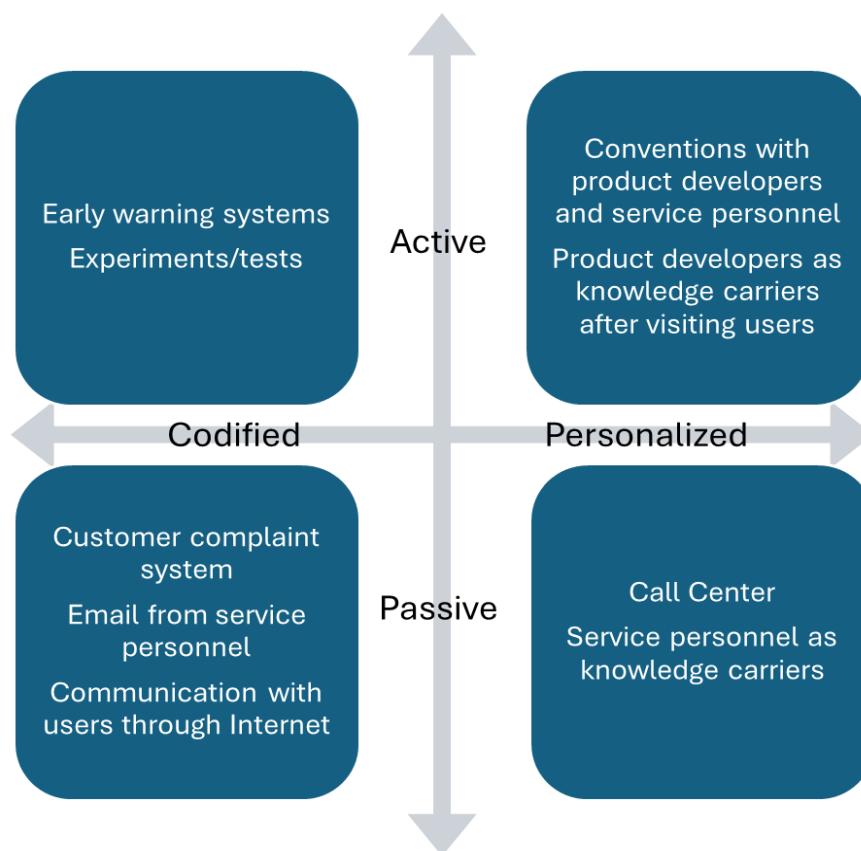
Lastly, customer feedback is categorised based on the different formats in which it is presented. Customer feedback can be codified or personalised. Codified feedback refers to data or information transferred in databases, while personalised feedback involves information transferred between people. (Funding & Elg, 2006, pp. 990-991). Gremyr et al. (2022, p. 224) expanded the definitions by including the intent of obtaining feedback. Codified feedback refers to **acquiring** and transmitting data digitally, while personalised feedback is **generated** and transferred between people.

The format of customer feedback depends on the form in which it is transferred to the company. Customer feedback can be received through different routes, including the following routes (Funding & Elg, 2006).

- Call center
- Communication with users through the internet
- Conventions with product developers and service personnel
- Customer complaint system
- E-mail from service personnel

- Early warning system
- Experiment/tests
- Product developers as knowledge carriers after visiting users
- Service personnel as knowledge carriers

Funding and Elg (2006) proposed that the different forms of customer feedback can be categorized according to their voice and format on an active passive, codified personalized axis, as shown in Figure 6 below.



**Figure 6.** Dissatisfaction feedback routes are classified into four types: active or passive instruments with codified or personalised feedback. Adapted from (Funding & Elg, 2006).

In addition to the conventional routes presented above, the amount of feedback has dramatically increased with the current digitalization trend. This has presented new feedback routes that have increased the amount of codified feedback gathered through sensors and usage data of products or services (Birch-Jensen et al., 2020).

In conclusion, customer feedback can vary and be categorized according to its different attributes. Customer feedback-related processes should always be approached systematically, and therefore, it is important to acknowledge how feedback works to utilize it properly (Birch-Jensen, 2020, p. 57). To further establish the role of customers in providing feedback, the following subchapter will elaborate on customer participation.

### **2.2.2 Customer participation**

In service research, the interactive role of customer-provided inputs regarding service development can be specified in customer participation. As previously stated, customer feedback is any form of communication, information, or insight concerning products or services from the customer. Customer participation, however, defines the degree to which customers are involved in jointly creating new value through interactions and represents the direct involvement of customers in the innovation processes (Morgan et al. 2024, p. 858). Customer participation includes transferring information and insights concerning products or services, which is defined as customer feedback.

Customer participation encourages customers to provide feedback and suggestions (Merlo et al., 2014, p. 83) and is a critical driver for service development (Behl et al., 2023, p. 761). Therefore, as customer participation presents a highly active, personalised, and solicited interaction, it is beneficial to emphasise its role compared to other customer feedback forms in service development.

Customer participation can often raise the question of which customers get involved. Research suggests that different customers impact the service development process and its outcomes. Even though it is generally agreed that customer involvement is beneficial for service development processes, it may also include adverse effects in specific environments and with certain customers (Carbonell et al., 2012, p. 505). Therefore,

particular attention should be paid to the process when selecting customers to involve (Carbonell et al., 2012, p 505; Trischler et al., 2018, p. 2018, p. 91).

It is considered that there is debate on the typology of customer participation in service literature, distinguishing it from terms like customer engagement and customer innovation. Customer participation literature has focused chiefly on business-to-customer research rather than business-to-business. In a business-to-business context, customer participation can include various innovative collaborations that differ from business-to-consumer. (Dong & Sivakumar, 2017). Therefore, customer participation in the context of this paper is suitable for presenting the involvement of customers in the service development process, as shown by recent studies (Morgan et al., 2019; Morgan et al., 2024).

Customer participation has benefited the service development processes and their positive outcomes (Mustak et al., 2013, p. 353; Morgan et al., 2019, p. 503). However, customer participation must be explicitly managed and appropriately to reach the desired outcomes; if not, it can lead to adverse effects (Mustak et al., 2016, p. 266). Therefore, for general customer feedback, a greater extent of involving customers through customer participation should be approached systematically. Lastly, the impact of customer types is presented in the following sub-chapter to build a coherent understanding of customer feedback.

### **2.2.3 Customer types**

The customers involved in input for service development need to be consciously chosen, as different customers can affect the service development performance (Carbonell et al., 2012, p. 505). One critical category of customers in the product- and service development literature is called lead users. Herstatt and von Hippel (1992, p. 214) defined lead users as those “whose present strong needs will become general in a marketplace, months or years in the future.” They argued that lead users have a better understanding

of future conditions, which will also most likely affect others in the industry. They also stated that the information acquired from lead users is helpful for the development of new products and services.

In addition to lead users, Carbonell et al. (2012, p. 498) identified the role of customers who have relational closeness to the provider. They stated that service innovation-related customers are chosen according to closer relationships due to confidentiality issues. Their study showed that lead users and relationally close customers have differing impacts on service development performance and outcomes (Carbonell et al., 2012). The purpose of pointing out different customer types in this study is not to explicitly categorize findings accordingly, but to highlight the impact of customer types on the service development process and research different customer types that can be identified.

#### **2.2.4 Customer feedback in the service development process**

Now that an understanding of different customer feedback and service development models is established, it is possible to combine findings. Customer feedback and involvement can be directly linked to the different stages of service development, with the purpose of the involvement varying in the different stages (Edvardsson, 2006, p. 5). An example of the different stages and purposes can be found in the Table 1 below, presented by Edvardsson (2006, p. 6). The table shows how customer involvement varies according to the purpose and how one purpose can be present in multiple or all stages. It gives an idea of how customer feedback can be tied and arranged to the different stages of service development.

**Table 1.** Different purposes and stages for customer involvement (examples) (Edvardsson, 2006, p. 6).

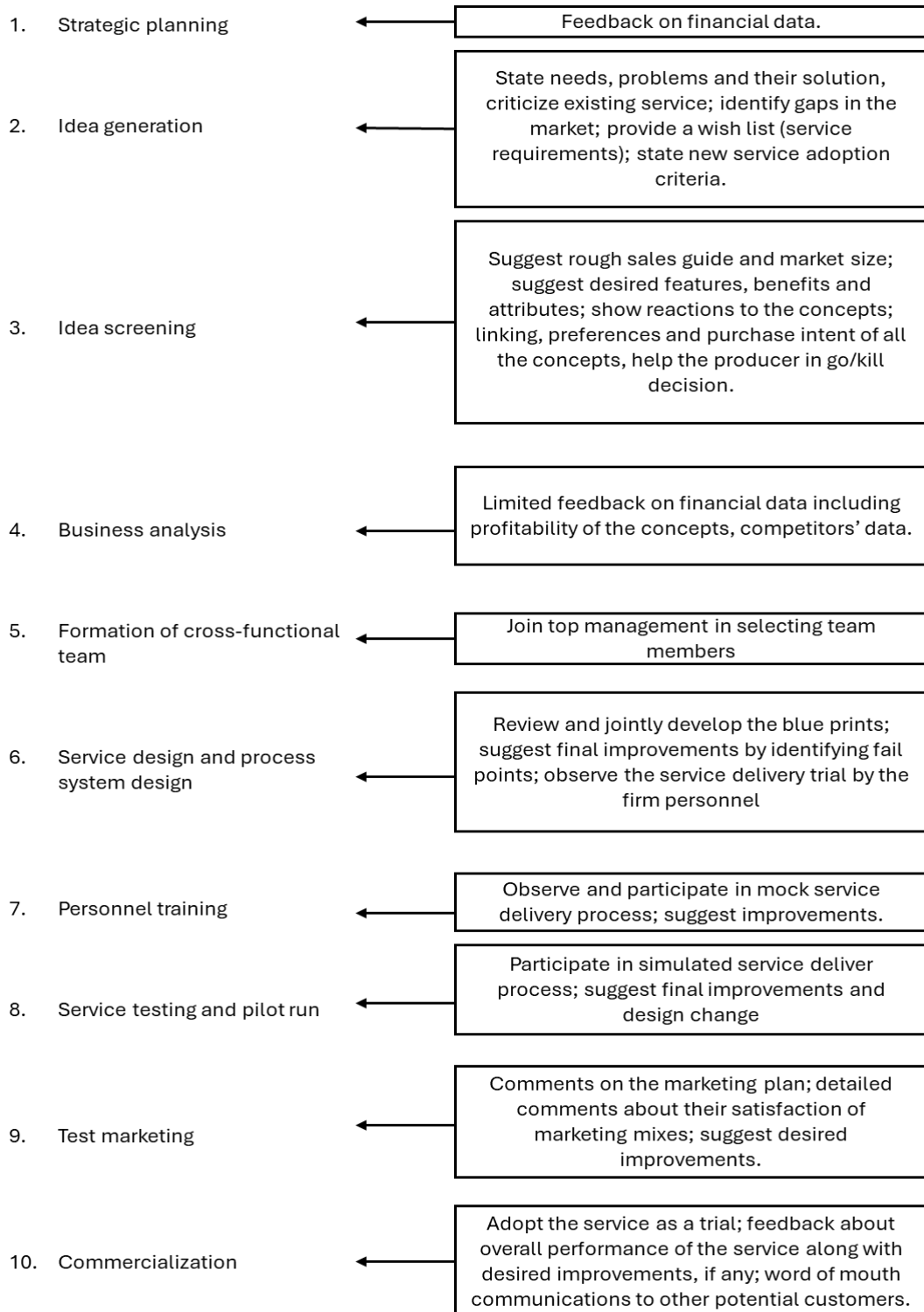
<b>Purpose of customer involvement</b>	<b>Stage of customer involvement</b>
Acquire information about users/customers	Business planning
Get new ideas	Innovation, idea generation

<b>Purpose of customer involvement</b>	<b>Stage of customer involvement</b>
Adapting products/services	Prototyping
Debugging	Testing
Control the customers' experiences	Usage
Teaching customers and learning from them	All stages

Alam and Perry (2002, pp. 526-527) found that superior service success and innovation are achieved by including customer input throughout the development process. Therefore, they presented a customer-centric development model, which suggests how customer input can be incorporated into the service development process. Figure 7 below, by Alam and Perry (2002, p. 527), shows how customer activities link into the different stages of new service development.

It is acknowledged that the presented model is developed based on financial services in the service industry, but in this case, it presents an excellent example of how a systematic process for customer feedback in service development could be arranged. The presented model shows how detailed and determined the customer input can be when implemented directly into the service development stages. It allows for a systematic approach to customer involvement, ensuring customers' input at each stage. Alam and Perry (2002, p.528) suggested implementing these planned and formal processes in service development projects.

## New service development stages      Activities performed by the customer



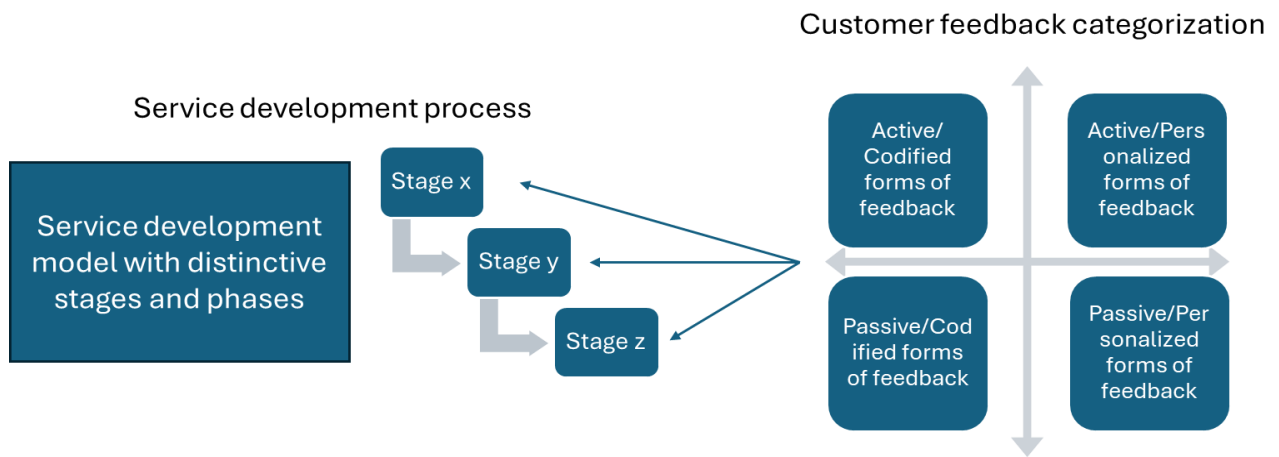
**Figure 7.** Customers' input in the new service development process (Alam & Perry, 2002, p. 527).

### **2.3 Theoretical framework: Systematic approach for customer feedback in service development**

Previous chapters presented a theoretical background on service development, its processes, and customer feedback. Relevant theories and models were presented, establishing a conceptual framework. The conceptual framework will be the basis for the research to understand customer feedback and its utilisation within the service development process.

As previously presented, service development can be conducted through multiple models and stages depending on the context. The multiple activities included in the stages require different inputs depending on the goal of the stages. By first determining the process, stages, and activities, it is possible to analyse the required input for each stage. The established requirements allow for analysing the different means of customer feedback and the best answers to the requirements in each stage. Through the conceptual framework, customer feedback can be tied to the different stages depending on the purpose of the input.

