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From Free-to-Fee in B2B:
How to move free industrial services into for-fee offerings

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Für meine Mama und meine Tochter Emilia.

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English Summary

Industrial firms venturing into services is a common phenomenon in business-to-business markets. However, companies are often unable to monetize many such services, thus incurring high costs of service provision without benefiting from revenue generation in return. To address this critical but little-studied problem, this thesis investigates how industrial firms can transform existing free services into for-fee offerings within two major projects involving three research studies.

Project I explores leading global firms via a cross-section of business-to-business industries, including automotive, maritime, material handling, medical equipment, mining and construction tools, and petrochemicals by employing a theories-in-use approach. Contingent on the empirics, this study precisely characterizes and defines free industrial services. Based on the internal and external challenges that firms face in free-to-fee transformations, it develops a typology classifying free services into four distinct categories: Front-runners, Tugs of War, In-house Shackles, and Dead Ends. For each category, this research provides empirical illustrations and identifies critical actions and activities that firms deploy to successfully implement free-to-fee transformations along the dimensions of structures, processes, people, and rewards. Thus, it offers guidance on how to overcome both external and internal challenges. The findings demonstrate that free-to-fee transformations of industrial services are not isolated marketing, sales, or pricing activities but require a concerted effort among all organizational functions involved.

Project II investigates customers' psychological reactions when moving services from free-to-fee and explores various levers industrial suppliers can use to facilitate this transition. By integrating the principle of distributive justice and equity theory, two experimental studies reveal detrimental effects of moving services from free-to-fee on customers' fairness perceptions and on behavioral intentions like their willingness to pay and purchase and loyalty intentions. Furthermore, these studies examine four levers and their potential to mitigate negative fairness perception when moving services from free-to-fee: *Study 1* shows that a pay-per-use pricing tactic is more appropriate than a flat-rate tariff choice, whereas a service level enhancement can only indirectly ease customers' unfairness perceptions through improved perceptions of the provider's trustworthiness and benevolence, as well as a positive

affective response. *Study 2* demonstrates that cueing customers' value salience by providing price information on value-added services prior to charging for them cannot help ease price unfairness perceptions. Further, results reveal that increasing the base product's price is generally considered more fair than introducing a separate service price.

All studies of this thesis collectively contribute to an enhanced understanding of *how* to move free industrial services into for-fee offerings without jeopardizing the buyer-seller relationship. From a theoretical perspective, it is important to understand how challenging this transition is as customers react with strong unfairness perceptions. A thorough examination of the variety of internal and especially external challenges reveals different potentials of various services for free-to-fee transformation. From a managerial perspective, examining various levers and activities provides valuable insights into how adverse effects of moving services from free-to-fee can be mitigated, for instance by choosing a pay-per-use over a flat-rate tariff. Thus, this thesis provides valuable insights and implications on how to steer the free-to-fee transition successfully and offers at the same time a concrete integrative roadmap for future research.

Deutsche Zusammenfassung

Industrieunternehmen, die vermehrt auch Dienstleistungen anbieten, sind im Business-to-Business Kontext ein weit verbreitetes Phänomen. Allerdings sind diese Firmen oft nicht in der Lage, einen Großteil dieser Dienstleistungen zu monetarisieren, sodass ihnen hohe Kosten für deren Bereitstellung entstehen, ohne dass sie im Gegenzug Einnahmen erzielen. Um dieses kritische, aber bislang wenig untersuchte Problem genauer zu beleuchten, wird in der vorliegenden Dissertation untersucht, wie diese Hersteller bestehende, kostenfreie Dienstleistungen in kostenpflichtige Angebote umwandeln können. Dies geschieht im Rahmen zweier Forschungsprojekte, die insgesamt drei Studien umfassen.