The conceptual framework is established to suit the context of the case study; it allows for structuring and tying the study's findings into the relevant theoretical context. The conceptual framework includes the service development process and customer feedback categorisation. The theoretical framework is presented in Figure 8 below. The theoretical framework will allow us to examine the case company's service development process and its means of customer feedback.



**Figure 8.** Theoretical framework.

### 3 Methods

The following chapter will discuss the methodology behind the research. The first sub-chapter will present, describe, and justify the research approach used. That is followed by presenting the case company and the organisation that is the subject of the study. Lastly, the means of data collection, analysis, and quality will be presented.

#### 3.1 Research approach

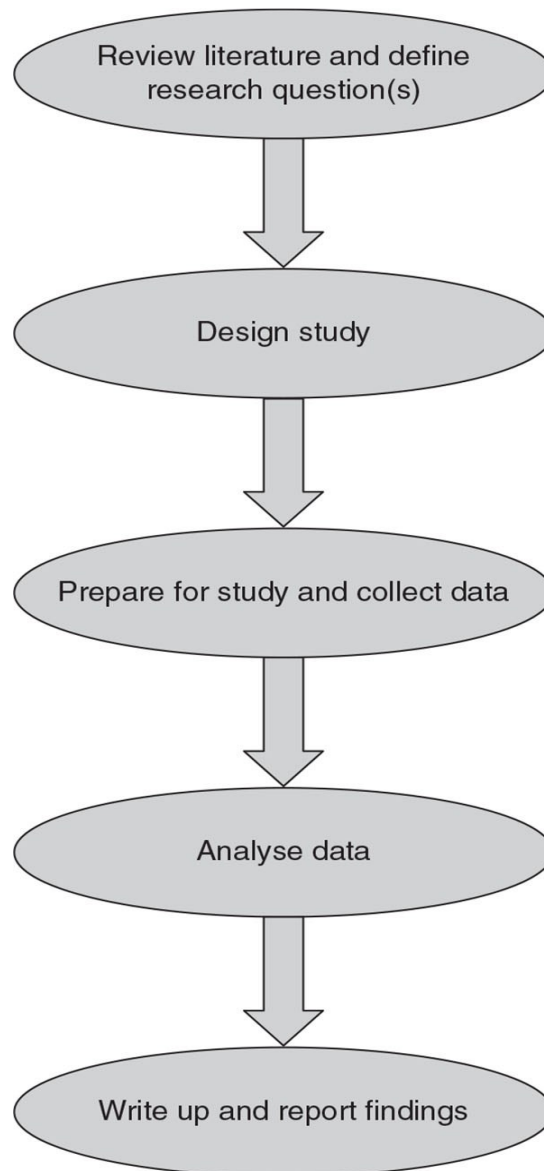
Efficient research is achieved when conducted with a specific and self-conscious purpose. After establishing the goals, an appropriate research approach can be created (Walle, 2015, p. 26). This study aimed to determine and answer the research question:

“How does customer feedback impact the service development process in manufacturing, and how should it be utilised in the different phases?”

As seen, the research question and purpose of the study are descriptive and explanatory. The decisions on the research approach depend on the research question and its purpose (Bluhm et al., 2011, p. 1869). Of all the different research methods, qualitative research is the most well-suited for description, interpretation, and explanation (Lee et al., 1999, p. 164). Qualitative research approaches the world as a complex and dynamic environment, which employs a combination of texts and talk to understand social and humanistic phenomena. With its more open-ended and flexible structure, it provides the opportunity for participants to voice issues without constraint (Azungah, 2018, p. 384). In addition, qualitative research is essential to uncover deeper processes in organisations and teams (Bluhm et al., 2011, p. 1870), and it supports the researcher in building a nuanced understanding of the phenomenon (Lester et al., 2020). Therefore, this study adopted a qualitative research design, particularly a single case study.

There are multiple strategies to evaluate data generated from qualitative research (Thomas, 2006, pp. 237-238). Qualitative data has three distinct characteristics: open-ended, concrete, vivid, rich, and nuanced (Graebner et al., 2012, p. 278). Such rich data can often be described as complex and require systematic procedures for analysing and reporting the findings. Such an approach, where readings and interpretations are made from raw qualitative data, is called inductive analysis. An inductive approach allows researchers to condense raw text, establish clear links between objectives and findings, and develop a model or theory on the evidence present in the data. An inductive approach is common in qualitative data analyses (Thomas, 2006, pp.238-239). Therefore, this study implements an inductive approach as its general research approach.

The case company proposed the topic of research. As the intention was to study a process and its related factors in a single organisation, a single case study was selected as the appropriate research strategy (Eisenhardt, 1998, p.534). Lee and Saunders (2017, p. 1) defined a case study as a “decision to study an instance, institution or phenomenon primarily as interesting per se”. The strengths of a case study lie in the ability to articulate a specific institution or phenomenon and its unique characteristics that combine to produce specific outcomes. Case studies should be selected for research when trying to understand unique qualities in a single unit of analysis (Lee & Saunders, 2017, pp. 9-10). Therefore, this study utilised a case study as its research strategy and followed the orthodox linear approach of a case study approach, as shown in Figure 9.



**Figure 9.** Orthodox linear approach (Lee & Saunders, 2017, p. 4).

### **3.2 Case company**

The case company under study is a technology company that operates in the marine and energy markets, providing products, solutions, and services (Case Company, 2025a, [restricted availability]). Founded in the early 1800s, the company has gone through a long journey of transformations to reach its current place as a global leader in innovative

technologies and lifecycle solutions (Case Company, 2025a, [restricted availability]; Case Company, 2025b, [restricted availability]). In 2024, the company generated a comparable operating result of approximately 600 million (€), of which the Marine Business accounted for over half. The company is based in Helsinki, Finland, and it employs around 18,000 personnel in over 200 locations around the world (Case Company, 2025e, [restricted availability]). This research focused on the marine division of the business. The Marine business provides technology products and solutions to the business-to-business market, with its portfolio including engines, propulsion, and other hybrid solutions relating to the marine industry (Case Company, 2025c, [restricted availability]). The company and its Marine Business can be described as a significant global actor in its representative market.

With the current trend of servitization and its profound benefits to manufacturing companies (Baines et al., 2017, pp. 256-257), the case company has started to shift its focus more to services in addition to traditional equipment manufacturing. In the company's strategy, services are seen as a key driver for organic growth, and therefore, growth in services is also listed as a strategic priority. With its extensive history in traditional equipment manufacturing and the current increasing shift towards services, the case company perfectly represents a servitizing company as described by Baines et al. (2009, p. 563).

The company's Marine Business operates in a challenging environment of diverse customers, unique operating requirements, advanced technology, and increasing regulation (Case Company, 2025d, [restricted availability]). Together, these different characteristics compose a challenging market with complex customer needs. The company can be seen in an environment of increasing pressure for new service development and customer demand. Previously, customer participation has been found to positively influence new service development performance and outcomes, with it being essential when facing complex customer needs (Morgan et al., 2024; Morgan et al., 2019). This research defined customer participation as a form of customer feedback. Therefore, the case company presents an ideal environment to study and answer the research question about

the dynamics of customer feedback and the service development process, presented previously.

### **3.3 Data collection**

Empirical research involves several choices for data collection (Aguinis et al., 2021). As previously established, the research question required the study to adopt a qualitative approach. Qualitative research turns knowledge and experiences into qualitative data used for empirical analysis. On a methodological level, qualitative research can be approached in multiple ways. Within these approaches, talking to people is used as a starting point to analyse social phenomena (Flick, 2018, pp. 3-16). The ability to analyse social phenomena was previously stated as a reason to adopt a qualitative research approach (Azungah, 2018, p. 384). Therefore, the study adopted talking to people as the qualitative method for data collection.

The traditional form of talking to people is via interviews driven by a question-answer sequence (Flick, 2018, pp. 3-16; Roulston & Choi, 2018, pp. 233-249). Research interviews can vary according to the structuring of the interview. In a semi-structured interview, researchers sequence pre-formulated questions about the relevant topics; it also allows researchers to ask follow-up questions relative to the interviewee's answers. This allows the participants to generate a free-ranging conversation about the research topic, which is directed by the participants' input (Roulston & Choi, 2018, pp. 233-249). As there are pre-determined topics in the research question, the interviews were semi-structured, with the interview guide including open questions around the specified topics. The questions included information about the participants' background, experiences with the service development process, and experiences with customer feedback. In the end, the interview was summarised with a summary question. The interview guide can be found in Appendix 3.

Before the interviews, the prospective participants were approached with a general introduction to the interview and its principles. The introduction email can be found in Appendix 1. Apart from the topic, no additional information was provided to the participants, and no preparation was required by the participants. After that, the prospective participants were sent an individual proposal for the meeting time. All the prospective participants accepted and participated in the interview.

The interviews were conducted one-on-one between the researcher and participants on the internal workplace platform Microsoft Teams. The interviews were video recorded and transcribed with the available functionalities within the platform and with the consent of the participants. One (1) hour was reserved for each interview; the interviews ranged from 30 minutes to a whole hour, depending on the participants' answers. All interviews were held in English to maintain consistent use of company-specific terms, which stem from the use of English as the official working language in the company. The video recordings were used to clarify and confirm uncertainties or errors in the transcripts, as the automatic transcription feature caught some disruptions or inaccuracies in a few instances.

In-depth qualitative research is typically limited to a few instances or units. Purposive sampling is used to achieve information-rich answers to the research question (Schreier, 2018, pp. 84-97). At the case company, a sellable package of products and services is referred to as an offering. In the Marine organisation, the responsibility of developing offerings is under an Offering Development team (Case Company, 2025f, [restricted availability]). These offerings represent an equivalent to the integrated solutions described by Miller et al. (2002, p. 3). Therefore, through purposive sampling, this research studied the case of customer feedback usage in the development process used by the Offering Development team.

The service development process is a joint effort of multiple stakeholders to develop sellable offerings towards customers (Case Company, 2025f. [restricted availability]).

Maximum variation sampling is used to describe all the variations of a phenomenon, because it allows representation of all different aspects in a case from different persons (Schreier, 2018, pp. 84-97). This study utilised maximum variation sampling in choosing the interview participants to capture the different aspects held by different stakeholders within the service development process. The scope of participants included users, participants, and developers of the process. The participants' list and relevant job titles can be found in Appendix 2. In total, the interview was conducted with 10 participants. Together with the case company, this was found to be an optimal number of participants to reach the necessary breadth while keeping the optimal depth to provide sufficient data for answering the research question (Roulston & Choi, 2018, pp. 233-249).

In addition to the interviews, the study used internal secondary data provided by the company. The secondary data included presentations and guidelines on the service development process and the way of working. The researcher used the data to better understand the participants' interview answers by clarifying the connections and context.

### **3.4 Data analysis**

The chosen research approach for the study led to the collection of qualitative data through semi-structured interviews. The interviews were recorded and transcribed into text format, which provided a large quantity of textual data. The study utilised qualitative content analysis to analyse the data. The objective of qualitative content analysis is to systematically transform a large amount of text into a concise and organised summary of the results; this allows the formation of categories and themes through which the latent meaning of the participants' answers is interpretable. (Erlingsson & Brysiewicz, 2017, p. 94).

Qualitative content analysis starts with open coding, in which the researcher sums up what is said in the text through short phrases, theories, or margins of words; this allows the generation of summary statements or words to capture independent elements

covered in the transcript to an initial coding framework. With the generated words or statements, the researcher can find similarities between the elements and build categories based on the initial coding framework. The reduced list provides the final category system, also referred to as the final coding framework (Burnard et al., 2008, pp. 430-431).

This study adopted the qualitative content analysis method described by Burnard et al. (2008, p. 430). The confirmed transcripts were transformed and reduced into summarised statements or words to form an initial coding framework, with the statements separated into categories to form a finalised coding framework. Tables 2 and 3 below present examples for the stages of reaching the initial coding framework and following the final coding framework.

**Table 2.** An example of an initial coding framework (adapted from Burnard et al., 2008, p. 430).

<b>Interview transcript</b>	<b>Initial coding framework</b>
Interviewer: "In which formats do you receive customer feedback?"	
Participant: "So, second-hand information from sales ...You can have a look at the technical request ...You can also have a look at the service work report ... the best would be obviously an interview face to face."	Second-hand information from sales Technical request Service work report Face-to-face interview (with a customer)

**Table 3.** An example of a final coding framework after reduction of the categories in the initial coding framework (adapted from Burnard et al., 2008, p. 430).

<b>Final coding framework</b>	<b>Initial coding framework</b>
1. Active/Personalised format	Second-hand information from sales Face-to-face interview (with a customer)
2. Passive/Codified format	Technical request

<b>Final coding framework</b>	<b>Initial coding framework</b>
3. Passive/Personalised format	Service work report

The data was analysed separately for each question asked in the interview and the relative follow-up questions, so an independent final coding framework was established for each question answered. This allowed us to analyse the answers to each question and the relevant content of the research question. This was done to provide a data structure for interpreting the findings in the interview data.

### **3.5 Data quality**

Case quality and associated practices vary widely. Addressing the quality of qualitative case research is important to achieve better insights, theory, and legitimacy (Beverland & Lindgreen, 2010, p.56). There are multiple criteria to assess the rigor of case studies. Commonly used criteria include internal validity, construct validity, external validity, and reliability. Adopting the criteria allows for addressing and enhancing the rigour of research (Gibbert et al., 2008, p. 1466).

Internal validity includes providing a clear research framework for assessing the relationships between observations in the research and previous studies. When analysing the collected data, internal validity ensures that the findings are comparable to established theory and have a clear structure for variables and their predicted outcomes (Gibbert et al., 2008, p. 1466). Issues with internal validity can stem from quality, quantity, and the covered time frame. Quality and quantity of data can be covered by expanding the same interviews to cover different people so that the participants represent multiple perspectives on the same topic. The time frame issue concerns research questions that address change and development issues over time (Diefenbach, 2009, p. 882-883). This study concentrated on current phenomena and practices, so the time frame is not significant.

This study addressed internal validity and its pointed issues by establishing a theoretical framework around two connected elements and basing the semi-structured interviews around the theoretical framework. The participants represented varying backgrounds and roles connected to the main elements, confirmed by the interview guide's questions. The quantity was previously found to be sufficient for the chosen research approach.

Construct validity refers to the extent to which the study investigates the relevant concepts. Firstly, construct validity is addressed with a transparent chain of evidence. It aims to present and construct the process from the initial research question to the conclusions. Secondly, triangulation should be adapted to reach varying angles from the same phenomenon (Gibbert et al., 2008, pp. 1466-1468). This study shows a transparent chain of evidence by elaborating on the data access through the interviews, explaining and providing examples of the data analysis process, and using data triangulation by ensuring the differentiation in the participant sources relevant to the concepts studied, as shown in Table 5 below.

**Table 4.** Participants' relation to the service development process studied.

Role description	Number of participants
Process development	2
Supporting functions	5
Product / Process Owner	2
Information Owner	1

External validity refers to the generalizability of the findings outside of the setting in which they are studied (Gibbert et al., 2008, pp. 1466-1468). It is debated whether external validity can be found in single case studies due to the inability of statistical generalisation and the nature of the specific issues and settings (Gibbert et al., 2008, p. 1468; Diefenbach, 2009, pp. 886-887). However, Diefenbach (2009, pp.886-888) argues that external validity in case studies can be reached by meeting the methodological standards required and providing a clear sampling of the preconditions and circumstances present.

This study addresses external validity by establishing a straightforward methodological approach for the study and presenting how the standards are fulfilled. Additionally, this study places itself clearly within the field by justifying the sampling and information about the case company.

Reliability in a case study addresses the issues of random error, which means that the research and the reached insights are repeatable. This is addressed by transparency in the documentation and research procedures (Gibbert et al., 2008, p. 1468). This study addresses reliability by providing the interview guide and participant list in Appendices 3 and 2 and clearly describing the methodological approach and measures used for the study in the methodology chapter. Additionally, the study provides the actual name of the case company and organisation under study.

Although this study has multiple means of addressing data quality issues, it still has some deficiencies that must be addressed. In terms of construct validity, the study lacks triangulation in terms of secondary data, mainly due to the company's internal guidelines. Some relevant information is determined as classified, so it cannot be disclosed in detail. Therefore, the information in the secondary data can only be addressed generally and not in detail. Regarding external validity, the restricted access to some secondary data presents issues in providing details and transparency.

## **4 Findings**

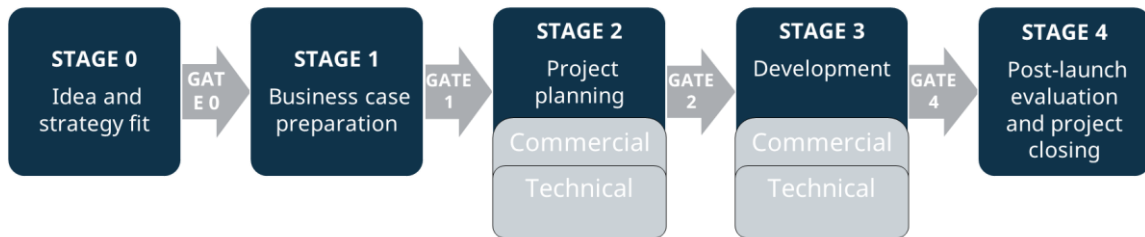
The findings section of the study aims to answer the research question and present the analysed data and its insights concerning the established theoretical framework. Firstly, the findings will present a general overview of the service development process and the separate phases used by the company. It aims to understand what information is helpful and should be gathered from the customer in separate phases. Secondly, an understanding of the different means and elements of customer feedback and participation, and types will be examined. This will present an overview of the impact that different means, formats, and types of customers and customer feedback have on the service development process. Lastly, the two streams will be connected and summarised with the revised theoretical framework.

### **4.1 Service development process**

The first section will explain the current service development process and its phases. It shows how and which different stakeholders are involved in the process, what their general input is in the stages they are involved in, and how the process is structured. Additionally, it reflects the service development process used in the company on the theoretical background.

#### **4.1.1 Structure**

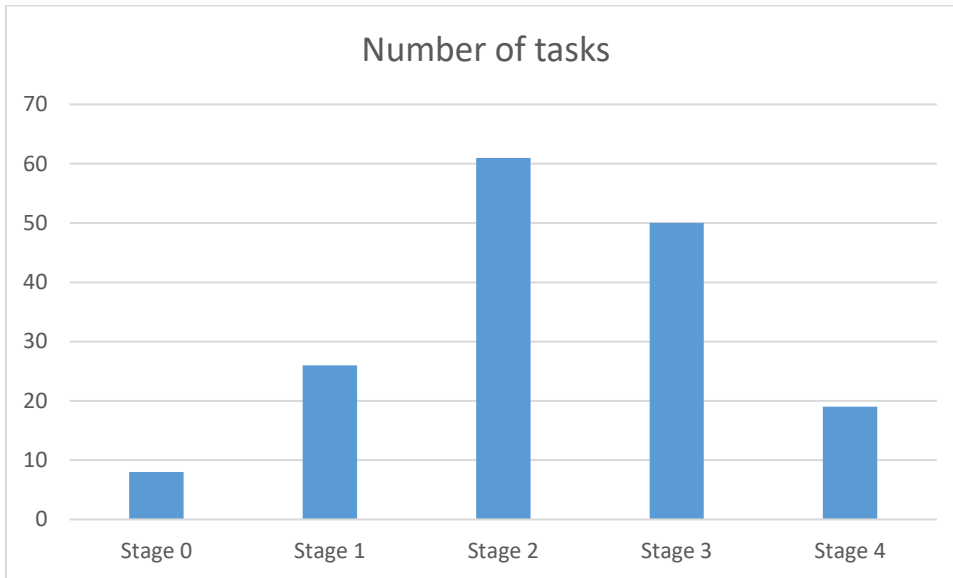
The service development process was previously established as a pattern describing the process in different phases and stages based on a development scheme. The different stages include multiple activities that are required to develop services. Depending on the model or framework, the activities can be established in multiple orders or levels of detail. The service development process and its stages used by the case company are presented in Figure 10.



**Figure 10.** The service development process used by the case company (Adopted from Case Company, 2025f [restricted availability]).

Multiple features connected to literature can be found when examining the service development process. The process is linear, with stages 2 and 3 including parallel elements. After each stage, a gate exists to examine the process and deliverables before advancing to the next stage. The service development process examined includes characteristics from both the service industry and the manufacturing industry, compared to the examples presented in the study. However, when examining the characteristics of the process, no cyclic tendencies were identified, which were present in all the examples of manufacturing industry-related processes.

The process is guided and structured by tasks related to each stage. Tasks in each stage involve multiple matters such as design, finance, commercial, and operational matters. The emphasis of the tasks in relation to the stages is represented in the graph below. The graph shows how the process is accentuated in the middle stages, where parallel elements are present.



**Figure 11.** Number of tasks in relation to the stages.

Different stages serve different purposes and are used to generate the relevant input for advancing to the following stage. Output of each stage is evaluated in a gate meeting where a decision on advancement is also made.

**Stage 0** screens and evaluates the potential ideas for new development. Input is collected from stakeholders through various channels. Ideas are described, categorized, and mapped in correspondence to customers, offering, and strategy (Case Company, 2025g [restricted availability]).

**Stage 1** generates a business plan in which the feasibility of the idea is checked in terms of commercial and technical approach. It supports the generation of a business case and is crucial for the approval of continuing to develop the offering (Case Company, 2025g [restricted availability]).

**Stage 2** defines the commercial and technical inputs that are required to develop the sales phase of the offering. The needed resources and technical requirements are

identified to create a sales and marketing model (Case Company, 2025g [restricted availability]).

**Stage 3** facilitates technical development, which includes design, sourcing, testing, and validation. In parallel, sales phase and launch actions are prepared (Case Company 2025g [restricted availability]).

**Stage 4** consists of the market phase and project closing. Launch activities are executed, and sales activities are regularly monitored and developed to ensure commercial success (Case Company, 2025g [restricted availability]).

To summarize, the development process consists of an approach where activities and outputs follow each other through the following stages. The development is approached as a linear process, with a project closeout. Cyclic elements only come into action if the input of a stage is insufficient and requires adjustment based on the evaluations of the gate meetings. The stages have defined topics and consist of detailed tasks to be completed.

#### 4.1.2 Participant involvement and input

The participants were asked about their involvement and input in the process to understand the requirements in each stage. The Table 6 below shows the degree to which the participants were involved in the process (Case Company, 2025g [restricted availability]).

**Table 5.** Participants' direct involvement in the service development process.

Participant / Stage	0	1	2	3	4
1	X	X	X	X	X
2	X			X	X

Participant / Stage	0	1	2	3	4
3		X	X	X	X
4					
5		X		X	
6					
7				X	
8			X	X	X
9		X	X	X	X
10					

As seen from the table, the participants are involved in various stages of the service development process, and every stage involves participants. However, there is a clear emphasis on the latter stages, with the involvement being moderate in the initial stages of the process. This distribution mainly arises from the fact that the first stage consists of idea gathering and quick evaluation of strategy fit, where not many people are generally involved. Participants explained that when the required input is moderate, so is the number of people. This can be further confirmed when examining the number of tasks shown in Figure 11. The latter stages of the process include more tasks and a greater degree of evaluation in terms of design, finances, and operational matters.

*“In stage 0, decisions are quick and easy. We are there, but not necessarily.” (Interviewee 3, Product manager)*

Participation may also be dependent on the case, scale, and potential. Depending on the case, the required input from the start may be greater, which is reflected in the involvement of participants.

*“So actually, depends on the level of the product. So, if it is a bigger product, then I keep my involvement in every gate.” (Interviewee 7, Product Manager)*

However, when asking the participants about the degree of importance of each stage, the findings varied when compared to the involvement and the number of tasks. More emphasis is put on the earlier stages and less on the last stage, as seen in the Table 7 below. This can be explained by the fact that the first two stages have the most significant impact on the go/no-go decision that is made in the gate meeting between stage 1 and stage 2. This decides whether the solution goes forward to development and requires funding. Therefore, the execution of the first two stages affects whether the solution even has potential for development and commercial success. Multiple participants highlighted the importance of the first stages.

*“I think probably the first stages in the beginning are quite crucial. The decision to go start a development is an important decision... will we go ahead with this and with this amount of money?” (Participant 2, Customer Offering Engagement Manager)*

*“The first ones when we decide (to continue) or kill the project.” (Participant 9, Operational Support Manager)*

*“When you are selecting from the backlog the ideas which need to go forward... that stage is very crucial that we work on the right problem and the right ideas, and many need to be scrapped, but selecting the right ones and prioritizing.” (Participant 5, Customer Offering Engagement Manager)*

Participants also highlighted the importance of the latter stages and especially the nature of the linear process. Closing out stages appropriately influences the following stages and impacts on the overall execution of the process. Also, differences in emphasis can be explained through the involvement and background of the participants. Participants tended to highlight the stages in which they are more involved. Product managers highlighted the development stage, whereas participants working with idea generation or validation had an emphasis on the earlier stages.

*“Gate 2 is very important because as soon as you have done a good planning, then it will be easier with the execution, and if you have done a good planning, the budget is realistic.” (Participant 3, Product Manager)*

*“Stage two between Gate 2 and Gate 3. That is the complete development. Everything happens between those two gates.” (Participant 8, Product Manager)*

*“Every gate is important, and if you do not open or close that gate properly, you are not going to achieve anything.” (Participant 7, Sales Development Manager)*

**Table 6.** The most important stages of the process, according to participants.

Participant / Stage	0	1	2	3	4
1	X	X			
2		X	X	X	X
3	X	X	X		
4					
5	X	X		X	
6			X	X	
7			X	X	
8				X	
9	X	X			
10					

As we analyse the impact of customer feedback on the process, it is further important to build a better understanding of the requirements in each stage. To achieve that, the participants were asked to elaborate on their input provided in each stage. Below are gathered descriptions of each stage and their required input.

**Stage 0** is characterised by the generation of the concept from ideas and understanding the need for the customers. Concrete steps to acquire the information from the customer may be made, but at this stage, a lot of the inputs are still mainly internal.

*“One of the things that we were discussing already in the early phases for that project was that we would need to understand better customer needs... organize customer interviews to understand it better so that we will develop something that*

*creates truly customer value.” (Participant 1, Offering Development General Manager)*

*“Tasks from the internal engagement perspective to make the concept clear... internal feedback and customer engagement... arranging interviews... preparing questions... preparing a summary of the results.” (Participant 5, Customer Offering Engagement Manager)*

**Stage 1** places the concept into the environment where the upcoming requirements regarding the solution and organisation are mapped. The decision to commit to development is made after this stage, so evaluation of the concept is made from all aspects, and the value proposition is determined. The input is used to validate the potential and initial idea for development.

*“Start then, like preparing the value proposition and also do the first initial like a commercial launch plan.” (Participant 2, Customer Offering Engagement Manager)*

*“The product value proposition has to be made ready.” (Participant 7, Sales Development Manager)*

*“We plan the development... define if we have to make some design, if we have to develop something new... we show our plans, we review the idea, we review the business case, and if it has changed” (Participant 3, Product Manager)*

**Stage 2** descriptions show the parallel elements of the stage. Multiple tasks are executed in different segments, and the work on the solution begins. Multiple stakeholders are involved, and the solution is getting a concrete shape. Input is used to facilitate the upcoming development.

*“The sales, sales potential... what about the project is related to sales” (Participant 9, Operational Support Manager)*

*“Planning the sales, marketing, and launch activities... marketing content.” (Participant 4, Market Performance Insights Manager)*

*“We will arrange a kick-off meeting with the stakeholders who should be involved in this development project... Depending on the size of the project, we have*

*technical service representatives... possibly the field service... design department... marketing team... when we go for Gate 2, that is the plan, how we are executing the project.” (Participant 8, Product Manager)*

*“There is a lot of technical work, so design, drawing, testing.” (Participant 3, Product Manager)*

**Stage 3** includes the technical and commercial production of the solutions. Actual deliverables are made, and the solution is prepared for market launch. Input revolves mainly around materials and concrete deliverables around the solution.

*“There is a lot of commercial material to be developed.” (Participant 7, Sales Development Manager)*

*“We are ready with documentation... bulletins... specifications... manuals... we involve marketing people... show our plans how to move forward also in front of the market, and we start planning the market launch.” (Participant 3, Product Manager)*

**Stage 4** launches the solutions fully to the market, analyses the results, and includes potential developments on that approach before closing out and handing it over to the lifecycle. Input is used to confirm the success or areas of improvement for the solution.

*“We do this market launch, we gather information from the market... formal closure, including also market launch analysis... hand over to the product manager for the lifecycle.” (Participant 3, Product Manager)*

*“Have the internal engagement and external engagement... post launch evaluation... depending on what kind of marketing activities we have, we go through those... should we improve or increase, for example, marketing activities... we are also closing then the whole project.” (Participant 2, Customer Offering Engagement Manager)*

Overall, the input required by the participants is diverse and tied to their representative role. It reflects the multiple stakeholders required throughout the process. The quality of the input is always addressed in the gate meetings and potentially revised if necessary.

With the descriptions of the input, it is possible to analyse what kind of information is sought from customer feedback in the different stages.

## **4.2 Customer feedback**

The following chapter will present the usage and gathering of customer feedback in the organisation. It will present the means and formats in which customer feedback is acquired, how its usage is currently seen by the participants, and how it should be adopted in the future. Additionally, the chapter ties the findings to the theoretical framework.

### **4.2.1 Customer feedback impact and usage**

To understand the impact customer feedback has on the service development process, it is necessary to research how customer feedback is approached, acquired, and used in the organisation. Customer feedback was previously determined as “any form of communication, information, or insight concerning products or services that originates from the customer”. As such, the participants were asked to describe how customer feedback impacts their position. This allows us to understand how the participants work and approach customer feedback in general, which is key when trying to further understand the implications for the service development process.