Projekt I untersucht führende globale Unternehmen anhand eines Querschnitts diverser Business-to-Business Branchen, darunter die Bereiche Automobil, Schifffahrt, Material Handling, Medizingeräte, Bergbau- und Bauwesen sowie Petrochemie, indem es einen Theories-in-Use Ansatz verwendet. Ausgehend von der Empirie, werden in dieser Studie die kostenfreien, industriellen Dienstleistungen exakt charakterisiert und definiert. Basierend auf den internen und externen Herausforderungen, denen sich Unternehmen bei der Umwandlung von kostenfreien in kostenpflichtige Dienstleistungen gegenübersehen, wird eine Typologie entwickelt, die kostenfreie Dienstleistungen in vier verschiedene Kategorien unterteilt: Front-runners, Tugs of War, In-house Shackles, und Dead Ends. Für jede Kategorie liefert diese Forschungsarbeit empirische Beispiele und identifiziert kritische Maßnahmen und Aktivitäten entlang der Dimensionen Strukturen, Prozesse, Mitarbeiter und Incentives, die Unternehmen einsetzen, um die Umwandlung von kostenfreien in bepreiste Dienstleistungen erfolgreich umzusetzen. Damit wird eine Anleitung für die Bewältigung externer und interner Herausforderungen zur Verfügung gestellt. Die Ergebnisse dieser Studie zeigen, dass sogenannte Free-to-Fee Transformationen bei industriellen Dienstleistungen keine reinen Marketing-, Vertriebs- oder Preisgestaltungsthemen sind, sondern ein Zusammenspiel aller beteiligten Unternehmensbereiche erfordern.

Projekt II untersucht die psychologischen Reaktionen der Kunden bei der Umstellung von kostenfreien auf kostenpflichtige Dienstleistungen und erforscht verschiedene Maßnahmen, die industrielle Anbieter einsetzen können, um eben diese Umstellung zu erleichtern. Unter Einbeziehung des Principle of Distributive Justice (Prinzips der

Verteilungsgerechtigkeit) und der Equity Theory (Theorie zum Gleichheitsprinzip der Gerechtigkeit), zeigen zwei experimentelle Studien nachteilige Auswirkungen der Umstellung von kostenfreien auf kostenpflichtige Dienstleistungen auf die wahrgenommene Fairness und die Verhaltensabsichten der Kunden, wie etwa die Zahlungsbereitschaft, aber auch Kauf- und Loyalitätsabsichten auf. Darüber hinaus werden vier Hebel und deren Potenzial untersucht, die wahrgenommene Unfairness der Kunden bei dieser Transformation abzuschwächen: *Studie 1* zeigt, dass eine nutzungsbasierte (pay-per-use) Preisgestaltung angemessener ist als eine Flatrate, wohingegen eine Verbesserung des Service Levels die wahrgenommene Unfairness der Kunden nur indirekt durch eine Verbesserung der wahrgenommenen Vertrauenswürdigkeit und des Wohlwollens des Anbieters sowie durch eine positive affektive Reaktion mildern kann. *Studie 2* legt dar, dass eine Vorab-Information der Kunden über den tatsächlichen Wert der kostenlos konsumierten Dienstleistungen, nicht dazu beitragen kann, die wahrgenommene Unfairness zu verringern. Darüber hinaus zeigen die Ergebnisse, dass eine Erhöhung des Preises des Basisproduktes im Allgemeinen als fairer empfunden wird als die Einführung eines separaten Preises für die zugehörigen Dienstleistungen.

Alle drei Studien dieser Arbeit tragen gemeinsam zu einem besseren Verständnis der Frage bei, wie kostenlose industrielle Dienstleistungen in kostenpflichtige Angebote überführt werden können, ohne die Käufer-Verkäufer-Beziehung zu gefährden. Aus theoretischer Sicht ist es wichtig zu verstehen, wie schwierig diese Transformation ist, da die Kunden stark mit wahrgenommener Unfairness reagieren. Eine gründliche Untersuchung der verschiedenen internen und vor allem externen Herausforderungen offenbart unterschiedliche Potenziale verschiedener Dienstleistungen bezüglich der Umwandlung von kostenfreien in kostenpflichtige Angebote. Aus der Management-Sicht liefert die Untersuchung verschiedener Hebel und Aktivitäten wertvolle Erkenntnisse, wie die negativen Auswirkungen gemildert werden können, wie etwa durch die Wahl eines nutzungsabhängigen Tarifs anstelle einer Flatrate. Somit liefert diese Arbeit wertvolle Erkenntnisse und Implikationen, wie die Umwandlung von kostenfreien hin zu kostenpflichtigen Services erfolgreich gesteuert werden kann, und bietet gleichzeitig eine konkrete integrative Roadmap für künftige Forschung.