The first question regarding customer feedback was intentionally broad and allowed for a range of interpretations. Multiple participants described customer feedback as highly important or even crucial for their role.

*“Customer feedback for a product manager is very important. It is fundamental because, in the end, what we do is develop. We keep our product; we develop a new one or develop an existing product based on customer needs if the customer needs it. Suppose the customer needs something different. If a customer needs something new, we have to know, and we must take that into consideration in order to create something that is meaningful and valuable for the customer.” (Participant 3, Product Manager)*

*“Engaging with the customers is the core of my role, and if we do not get, if we do not engage with the customer, we do not collect the feedback... I think it is critical that there is feedback” (Participant 5, Customer Offering Engagement Manager)*

However, it is worth noting that multiple participants mentioned that the involvement and impact of customer feedback should be even greater. Reasons for this insufficiency in customer feedback usage were also raised, but those are covered in further chapters.

*“The customer feedback and customer engagement are important parts of our team's work and our team's role... this is something that we would even like to do more so sometimes it is not so easy.” (Participant 1, Offering Development General Manager)*

*“Yeah. It should be, I think, a bigger issue for me, or it would be more important for me than it is, actually. So, I would like to be maybe more involved, and I think one of my role descriptions is also to help gather this customer feedback” (Participant 2, Customer Offering Engagement Manager)*

*“Obviously, it is customer feedback. Feedback is very, very important, but we do not, at least I do not, have any systematic tool or way of working to collect and gather and have the customer feedback collected or processed.” (Participant 10, Service Offering Lead)*

Lastly, some participants described customer feedback as having little to no impact on their roles.

*“It might, and I mean now that we have discussed improving the customer feedback steps in the SODL process, I think that it will have a direct impact on the process development. How are we going to document and do it? Through that, but otherwise, if you think about it, more like a role within SODL of process, then obviously no.” (Participant 6, Process Development Manager)*

*“Depending on the feedback, but of course, I am not directly linked to customers.” (Participant 9, Operational Sales Manager)*

*“It does not impact my role at all. As a role.” (Participant 8, Product Manager)*

The impact of customer feedback varied largely between the participants and was tied to their roles and responsibilities. The answers further highlight diversity among the stakeholders tied to the development process and show that the level of work with customer feedback differs widely.

In the theoretical background, it was established that customer feedback and its purpose of use can vary. The participants were asked for what purposes they gather feedback. This was done to further understand the usage and purpose of customer feedback and how it further aligns with the requirements of the service development process. Through the finalised coding framework, five initial categories for customer feedback purposes were identified, as presented in the Figure 12 below.

**Strategic development planning**-related answers were the most identified. The category represents topics that relate to developing and evaluating future actions in a broader context and do not necessarily provide input that is directly utilised in the development processes.

*“There might be many different use cases (for customer feedback) ... create the roadmaps and kind of offering development plans for future... also then understanding different trends and different kinds of needs and input for the planning processes as well.” (Participant 1, Offering Development General Manager)*

*“Customer feedback should also guide us in a way to improve, maybe our offering and our offers in general.” (Participant 9, Operational Support Manager)*

**Operational performance measurement** represents feedback that reflects customers' experiences of different aspects of the company's operation. This may include experiences in service and product performance, or generally the support that the customer receives throughout the relationship.

*“I am more in the sort of business of analysing and distributing insights to sales and other stakeholders based on it... the whole point is, of course, to understand the customer experience and then understand if we have some improvement*

*areas... it is sort of a gold mine for understanding where to develop the business and what products we need to develop, like in the offering development... Also, how we basically operate our business and how our delivery works and all of that stuff.” (Participant 4, Market Performance Insight Manager)*

*“Of course, we are also asking if they have some challenges with us with our organization... It can be related to field service activities, spare part delivery times, and things like that.” (Participant 8, Product Manager)*

**Market and product validation** focus on the feedback of the actual product/services. It reflects the general market anticipation and response, which can have a direct impact on the development process.

*“So existing products, you can also get feedback on those to improve continuously, and on new solutions we are trying to gauge whether there is a target market for it and whether they will pay for it.” (Participant 5, Customer Offering Engagement Manager)*

*“When I have a new product, a new solution, a new idea, I need it to be benchmarked with the customer, because people come to you with an idea, it looks wonderful and very interesting, but then is it really?” (Participant 3, Product Manager)*

*“To think about. Do they go ahead with the product? Do we need to change the product or change the approach we have with the product?” (Participant 9, Operational Support Manager)*

**Innovation and customer problem identification**-related feedback most clearly revolves around the customer. It directly focuses on the customer needs, problems, and desires, which then further develop into innovations and new ideas to develop.

*“So, the feedback is to understand if you are working on the right problem and understand the pain points of the customer.” (Participant 5, Offering Engagement Manager)*

*“So, we have been discussing the sort of projects, and of course, when we develop new offerings, the customer feedback is important...the feedback is important so that we also kind of have potential new ideas.” (Participant 1, Offering Development, General Manager)*

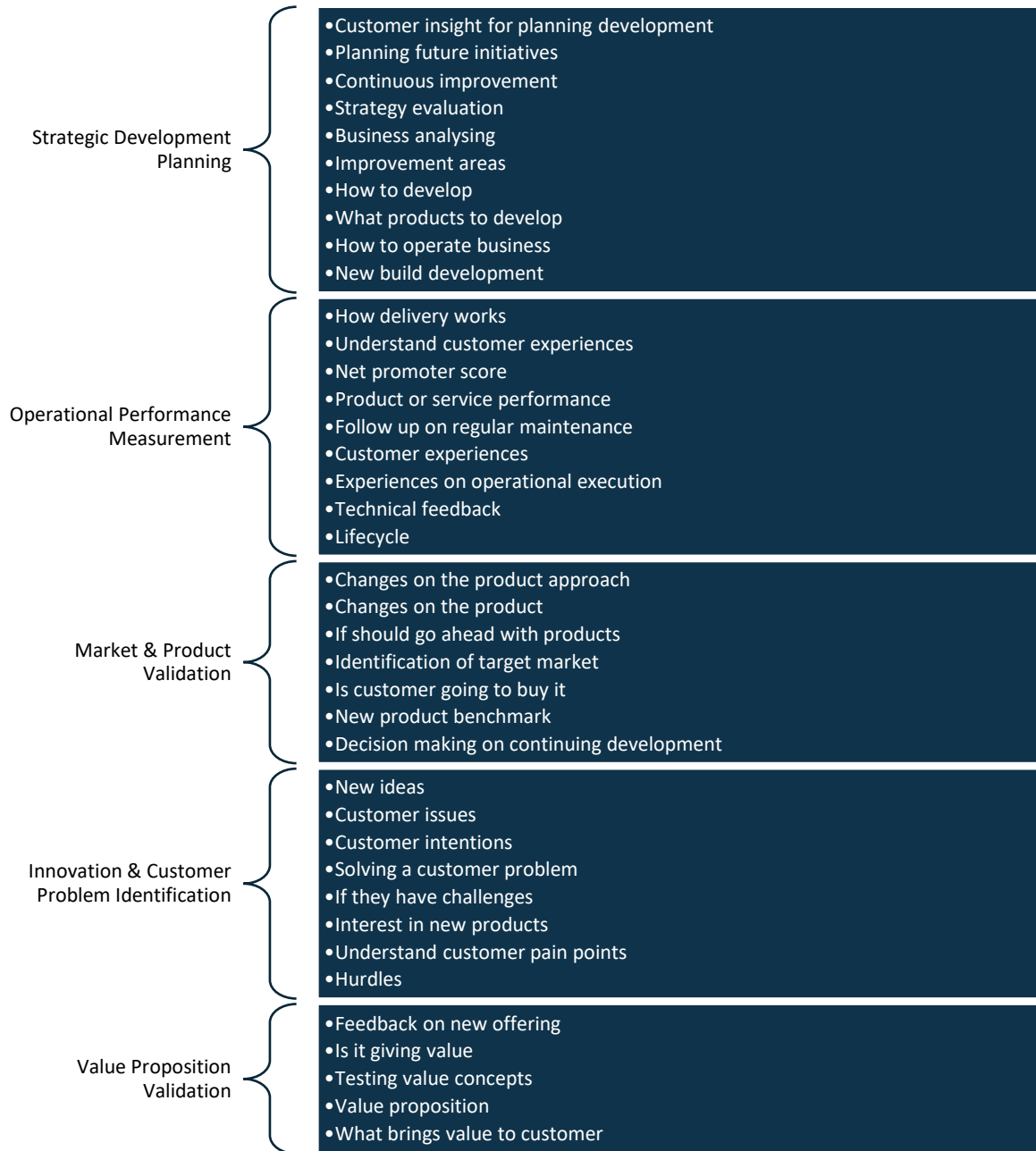
**Value proposition validation** is the most clearly defined group, and it can be directly connected to the development process. Value proposition-related feedback evaluates the solution under development and justifies the whole process.

*“You have to find an answer yourself, by contacting some customer and show your idea, showing your proposal, a prototype maybe and see and have a chat and have a discussion and see what they think about it... because if you fail, if you come out with stuff, you spend money time and you develop something that nobody wants, then it is really sad. It is a lot of money spent, time spent, that can be used for something else.” (Participant 3, Product Manager)*

*“What kind of solutions will bring value for them?” (Participant 8, Product Manager)*

*“To validate our concept or solution... Clearly enough that we can make the right value propositions towards them.” (Participant 5, Customer Offering Engagement Manager)*

The five different categories represent the diversity of purposes that customer feedback can be used for. They ranged widely from clearly defined applications to broader and more comprehensive purposes. The range of purposes is important to note, as it can affect how said feedback is gathered. Additionally, through the categorisation of feedback, it is possible to recognize and connect the feedback to the different stages, tasks, and requirements of the development process. That will be established in the further chapters.



**Figure 12.** Customer feedback purpose categories.

#### 4.2.2 Customer feedback challenges and opportunities

The last subchapter presented the impact and current usage of customer feedback from the perspective of the participants. The previous answers already revealed some direction of challenges in the work with customer feedback and highlighted that these

challenges affect the usage and potential impact of the feedback. When thinking about applying customer feedback to the service development process, it is important to understand the potential challenges and how to overcome them. Therefore, the participants were asked to elaborate on the challenges and to provide possible solutions for making work with customer feedback more plausible.

When talking about the challenges, participants were free to say any challenges they perceived in any way to working with customer feedback. Having a systematic approach to customer feedback requires considering all the possible challenges that may hinder the usage or quality of the feedback, as implementation of a formal process is useless, especially if it does not receive the necessary input it requires. From the participants' answers, five main categories were identified when asked about the challenges in using customer feedback in the service development process, as shown in the Figure 13 below.

**Communication and data quality**-related answers were by far the most identified challenge. Multiple answers describe the issue of interpreting the feedback and reflecting it accurately in the correct context. Data may also be affected by individuals on the giving and receiving ends or between them.

*“The lack of understanding of customer problems is kind of the starting point of all, I do not know. It is just how we raise the questions to customers and how all the men in the middle are then conveying this message towards us.” (Participant 6, Process Development Senior Manager)*

*“So, understanding what specifically the customer is referring to is quite often an issue. So, to really understand what you would need to act on can be quite tricky.” (Participant 4, Market Performance Insights Manager)*

**Culture**-related answers reveal that even though customer feedback is perceived as valuable and important amongst the participants, it may not be the same in other parts of the organization. This shows a lack of responsibility and support in the process of using customer feedback, which eventually is an issue of internal alignment.

*“Find someone who can help you, who is willing to help you to organize these calls.”  
(Participant 3, Product Manager)*

*“What kind of support would we be getting then from the frontline sales in order for us to raise the customer?” (Participant 6, Process Development Senior Manager)*

*“We are not dared to talk to the customer... we are not taught to talk to the customer.” (Participant 7, Sales Development Manager)*

**Infrastructure**-related answers highlighted the issue of missing means and tools for collaborating with customer feedback.

*“We do not have a repository place, like a storage location for all this feedback; we are developing it. People are storing it in their OneDrive, or it's in emails or chats, things like that, which is not easily accessible except to the user... When there is too much feedback, you need some AI tools or something to pick out the main elements, kind of, because customers can talk about so many different things, and then you want only to have what is relevant for your kind of, yeah, development.” (Participant 5, Customer Offering Engagement Manager)*

*“We have this tool where the feedback goes and you can sort of see the NPS score and some of the responses, but not all the responses, which is again an issue that you are sort of having only part of the data there and it is also not connected to specific customers, so you do not know who exactly said it, so you do not really understand that.” (Participant 4, Market Performance Insights Manager)*

*“And of course it should be received systematically in a tool, to be available, to be analysed.” (Participant 10, Service Offering Lead)*

**Time management**-related challenges were recurring in multiple participants' answers—issues related to both accessing the customer and to the time consumed working on the feedback.

*“The biggest challenge is that it is not easy to get access to the customers if we want to interview them. Usually, it takes quite a long time to organize customer feedback collection, for example, with the sales and account managers.”*

*So, they are busy, customers are busy.” (Participant 1, Offering Development General Manager)*

*“It is time-consuming, because agendas are always full. So, it is taking time. It is not that easy. Moreover, yes, it is a time-consuming and slow process. You have to go one by one with the interviews, and obviously, you would like to have many, but then it takes too much time.” (Participant 3, Product Manager)*

*“We are extremely busy with our own things. We have not travelled to the customer many times, because of cost, but also because we are heavily involved in other topics. That is a main challenge.” (Participant 7, Sales Development Manager)*

*“Planning the schedule with the customer because they can be traveling, for example, Chief engineers or Superintendents can also travel on the vessels, so as to find a date when it is suitable for everybody. There are quite a lot of people involved. And yeah, so time is also one really time-consuming thing, so it is not so easy to do.” (Participant 2, Customer Engagement Manager)*

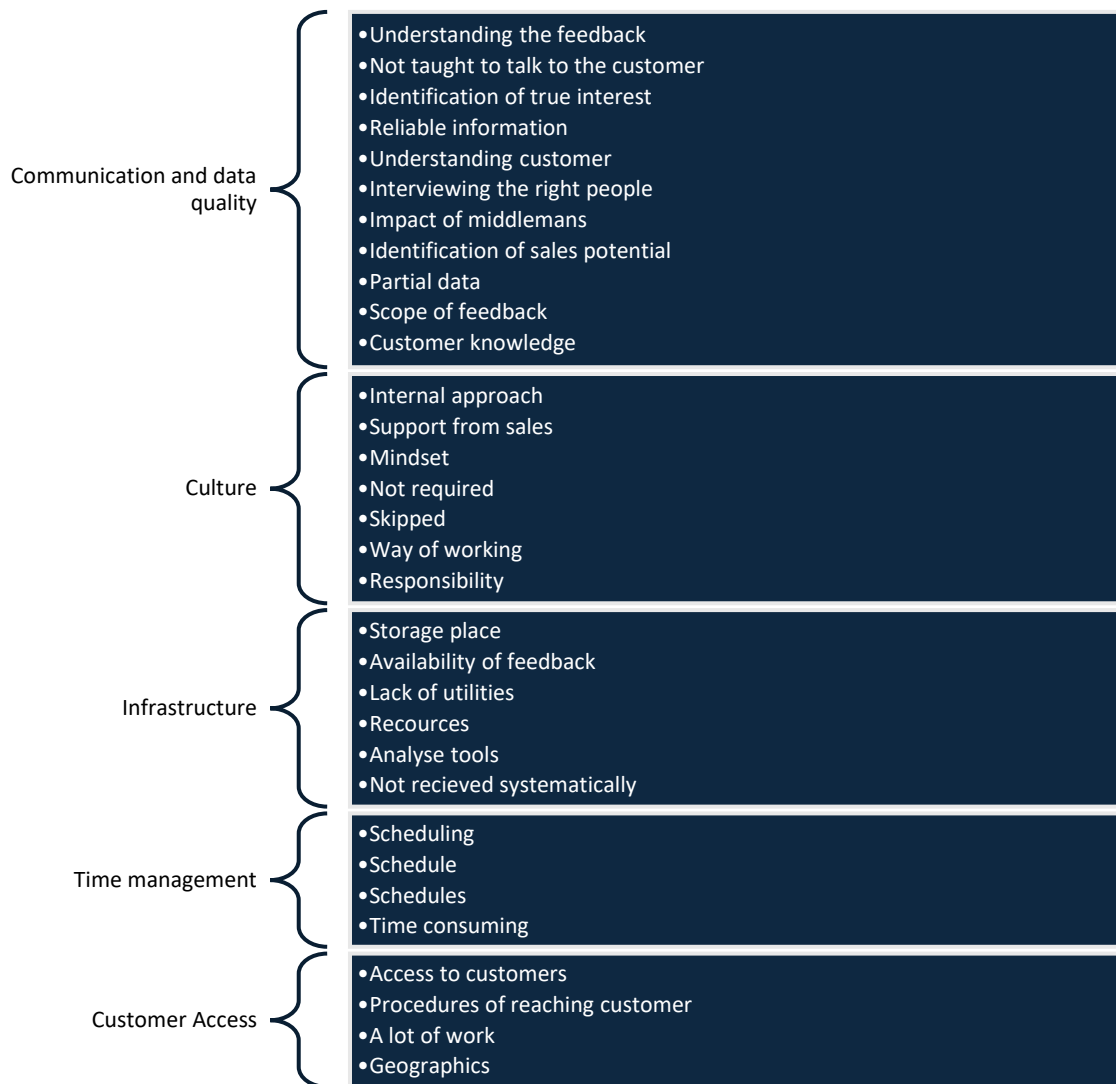
**Customer access** closely relates to time management issues, but was identified as its own category, as the issue with customer access was not only tied to the time, but also general permission, responsibility, and possibility to reach the customers.

*“Do it together with the product manager and plan it, and then you need to check with the Sales Managers. Can we proceed with this and contact your customers? Because we always go through the Sales Manager. We are never going to customers right away. We always check with the sales managers. Can we contact your customer to check with them?” (Participant 2, Customer Engagement Manager)*

*“If you do not know something, you want to know more. Then you have to go for this feedback, and you have to decide which customer you want to contact. Discuss with them. Find someone who can help you (customer side) and who is willing to help you organize these calls.” (Participant 3, Product Manager)*

*“1st is that depending on who will collect the customer feedback and interview the customer.” (Participant 9, Operational Support Manager)*

Participants highlighted multiple challenges related to the work on customer feedback. Challenges are found throughout the chain, starting from the customer side to the end of storing and analysing the feedback. Lack of clear communication, pathways, and responsibility is identified in the approach to collaborating with customer feedback. Different roles impact the experiencing of challenges, but also shared common challenges are identified.



**Figure 13.** Customer feedback challenges.

To build a comprehensive picture of the current situation, participants were asked to further elaborate on how they think the challenges should be addressed. The question

was asked immediately after the previous one, so the participants were allowed to connect their suggestions based on the challenges they highlighted; however, the question was framed as “What would make it easier to gather and use customer feedback?”, so it did not restrict the participants to addressing their suggestions based solely on the challenges. Again, based on the answers, five distinctive categories were identified as presented in Figure 14.

The systematic approach to customer feedback requires establishing clear steps and means. Therefore, gathering ideas from the participants is crucial, as they are affiliated with or function as users in the process. Their experience in the way of working provides an important basis to gather suggestions for addressing the perceived challenges.

**Customer engagement method**-related suggestions were the most identified and stood out from the other answers. Participants were eager to describe the suggestions and provided a lot of concrete examples. These suggestions were described to answer the challenges of customer access and communication quality by providing a clear path, connection, and structure directly to the customers.

*“Bring them to a big dinner event just to spend time with them, gather information. There should be a lot of people... some technical people... also commercial people to listen properly... we should increase this kind of input.” (Participant 7, Sales Development Manager)*

*“Have this template ready, so that you can, like, have some example questions that you can choose from and then modify if needed so that it will help everybody.” (Participant 2, Customer Offering Engagement Manager)*

*“I would say you still need to do interviews, and that is because you want to go more in-depth, in detail about the value proposition and the exact customer, business model, and how our solution would fit into this, and that is harder to get out of a survey. That I think you can only do through interviews.” (Participant 5, Customer Offering Engagement Manager)*

**Infrastructures and tools** related suggestions answer directly to the challenges that were identified about them. In the suggestions, participants went further to elaborate on the desired functions and features. Additionally, better usage of current tools was highlighted.

*“One database for customers. If you have a, let us take specific engine as an example, have a database for that specific engine related feedback, but then we should categorize the feedback. Is it component-related feedback? Is it the performance-related feedback? Reliability-related feedback, or environmentally related feedback, or something like that. Maybe we should have something that is related to or linked to an online service portal or CRM.” (Participant 8, Product Manager)*

*“Maybe CRM we can use more, because the sales organization can write a report, information, or notes that I do not know if they do. I have gone through the opportunities for my own analytics, but I have not often seen interesting information. Sometimes after a sales case is closed, you find the sales calculation and the quotation; sometimes you do not even find those.” (Participant 3, Product Manager)*

*“Of course, having like tools which are easy for you, like you know these analytical tools, the storage location, things like that, like processes, standard processes, templates. Things would simplify the collection. Collection is one thing, and utilization is another... I think we collect a lot, but why we are not utilizing it is also because it is too difficult, because the storage is not a common storage. If everybody has their own, and then you do not have an overview.” (Participant 5, Customer Offering Engagement Manager)*

**Customer sampling** category suggestions include matters around the number and emphasis on the chosen customers providing feedback. These factors can be seen to link to the challenge of feedback quality.

*“The approach to whom do we want? To approach the product, which are the main target segments for that specific product, and who are then the customers in that field? Then, from the customer field, identify who the key players are and the ones we would like to interview. Then think about that also in the wider perspective, in the way that OK, maybe interview the customers’ technical managers, chief engineer, whoever can give actually constructive feedback.” (Participant 9, Operational Support Manager)*

*“Before we start the development, to really check that we have a customer base, are they interested in buying this kind of a solution... reserve more capacity resources for these interviews.” (Participant 2, Customer Offering Engagement Manager)*

*“To understand who you are getting the feedback from. So, in our sort of business-to-business environment, our organization is, first of all, quite complex; our products are complex. Whom are we selling it to at the customer, versus who is then buying it from us, whom we are delivering it to? So, who is it actually? If it is a physical product. Who is receiving it on the customer end, and then maybe installing, and the actual user might most probably be different people. So, sort of understanding and having access to the correct person.” (Participant 4, Market Performance Insight Manager)*

**Feedback processing** is an issue that is linked to both new and existing feedback. In many cases, sufficient feedback already exists within the company but is underutilised due to the lack of standard storage and formats. It was also found discouraging to gather feedback when no feedback on its utilization is received.

*“And, then the, let us say periodic to review and analyse the feedback. I think that would make it easier, more systematic, more reasonable.” (Participant 10, Service Offering Lead)*

*“Clear classification of customer feedback, proactively pursuing some information by interviewing, or how can we get that kind of existing customer feedback? All the information that some guys have in this company.” (Participant 6, Process Development Senior Manager)*

*“I think one thing is that it should be systematic so that it is not like random, and it is also systematically utilized. And one very important thing is that there is a feedback loop. So, if we have been asking for customer feedback and then received a bunch of feedback, then it is something that we would need to go back to customers as well, so it is important to have that loop as well.” (Participant 1, Offering Development General Manager)*

**Accountability** was identified as a core topic that would make customer feedback gathering and utilization more efficient. The appointment of people or teams was seen to better dedicate the responsibilities around customer feedback, which are now too

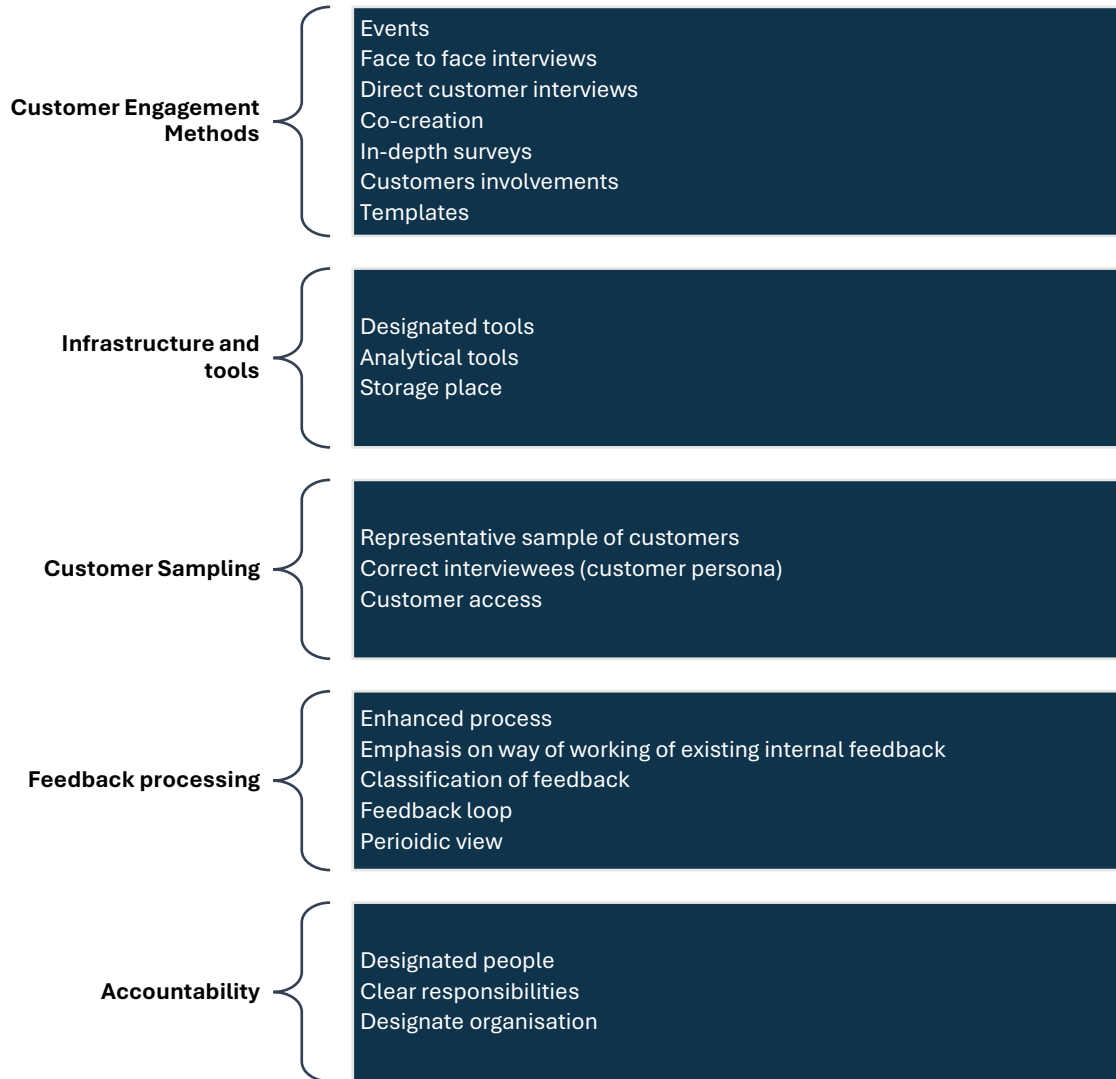
scattered. It is necessary to establish the responsibilities among the existing personnel clearly.

*“Maybe a single organization source can do that, of course. Asset linked with the sales and maybe other needed stakeholders there.” (Participant 9, Operational Support Manager)*

*“Clear responsibilities.” (Participant 6, Process Development Senior Manager)*

*“Maybe there should actually be people, a few people who work with these daily. So, it would not be done on the side of other work tasks. It would be regularly like a customer experience manager or something like that who would have a lot of time and only work on this, like customer interviews, that would help, I think. It could be like a two-person team, or maybe one is enough, but it would be like always being the expert and then also having these templates ready and everything, and doing this daily. Then it would help the product managers really to do the interviews and gather these facts.” (Participant 2, Customer Offering Engagement Manager)*

Participants reflected on their answers a lot on the already highlighted challenges, which was also their intention. Often, participants also found new challenges that were not mentioned during the process of looking into ways to make the process of gathering feedback easier. This showed to effectively uncover all the pain points and suggestions associated with the work on customer feedback within the process. Suggestions ranged throughout the process from gathering, processing, to providing feedback. Multiple concrete and actionable ideas were also provided.



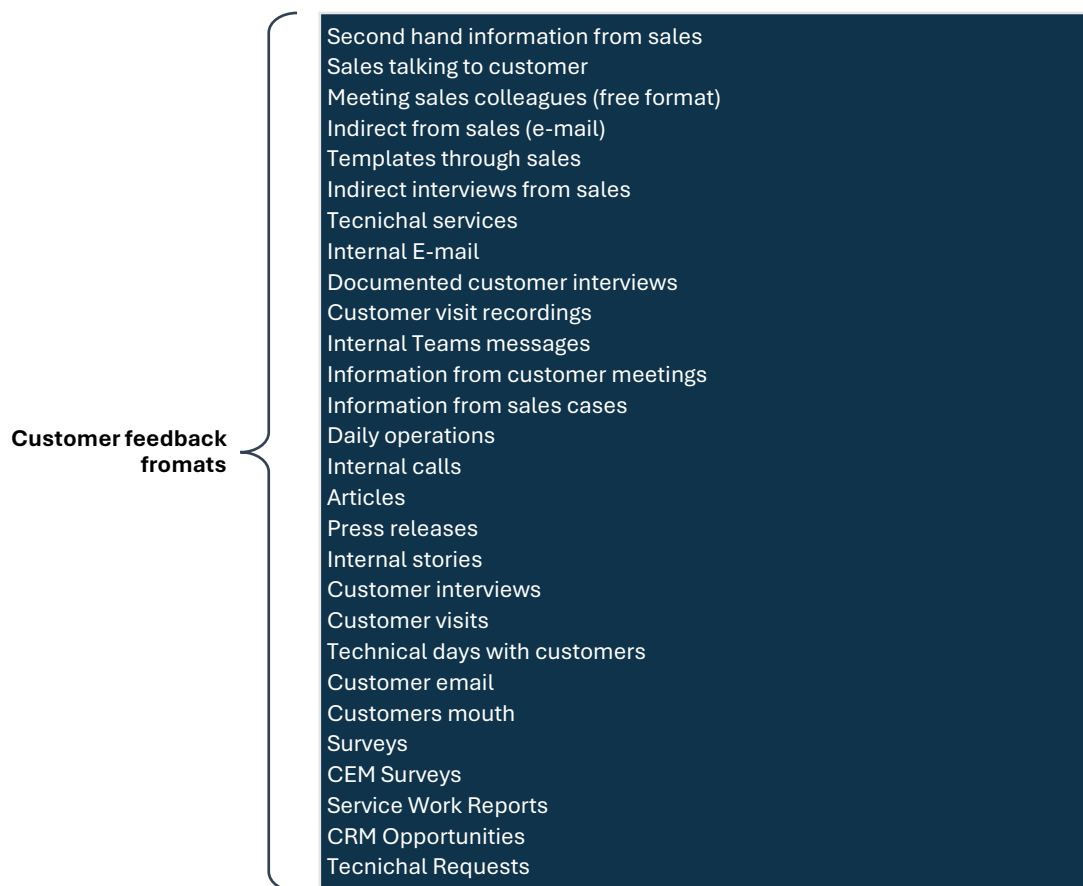
**Figure 14.** Suggestions for working with customer feedback.