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List of Abbreviations

B2B	Business-to-business
B2C	Business-to-consumer
CEO	Chief Executive Officer
f2f	free-to-fee
KPI	Key Performance Indicator
ppu	pay-per-use
TIU	Theories-in-use

1 Introduction

The trend of *servitization* (Vandermerwe & Rada, 1989) is a phenomenon of ongoing interest, especially within the context of traditional manufacturing companies (e.g., Neely, Benedetinni & Visnjic, 2011; Tuli, Kohli & Bharadwaj, 2007; Ulaga & Reinartz, 2011; Wise & Baumgartner, 1999). Throughout the past decades, more and more firms have been systematically adjusting their strategic focus by shifting from a mere transactional and goods-centric to a more relational and service-oriented business model to counter challenges like rapid technological changes, growing intensity of competition, demanding customer requirements and the related price pressures, and shrinking margins (e.g., Antioco, Moenaert, Lindgreen & Wetzels, 2008; Reinartz & Ulaga, 2008; Shankar, Berry & Dotzel, 2009). Various providers thus enrich their current portfolio through the addition of value-added services. Automobile manufacturers like BMW or Daimler, for instance, no longer focus their selling purely on core products, but have started adding services like a 24/7 concierge service or flexible car sharing services to answer increasing demands of today's customers. Also, industrial suppliers like IBM and Michelin have repositioned themselves as service providers with offerings like IBM Global Services and Michelin Fleet Solutions, which range from traditional services like installation, maintenance, repair, or training to more intricate ones like consulting and process management or even smart services like remote monitoring and diagnostics (e.g., Allmendinger & Lombreglia, 2005; Boyt & Harvey, 1997). These service offerings are a powerful means to provide new value propositions to the customer, maximize customer loyalty and minimize customer churn, profitably grow the business, and enhance firm value (e.g., Eggert, Hogreve, Ulaga & Muenkhoff, 2014; Fang, Palmatier & Steenkamp, 2008).

Although considerable evidence exists that seeking service-led growth constitutes a promising strategy for various suppliers of complex and high-value goods (e.g., Davies & Brady, 2000), the transition from pure manufacturing to providing services entails some major challenges and does not always result in positive outcomes for all firms (e.g., Brax, 2005; Neely et al., 2011; Reinartz & Ulaga, 2008). This so-called *service paradox* (Brax, 2005; Gebauer, Fleisch & Friedli, 2005) indicates that managers and scholars alike need to gain a

more comprehensive understanding of possible pitfalls when moving into the service business. Extant research on service transformation in both the service marketing and business-to-business (B2B) context primarily focuses on *why* this process is strategically relevant. Only few studies exist that provide insights into *how* to counter the practical challenges involved and *how* critical resources and capabilities can be identified and utilized to manage the transition journey successfully (e.g., Steiner, Eggert, Ulaga & Backhaus, 2016; Ulaga & Loveland, 2014; Ulaga & Reinartz, 2011). To date, the emerging body of literature in this domain is primarily of a theoretical and conceptual nature, creating a need for empirical research and validation.

Against this background, the present thesis aims to empirically investigate firms' operational hurdles and implementation barriers on their path towards service-infused offerings and how to overcome them. Anecdotal evidence suggests that one of the most critical thresholds for turning a profit from a manufacturing company's service business is at the beginning of the transformation journey. The service transition process is characteristically described as gradual (Reinartz & Ulaga, 2008) along a *product-service continuum* (e.g., Oliva & Kallenberg, 2003). In the beginning of this continuum, services are often just seen as add-ons and are most commonly given away for free as a selling argument for a manufacturer's core products (Gebauer et al., 2005; Oliva & Kallenberg, 2003). As a result, services are mainly considered as pure cost drivers. However, anecdotal evidence suggests that over time many firms begin to improve their service offering, form competences in this area and slowly but steadily start to realize that they are providing premium services that have the potential to be sold independently from the product (e.g., Reinartz & Ulaga, 2008). Thus, companies could generate considerable revenues "simply by charging for what they already do" (Reinartz & Ulaga, 2008, p. 92)