### 4.2.3 Customer feedback formats

To utilise customer feedback as input in the service development process, it is crucial to understand the format in which it is received. As previously established, customer feedback exists in multiple formats depending on varying attributes tied to the feedback. A systematic approach to using feedback requires a structure for how feedback is received, categorized, and analysed.

To uncover the different formats, participants were asked how and in what format they received customer feedback in their position. Participants were shown Figure 1. (Dissatisfaction feedback routes are classified into four types: active or passive instruments with codified or personalized feedback. Adapted from (Funding & Elg, 2006) as an example to reflect their answers. However, they were also allowed to freely elaborate if they felt that the format did not directly adapt in the framework at that moment.

Multiple formats were recognized from the answers, as shown in Figure 15. As seen, ways of receiving customer feedback and routes of communication are versatile. Answers depended on the position and responsibilities of the participants.



**Figure 15.** Customer feedback formats and sources.

From the answers, it can be seen that most feedback, when thinking of quantity, comes through sales as internal or indirect communication.

*“Well, of course. I mean, sales, talks to customers daily. So obviously they are sort of getting feedback all the time.” (Participant 4, Market Performance Insights Manager)*

*“So, secondhand information from sales, but also from field service. Sometimes if they contact you, because they tell their story about recent work in that field, et cetera.” (Participant 3, Product Manager)*

*“Many times, it comes from sales or technical service as well.” (Participant 8, Product Manager)*

*“We also get through sales. So, if we ask sales managers for feedback, it is indirect then... usually it is through e-mail, and we send it directly to the sales manager and ask, OK, have you heard we have this upgrade, for example, and your customer has bought it?” (Participant 2, Customer Offering Engagement Manager)*

Multiple ways of direct communication were also identified. The participants highlighted the importance of customer communication and interviews. As a source, customer interviews were not found significant in quantity but in quality.

*“Interviews for me are giving the most feedback. Qualitative feedback, when you want to deep dive into something.” (Participant 5, Customer Offering Engagement Manager)*

*“The best would be obviously an interview face to face.” (Participant 3, Product Manager)*

*“Discuss with the customers what their needs are and how the kind of solution we have been designing.” (Participant 1, Offering Development General Manager)*

Participants also brought up the different systems that provide feedback in a more quantitative format. These included different surveys and technical requests that were made by customers on the CRM platform.

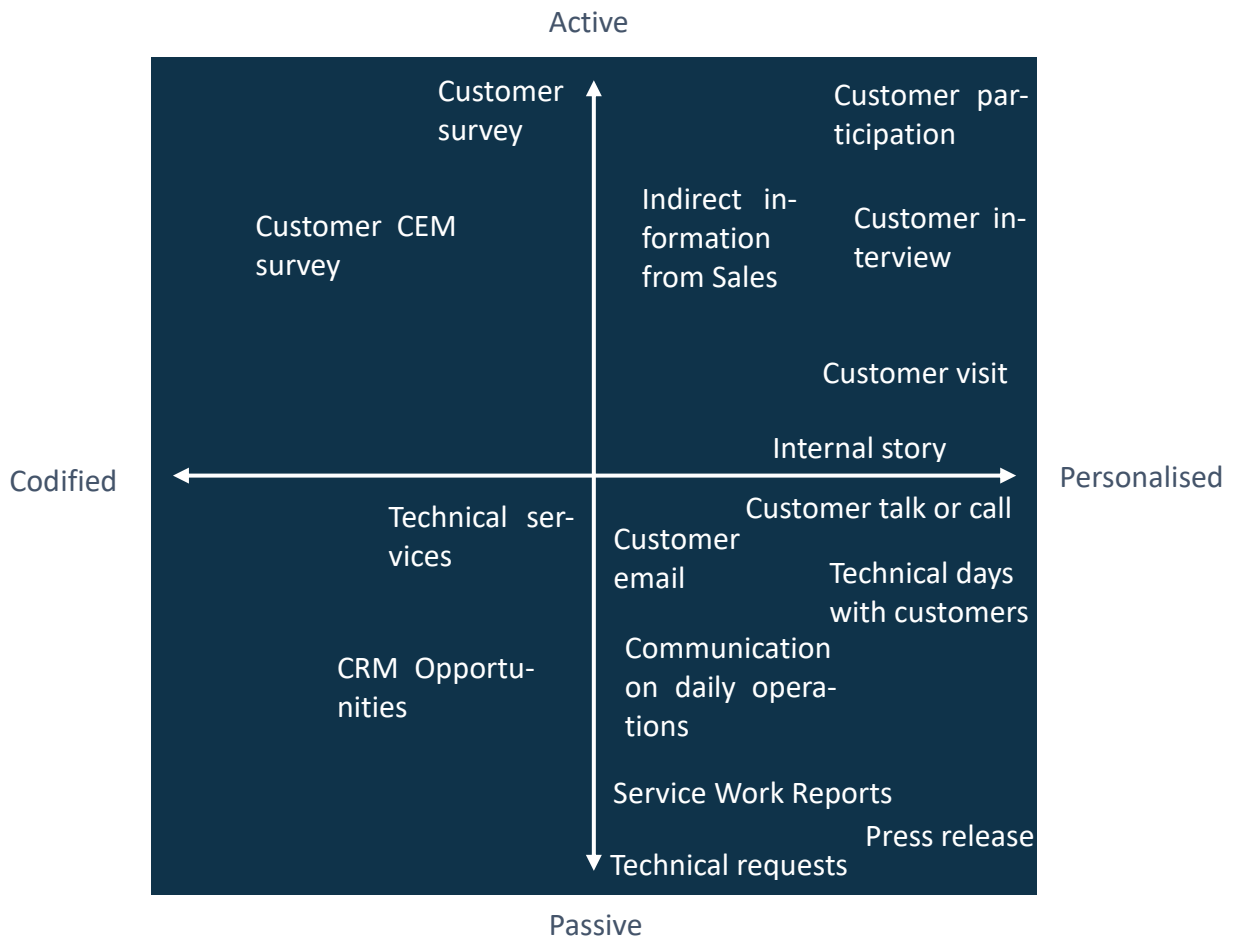
*"I think surveys have their own benefits because you get quantitative feedback and. Sometimes, as I said with one pilot customer, you get qualitative and in-depth, but it is only one person's view or something like that. And a survey, on the other hand, will give you quantity, which, if you design the survey well, you can really get a lot of insights from it." (Participant 5, Customer Offering Engagement Manager)*

*"You can also have a look at service work reports. You can have a look at the technical requests, and technical service is supporting a lot of customers with many technical requests from the field, and that is a very valuable source of information." (Participant 3, Product Manager)*

*"Customer experience management surveys, then that is recorded in CRM in the system, and basically anybody with a CRM license can access the information. And yeah, so I mean, there has been talk about or a wish to expand those data points in the future." (Participant 4, Market Performance Insight Manager)*

*"We have these opportunities that are connected to sales. If they see an opportunity, they can open one in the CRM, and then when they have handled it, either it will be a won sales case or lost, and then they can also put in some comment there." (Participant 2, Offering Engagement Manager)*

There are multiple formats and sources for how customer feedback is received. Also, when reflecting on literature, varying non-conventional formats are identified that highlight the special characteristics of the technical industry in which the company operates. The Figure 16 below shows how the different formats align with the framework presented by Funding and Elg (2006).



**Figure 16.** Customer feedback routes.

Following the different formats, participants were asked to elaborate on the most important and valid format or way of receiving feedback. Participants found pre-planned direct communications best with customers. Additionally, the quantity of feedback was highlighted.

*“When we are actively seeking feedback, I think the scope is more defined, and it is easier to analyse and make decisions when it is passive, since it is not on your radar. It can come in every form, any way.” (Participant 5, Offering Engagement Manager)*

*“I would say that when you have this interview, and you ask a direct question, and they answer your direct question, that is the most powerful because you plan the*

*communication. You have some plan behind it, like the development of a new solution.” (Participant 3, Product Manager)*

*“It is really interesting to know and try to get as much information from the customer because then we understand what to do based on it much better... And then also, I mean, of course, sample size is one issue that you need to consider. I think that is a bit of a struggle sometimes with the surveys that we do not have that sort of mass in place, and then it becomes anecdotal. (Participant 4, Market Performance Insights Manager)*

*“I think it would be the right time to test the value proposition and also the like concept validation... I think an interview would be good.” (Participant 2, Offering Engagement Manager)*

### **4.3 Customer participation**

Customer participation was previously established to describe the degree of involvement of the customers in the service development process. In the service development process used by the company, there is involvement of pilot customers in the latter stages of the process. These pilot customers can be compared to lead user thinking, which was established in the theoretical background.

Pilot customers are used to test out and validate solutions before the official market launch. This can be seen as customer participation, which can also be defined as a form of customer feedback. Therefore, the participants were asked to elaborate on this specific participation of customers in the service development process. The answers were categorized in Figure 17 below.

*“I think with the pilot customers, it is very concrete. They would have the solution available, so I think then we get really important feedback, and often, of course, it is very nice if we also get the customer maybe a reference as well. So, if they are happy with the solution, it is very good validation.” (Participant 1, Offering Engagement General Manager)*

*“Let us say that when we have a concept or even a product that we pilot, we have typically only one or two customers at the time. In that case, the customer feedback is really direct and immediate because, also from our side, we have more than one person following up on the process.” (Participant 10, Service Offering Lead)*

Customer feedback from pilot customers is found to be more actual and concrete. The exchange of information is more active, and this forms a special relationship between the customer and provider.

*“I would say for pilot customers, we are actively engaging with them because we ask them if they want to be pilots and then they test out... So, I see pilot customers as the ones who are ready to try something and give you feedback on it. So, because in the end, if it is a success, they will be the first to have it... So, it is a promotion for themselves as well. So, I see these people, and the feedback that they give is very important because they help you test your product... So, I think there is a different sort of relationship we have with them. (Participant 5, Offering Engagement Manager)*

The reporting and analysis of feedback are also found to be more detailed, because with pilot customers, there are more people involved in gathering the feedback. Additionally, it seems that the responsibilities are distributed more effectively among people working in the process.

*“When we have a field follow-up, and we are ending the field follow-up and evaluating the field follow-up results, then of course the pilot customer is there naturally. Our technical services are a dedicated organization to collect the feedback from the customer... The technical service also does the reporting. It is a very constructive way of doing this report.” (Participant 8, Product Manager)*

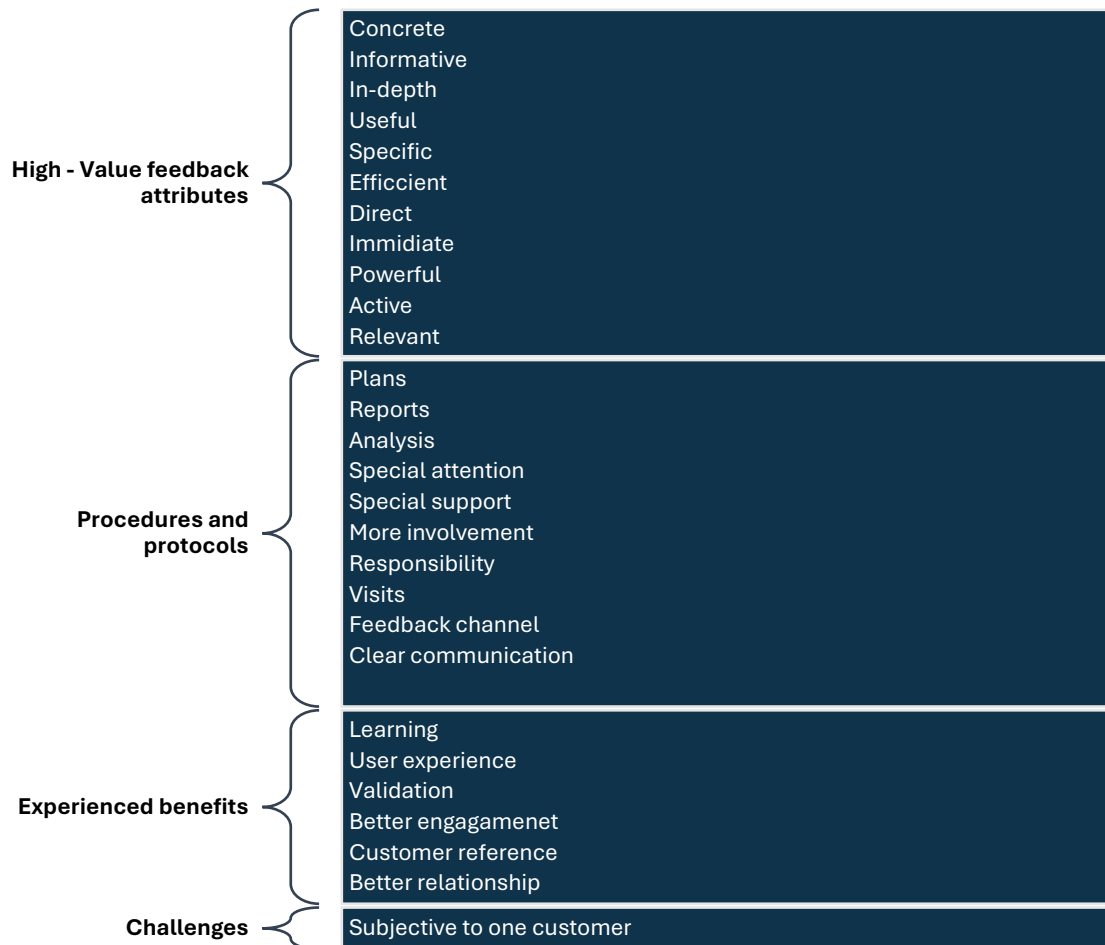
*“So therefore, the feedback that we are collecting from them, it does not necessarily have to be different, but at least should be maybe analysed a bit differently in a way, but then again, depending on what we are asking and requesting as feedback from the customer in the pilot cases.” (Participant 9, Operational Support Manager)*

Participants also raised one clear challenge relating to the use of customer participation. The feedback in a pilot case can be subject to only one customer and does not represent a larger view of the target market. This can possibly lead to the solution becoming

tailored towards one customer rather than addressing the needs of other potential customers.

*“If you are talking with the pilot customers related to offering development. You are asking them questions that are very specifically tied to what you are actually developing... In my opinion, it is also that maybe related to offering development, it is sometimes dangerous if you are talking with one customer and then you are basing what they are replying to you, to apply to all the other customers, for instance, in that same market segment.” (Participant 4, Market Performance Insight Manager)*

Participants found that customer participation in the service development process is important. The conversation between the parties is more active, purposeful, and planned, which makes the feedback more in-depth and significant. The reporting and analysis of the feedback are also more structured, as they receive more attention with clearer responsibilities. This also makes the relationship closer to the customer.



**Figure 17.** Differences in customer participation related feedback in comparison to general feedback.

#### 4.4 Customer types

Customer selection for the feedback used in the service development process is important. To understand the impact of customer selection, the participants were asked to elaborate on how they see different customer types, and their feedback can differ.

The novelty of the industry is highlighted, as the customer is not always the user of the solution, or they may be used for different purposes.

*“There is a big difference between the customer segments and the customer business in the way... and of course how our equipment is serving customer business.” (Participant 9, Operational Support Manager)*

*“To understand who you are getting the feedback from. So, in our sort of business-to-business environment, our organization is, first of all, quite complex. Our products are complex. Who are we selling it to the customer, versus who is then buying it from us? Who are we delivering it to? So, who is it actually? If it is a physical product, who is receiving it on the customer end, and then maybe installing, and the actual user might most probably be different people. So, sort of understanding and having access to the correct person.” (Participant 4, Market Performance Insight Manager)*

The different market segments affect the availability and usability of the feedback.

*“Yeah, segments. There are many differences. Obviously, the business model is different. Price sensitivity is different. The size of the company is different. Segment is a very crucial factor. It changes a lot. From a small company, maybe it is easy to get feedback because they are also happy when you contact them, and you show interest in them. And maybe from one person, you can get a wider view, like a Superintendent knows a lot. But if you think about it, instead of big companies like those, then the organization is very big. They are very busy. So, we have to discuss with many people before you get a better understanding of the picture.” (Participant 3, Product Manager)*

*“Then also the different market segments. By nature, they are quite different, and they also have different types of needs. So, if we create a solution and we have a segment in mind. It might not be so super interesting for some of the other market segments. So, let us take, for example, the SOLAS (Safety on land and sea) upgrades. In general, fire safety is super important for cruise vessels. I think it would be important for the other market segments, but perhaps they do not have such urgency on this topic. So then, for example, the value propositions could be quite different for the different market segments, and the benefits they would receive from the solution would also be different.” (Participant 1, Offering Development General Manager)*

The question also provided an important recurring topic in the participants' answers. The importance of customer personas was highlighted multiple times by many of the participants.

*“So yeah, it is important to take that into account. However, typically, our customer might have 10 different people. We will discuss working with us, all having different roles and different competencies, different responsibility areas. It is totally different if the feedback is coming from the purchaser, the chief technical engineer, or some other role. That we would need to secure every time, that when we are talking about customers, we would be talking about also the right topics with the right people and getting the right feedback, internally also.” (Participant 6, Process Development Senior Manager)*

*“You have the crews of the people who are very close to the engine, for instance, those who work daily with them. They can give an aspect; they can tell one part of the story. Then you have the Superintendent who is meeting in the middle, so still visiting the site but also working in the office. Then you have the fleet manager probably not visiting the site so often, but with budget responsibility for a fleet. And then we have other figures like today, with big companies, environmental managers looking at CO2 and these types of things. So, probably these guys have never seen an installation. This makes things complex... However, in the end, who makes the decision? The budget? Price on purchasing, on these types of things, is someone else.” (Participant 3, Product Manager)*

It is evident from the answers that the selection of customers and customer personas is a significant factor when utilizing customer feedback. The marine industry context also adds an additional layer of complexity to the process, which only makes it more crucial to think about the different customer types.

#### **4.5 Summary of key findings and the revised framework**

Customer feedback can impact the service development process in multiple ways. It holds significant potential in terms of concept validation and market scaling to ensure a desired solution is developed for a commercially viable market. Relevant customer input at these crucial steps allows for quick decision-making and hinders unnecessary development costs. However, if misapplied, customer feedback can steer the development process too much into tailoring or stretch out the process unnecessarily.

The service development process is structured as a linear model with stages that include multiple tasks within each stage, with two stages having a parallel element applied. The

process covers the entirety of the development cycle, starting from evaluating the idea and strategy fit to post-launch evaluation. Lifecycle activities are excluded from the process. Additionally, in between the stages, there are gates, in which the outputs of the stages are evaluated. The structure of the process means that multiple stakeholders are involved within the process, with differing tasks, goals, and responsibilities. Not all stakeholders are involved throughout the entire process, but only partly. This produces challenges in the implementation and communication of customer feedback. This all advocates for a structured approach in implementing customer feedback so it is clear for all stakeholders and tied to the process.

The challenges of implementing customer feedback scale out throughout the process, starting from how and from whom to acquire the feedback, how to process and analyse the feedback, when to apply it, and how to store the feedback. The usability of the feedback is also impacted by the different formats in which it is received; some formats are more desired and more impactful than others. The findings and the revised framework aim to answer the presented challenges.

#### **4.5.1 Different formats of feedback in the service development process**

As Funding and Elg (2006) highlighted, the approach to customer feedback can be done through four categories: active, passive, personalized, and codified. Based on the answers of the participants, different kinds of feedback are relevant in different stages of the process.

The first stage of idea and strategy fit includes quick decisions and a rough conception of the ideas; no prototyping or concepts are necessarily made. The ideas are often established internally through internal perceptions and based on existing feedback. Data quantity is important at this stage to justify the potential commercial market and the need for the solution. When examining the different formats, larger quantities come from systems and surveys and are characterized as a codified format of feedback. Active

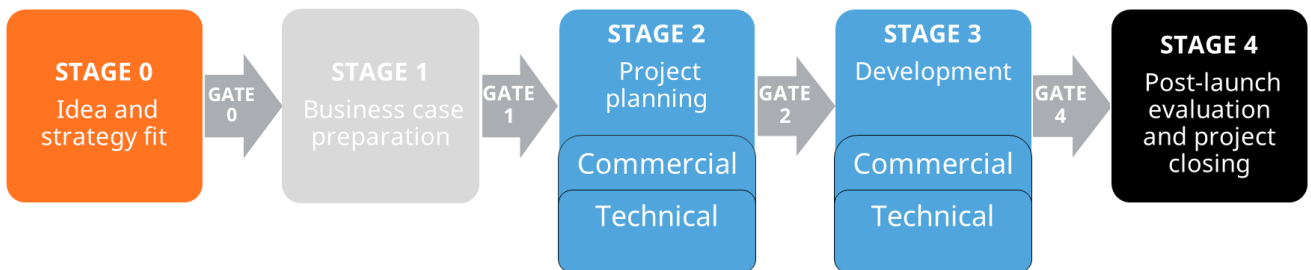
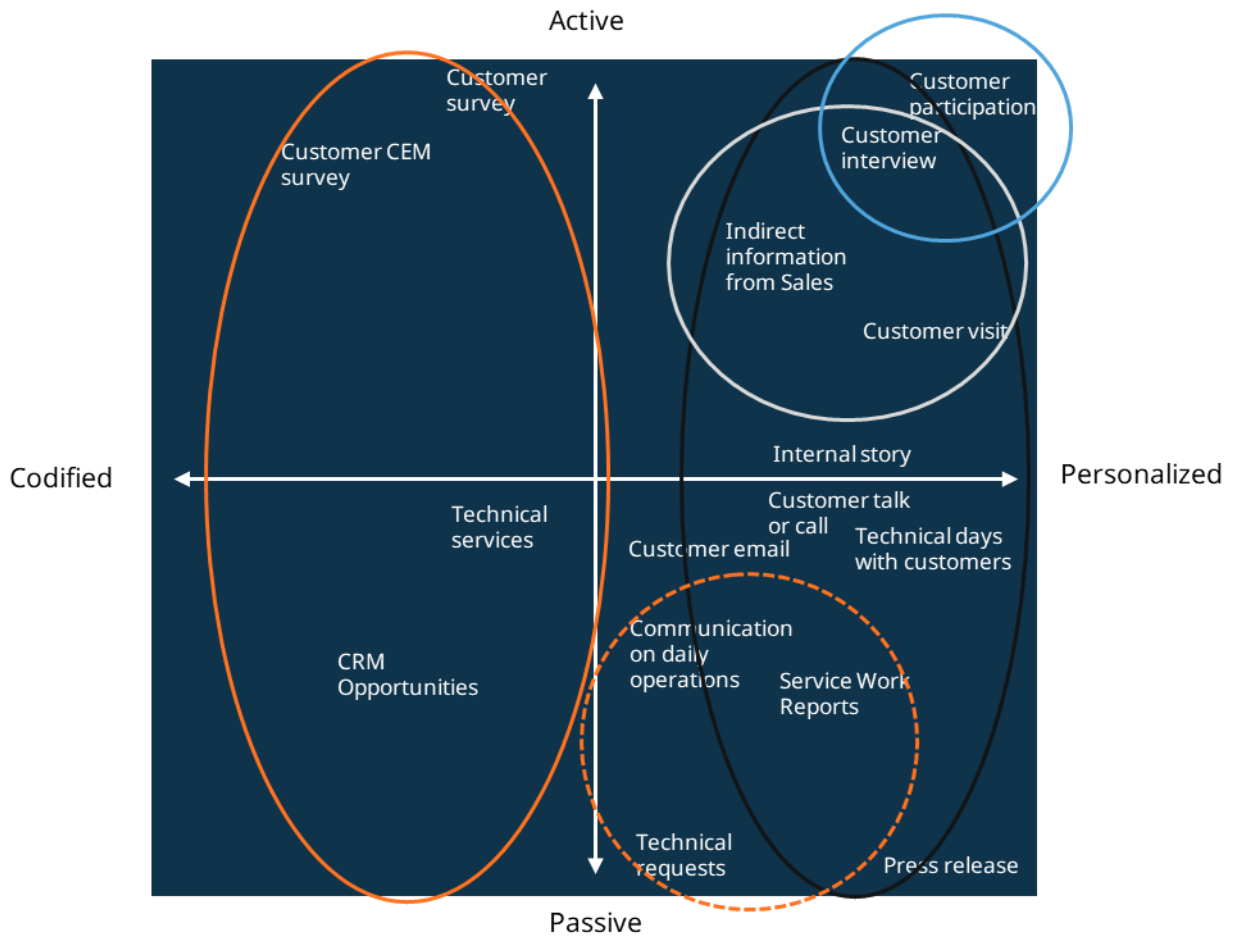
and personalized formats require more effort and do not provide the required quantity. Active formats, like interviews, were also described as challenging at this stage by participants, because there is not much to present to customers about the solution. Therefore, the findings suggest that at the first stage, emphasis should be on the feedback that is larger in quantity and received in systems, such as passive and codified ways of gathering feedback.

The second stage of business case preparation includes the generation of the business plan, including the commercial and technical approach. At this stage, the concept validation of the solution is crucial, as the decision of process continuation is made after this stage. Additionally, as the design process is at an early stage, customer feedback can provide crucial input to the direction of the design. Based on the answers, the best feedback for concept validation is acquired through direct customer interviews. Therefore, the findings suggest that active personalized feedback should be practiced at this stage.

The third and fourth stages of project planning and development include the concrete planning and execution of the development project. Resources are assigned, and designs, prototypes, and validation of the solutions are made. At these stages, active and actual communication with the customer can be beneficial. Detailed feedback from the interviews should be available, and active customer participation can help make design choices to really design the solution according to the established customer needs. The pilot customer should be utilized to facilitate active communication of feedback. However, at these stages, it is crucial to avoid tailoring the solution towards one customer. The findings do suggest the utilization of the active personalized feedback gathered in the previous stages to utilize in design and development, and customer participation for active communication in validation of the solution.

The last stage of post-launch evaluation and project closing includes executing the market launch and following its success. Commercial success is measured, and potential activities are made based on it. The findings suggest that at this stage, not only active

personalized feedback should be gathered, but the passive personalized feedback in forms of press releases and customer stories should be monitored. The Figure 18 below visualizes how the different customer feedback formats align with desired attributes required from the feedback in each stage.



**Figure 18.** Customer feedback formats are reflected in the service development process.

#### **4.5.2 Handling customer feedback for the service development process**

The findings suggest that there can be a link between the stages and the different attributes of customer feedback. However, making suggestions solely based on that would be too straightforward. Every format can produce valuable information towards any stage if the customer feedback is converted to match the desired attributes required in each stage. It is also important to acknowledge that not all customer feedback is directly gathered for development purposes but may still include relevant information regarding that. One of the main challenges in the findings was how to produce customer feedback that is relevant for the service development process.

Regarding that, it is beneficial to make a distinction between customer feedback that is intentionally gathered towards the development process and feedback that does not have this contextualisation. Active feedback that is intentionally generated for the development process is directly relevant to the process if conducted accordingly. The challenge of producing meaningful feedback towards the service development process comes from analysing feedback that is not directly gathered for the purpose of service development.

Passive feedback, like technical requests, service work reports, and CRM opportunities, is generated through daily operations with the customer. These sources of information include relevant information regarding customer problems and needs but are often too general and difficult to process. Adding a resource to bring this information into the context of service development would unlock a vast amount of quantitative data to utilize in the service development process. As the flow of this type of feedback is constant, there could be a periodic or regular report that is conducted from the data for the use of development. This requires tools that allow for analysing, categorizing, and storing the reports. Periodic review would enable the feedback to be readily utilized on short notice in the counter and to be conducted only when a service development process is initiated. This would benefit the availability of more feedback in the earlier stages, where vast feedback studies are not suitable for the timeline.

Active feedback, like customer interviews and surveys that are gathered intentionally during the development process, is contextualised by the solution in hand. This means that the customer often has the knowledge of what it is providing feedback to. However, this does not always mean that the feedback is helpful in the process, as the findings showed. When gathering active feedback towards the development process, it is important to consider the customer position and personas carefully. The industry in which the company operates requires close attention to the details of the customer's role and relationship to the solution. Customer personas need to be chosen according to the feedback desired, whether it is technical, commercial, environmental, etc. The customer persona should also have relevant authority in the organisation it is representing. For these, it is important to make careful preparation and reportage of the interview. Pre-made templates and guidelines for customer selection and interaction would always consider those factors and make the feedback comparable. This prevents gathering feedback that is irrelevant to the process and wasting valuable time and resources that are scarce during the process. Additionally, the standardisation of said feedback provides the possibility of having the feedback available for future use.

#### **4.5.3 Other structural elements**

In addition to studying the customer feedback formats, the findings sought and revealed other structural elements to consider with the usage of customer feedback. Firstly, it was highlighted that the usage of customer feedback is mentioned in the current service development process, but the task itself is vague. It does not really demand or describe the usage of the feedback as suggested by the literature (Edvardsson, 2006, p. 5) and the findings, the usage of customer feedback should be clearly linked to the process as a required task, clearly elaborating the intended usage and outcome. This can be expanded to include mandatory customer participation, as a pilot customer, in the process.

Secondly, the impact of infrastructure on the processing of customer feedback is significant. Lack of tools and templates regarding analysing and storing was found to be a critical barrier in the usage of feedback. This challenge can be addressed by providing standard storage, accessible systems, and resources for processing the feedback. Additionally, guidelines in terms of how information is entered into the systems can already solve some issues in relation to data analysis. Insightful descriptions of customers, customer personas, customer communication, and negotiation outcomes can make the feedback more usable at the root of the feedback, reducing the need for further interpretation.

Lastly, findings suggested that the implementation of a feedback loop encourages the use of customer feedback. The service development process could include the generation of a comprehensive feedback report, where the collected feedback is collected and described. This would function as a collection of feedback that could be not only used in future projects but also used for measuring the success of the feedback usage. A measurable metric could then provide encouragement for future use or reveal further need for development in the cause.

#### **4.5.4 Revised framework**

The revised framework presented in Figure 19 aims to summarise the findings on the basis of the theoretical framework. The theoretical framework is established from two main elements under study: the service development process and the customer feedback formats. In the middle of the figure is presented the service development process and its stages as used by the company. Above the process is a classification of the different feedback formats as suggested by Funding and Elg (2006), additionally, with attributes that were tied to them in the findings. This provides insight into how the different formats apply in the context of service development.

Lastly, below the service development process, supporting structural elements are presented that were highlighted in the findings. These enable the implementation of

customer feedback to stay systematic throughout the process. With the findings applied, the revised framework presents how the utilization of customer feedback can impact the service development process and how its utilization should be applied throughout the different stages and phases to achieve a systematic approach.

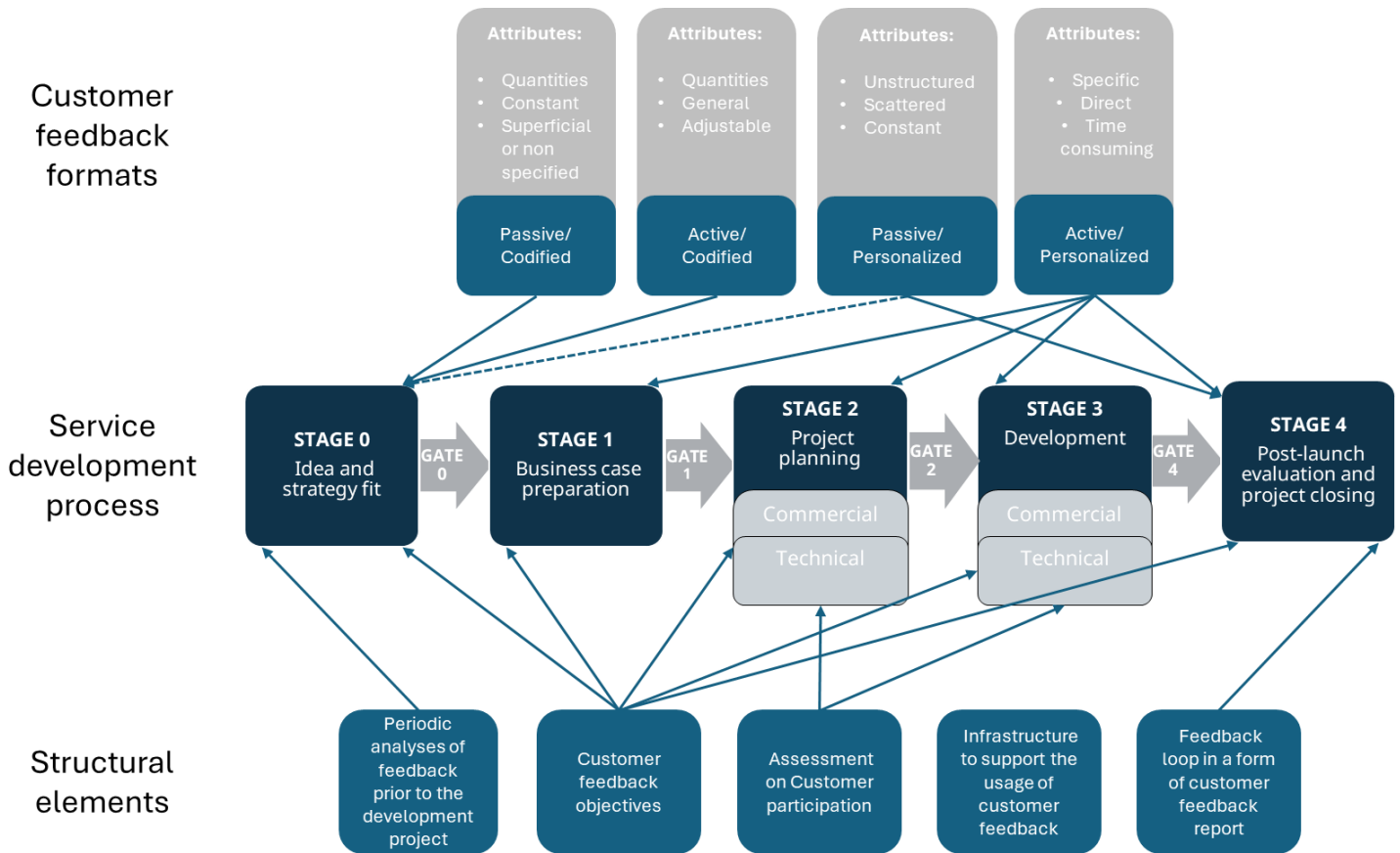


Figure 19. Revised framework.

## **5 Discussion**

The study will conclude with a discussion on theoretical contribution, managerial implications, potential limitations, and future research suggestions. The first chapter addresses contributions to the theory through the main themes observed. Contributions are made to the servitization, customer feedback, service development, and service industry literature. The second chapter addresses managerial implications that are suggested based on the research objective of systematically applying customer feedback to the service development process. Lastly, possible limitations of the study are identified and presented, followed by suggestions for future research directions.

### **5.1 Theoretical contribution**

The study adds theoretical contributions to the servitization literature and its sub-disciplines. The case company represents a servitizing manufacturer from the marine industry with a complex offering and customer demands. By studying the company's service development process, the study provides practical evidence on a servitizing company, as addressed by Baines et al. (2017, p. 269). Under closer examination was specifically the usage and impact of customer feedback in relation to the service development process. This touches upon the suggestion of Morgan et al. (2019) to study the effects on knowledge flow within the service development process caused by customer participation. The findings support results from earlier studies of Morgan et al. (2024), Morgan et al. (2019), and Carbonell et al. (2012) by confirming the positive influence of customer feedback in the service development process. Participants were able to describe multiple positive perceptions that support the arguments.

The theoretical framework covers multiple studies from the service industry that highlight and establish specific characteristics in relation to the topic. The service development process of the case company is analysed in relation to those findings; this partly addresses the suggestions of Alam and Perry (2002) and Mourtzis et al. (2018) to bring

findings of the service industry research to the context of servitizing manufacturing companies. Additionally, the study extends previous research in two ways. Firstly, by providing suggestions on how to address and incorporate customer feedback outside the context of service development. Secondly, by addressing external means of gathering, analysing, and storing customer feedback in relation to the service development process.

## **5.2 Managerial implications**

The study revealed multiple managerial implications when addressing the systematic use of customer feedback in the service development process within the context of a servitizing manufacturing company. Firstly, an efficient systematic process requires that the scope of perception is scaled outside of the service development process. Customer feedback sources need to be clearly identified and contextualised according to their characteristics, so the relevance of them to the service development process can be clearly identified and addressed. Accessing the whole feedback pool of the company ensures sufficient feedback for the process, as active direct feedback can sometimes be challenging to gather during the process. In addition, each stage within the service development process has specific tasks and characteristics that influence the required input. Therefore, it is important to recognise the attributes of the feedback and match it to the requirements of each stage.

The utilisation of the feedback within the process needs to be ensured by implementing customer feedback-related tasks and objectives clearly within the process. Utilisation should be supported by providing sufficient infrastructure in terms of templates, tools, and storage for the handling of the feedback. This also ensures that the feedback is standardised, accessible, and comparable. Sufficient infrastructure also provides the possibility for implementing a feedback loop, which enables the usage of the feedback in the future, measurement of the utilisation, and continuous improvement in the process.

Significant emphasis should also be put on the selection of customers and their representatives when gathering feedback. The position of the customer in relation to the market and the developed process should be established and acknowledged in the planning of gathering feedback. In addition, the customer persona needs to be addressed, as it has a significant impact on the validity and usability of the feedback. The service development process should consider the approach of potential customer input and have clear guidelines on how the customer inputs are selected.

In addition to customer feedback, customer participation should always be addressed in the process, as it provides active and direct communication between the company and customer. Customer participation should also have its own tasks and follow-ups within the process. The same suggestions that come to customer selection for customer feedback are also in place when selecting customers for customer participation.

In summary, managers should make a clear strategy regarding the utilisation of customer feedback in the service development. Set instructions, targets, and measures to ensure customer feedback is utilised and reported within the process. The benefits of customer feedback in service development are undisputed through the literature and are also confirmed in the findings of this study. Most of the challenges with the utilisation of customer feedback came from the workload and the unclear way of working. Therefore, providing sufficient means, control, and proving success through measurement ensures that customer feedback is actually utilised within the process.

### **5.3 Limitations**

When presenting the findings and outcomes, it is also important to acknowledge and point out possible limitations that are present in the context and methodology of the study. Firstly, the study is conducted as a single case company study, which limits the context and findings to a single company. Additionally, the participants were chosen from a specific organisation with a distinctive culture, ways of working, and processes.

This means that the suggestions and findings may not be as generalisable or applicable to companies operating in different industries or sizes. Some challenges in the findings may be only valid for the company and organisation under study.

Secondly, the individual who has conducted the study has a considerable amount of experience working in the organisation and with some of the participants. This may cause a challenge for the unbiased research approach and neutral setting in the interview situations. Participants may have approached the interviews with an expectation that the interviewer is familiar with some topics or examples that would not be known to a neutral interviewer. While that allows for making interpretations and conclusions on a deeper level, it still poses limitations on the repeatability of the study for other researchers.

Lastly, the study and its subject matter are conducted at a time when the industry is in a state of disruption due to the underlying topics in the study and development of technology. The approaches from the companies towards a new way of operating have only started in the last few decades, which means that the subject of the study is essentially at a change now. This may cause the organisations, participants, and matter of study to be prone to the place of time, which can again affect the repeatability and evaluation of findings in the future.

#### **5.4 Future research suggestions**

As previously stated, the subject of the study is present mainly in the industry and provides multiple approaches to future research suggestions. Firstly, it would be beneficial to enlarge the scope of the study to a multi-case study where different companies and their approach to customer feedback in service development are researched. This would allow for a larger range of findings and to further compare those findings. As the matter is also novel in the context of the manufacturing industry, the study could also be approached from the perspective of change management. Considerable changes have a

significant impact on culture and responsibility, which opens significant possibilities for management research.

Secondly, this study's findings are based on the subjective views of internal personnel. The field of research could benefit primarily from studying practical use cases on how the involvement of customers has influenced the service development processes and taking into consideration how the customer approaches the matter. This allows for a more complete approach to the matter, as the key to utilising customer feedback is customer input. Future research could make a clear distinction between utilising customer feedback and active customer participation.

Lastly, this study limited itself to the participants being tied to the process, leaving out one large representative of customer contacts, which are the sales personnel. Often, the people working with the development process are not the people who talk directly to customers. Future research could focus on how these avenues, and the flow of information, could be better understood and utilised in the system. Additionally, with the rapid development of technology, more specific artificial intelligence opens new ways of establishing communication in these systems, which is something future research should not neglect.

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## Appendices

### Appendix 1. Introduction Letter

**From:** Suonmaa, Olli

**Sent:** Sunday, April 27, 2025, 8:55 PM

**To:**

**Subject:** Thesis interview participation - A Systematic process for using customer feedback in offering development

Dear Recipient,

I am Olli Suonmaa and am currently completing my master's degree in strategic business development at the University of Vaasa.

As part of my degree, I am conducting my master's thesis here at the case company.

My thesis topic focuses on the role and implementation of customer feedback in Offering Development in the Marine division.

Together with my thesis supervisor, we have chosen you as a possible interviewee for my thesis. We have tried to find a versatile representation of different roles and personnel who are engaged with the Offering Development processes and customer feedback.

Therefore, I would like to invite you to attend the interview.

Below is some basic information about the interview practices:

**Where:** Online Teams meeting

**Schedule:** End of April / Start of May

**Length:** Approximately 1 hour

**Structure:** Open conversation, with prepared interview questions. Will not require any special preparation from the interviewee.

**Recording:** The interview will be recorded and transcribed.

**Privacy:** The answers will be handled anonymously in the thesis. Only job titles may be used, if necessary.

Following this short introduction, I will send you a proposal for the interview time. The proposed times are chosen according to the schedule assistant.

Please let me know if the proposed time suits your schedule or if any changes are necessary.

Looking forward to your participation.

Best regards,

**Olli Suonmaa**

## Appendix 2. List of interviewees

Interviewee	Role	Experience from working in the current role/company (years)	Interview length
1	General Manager, Offering Development	2 / 3	30 min 59 s
2	Manager, Customer Offering Engagement	2 / 6	57 min 10 s
3	Product Manager	5 / 18	46 min 11 s
4	Manager, Market Performance Insights	0,5 / 20	43 min 19 s
5	Manager, Customer Offering Engagement	2 / 5	57 min 11 s
6	Senior Manager, Process development	4 / 12	18 min 35 s
7	Manager, Sales Development	10 / 13	33 min 34 s
8	Product Manager	14 / 31	41 min 17 s
9	Manager, Operational Support	1 / 31	24 min 19 s
10	Lead, Service Offering	1,5 / 34	23 min 0 s

### **Appendix 3. Semi-structured interview guide**

#### **Background information:**

1. What is your role, and how long have you worked at the company?
2. How long have you worked in your current role?

#### **Services Offering development and launch process (SODL process):**

1. How are you associated with the SODL process?
2. In what stages are you directly involved in the SODL process?
3. What is your input in these stages?
4. From your perspective, what are the most important stages in the SODL process?

#### **Customer feedback:**

1. How does customer feedback impact your role?
2. Do you actively seek customer feedback, and for what purposes?
3. In which stages of the SODL process do you collect customer feedback?
4. In which format do you receive customer feedback (Figure 1)?
5. What kind of feedback is the most useful in your role?
6. How do you see customer feedback should be gathered and shared?
7. How and in which stages should customer feedback be gathered and utilised in the SODL process?
8. What are the biggest challenges in utilising customer feedback in the SODL process?
9. What would make it easier to gather customer feedback?

#### **Customer engagement:**

1. How does the customer feedback differ from that of pilot customers?
2. What are the differences in feedback from different customer roles or customer segments?

#### **Summary:**

How would you improve the customer feedback utilisation within the SODL process?