Existing research on the topic of free services in the context of industrial markets in general and *how* to move services from free-to-fee successfully in particular, is more than sparse. Anderson and Narus (1995) were amongst the first to address the topic of capturing the value of supplementary services and identify critical fields of action that should be given attention as part of this process. They recommend analyzing a company's (free) services if they should be billed or not, choosing the right pricing tactics for them and properly explaining the value of the services to the customer. Almost 20 years later Witell and Löfgren

(2013) take up this topic again within their multiple case study and present eight approaches for transitioning from service for free to service for fee by changing the business model, fostering incremental business model innovation or driving radical business model innovation. Most recently, Ulaga and Michel (2018) also revisit this subject and it turns out that it has lost none of its relevance: various industrial firms still miss out on their revenues by giving away most of their services by default. The authors also recommend first taking inventory of all services provided for free, to decide what services should be monetized and what should remain free of charge - which, however, in certain cases provides non-monetary benefits for suppliers and is therefore only "seemingly free". Further, companies need to establish appropriate pricing tactics for services that should be monetized, as well as manage unavoidable hurdles, whether from within the company (especially from the sales representatives) or from customers who are not willing to pay for something that was previously free of charge. Although these studies address several aspects that need to be considered when starting to price free services, concrete recommendations for action are sparse as all this previous research is either conceptual in nature or relates to only a few case studies, which arouses the need for empirical studies.

Already existing empirical studies on the topic of free services in general are more frequent in the business-to-consumer (B2C) context. These papers highlight that "zero is a special price" for customers, resulting in strong and sometimes biased and irrational perceptions as customers tend to overvalue free goods (Shampanier, Mazar & Ariely, 2007). It turns out that zero pricing not only leads to a deflation of the corresponding non-monetary costs (e.g. advertising intrusiveness), but also to a benefit-inflation effect, such that customers overemphasize the advantages provided by a free service (Hüttel, Schumann, Mende, Scott & Wagner, 2018). These findings already indicate that it will certainly be a challenge for customers if they suddenly have to pay for services that they used to get for free.

Only one recently published paper sheds light on the underlying psychological responses of customers on an unexpected free-to-fee switch in particular (Cziehso, Schaefer & Kukar-Kinney, 2019). Three experimental studies uncover adverse effects of moving services from free-to-fee on customer reactions like perceived fairness, attitude towards the company, and purchase intentions. A freemium option, where a limited services version is offered for free and the full version for a fee, can mitigate these negative consequences on fairness

perceptions and attitudes but cuts down customers' purchase intentions for the fee-based option. A free version with a medium number of features, however, represents a good balance between maintaining fairness perceptions and enhancing purchase intentions. Although this study provides an important indication of what free-to-fee transitions "feel like" from a customer perspective, two key gaps emerge as to why the results cannot be easily transferred to the B2B context:

First, previous research regarding free-to-fee service transitions within B2C relationships mainly consider the online context or online services (Pauwels & Weiss, 2008; Cziehso et al., 2019). It mostly focuses on the move from a free to a freemium business model, where a free version of the service offering is maintained alongside a premium version (Pauwels & Weiss, 2008). However, the question of charging for an online content or not or under which circumstances (e.g. Lambrecht & Misra, 2017) or how to attract new subscribers is very different from a B2B context, which is typically characterized by long-term and very personal buyer-seller relationships.

Second, in an industrial environment, and thus different from a B2C context, strongly rational decision-makers are actually assumed (Hinterhuber, 2015). However, a growing stream of literature departs from that notion that manufacturing firms act purely rationally, describes systematic biases in decision-making and calls for a "richer psychology" in this field (e.g. Spiegler, 2011). Recent studies show that especially perceptions of fairness are of central importance also in an industrial context. As an example, Samaha, Palmatier and Dant (2011) found out by using the example of a large Fortune 500 company and its resellers that perceived unfairness acts as a so-called "relationship poison" and can therefore directly damage buyer-seller relationships. Therefore, it is a logical consequence that there is an urgent need to investigate how a move from free-to-fee affects industrial customers' fairness perceptions and how potentially evolving unfairness perceptions can be mitigated.

Summarizing all these research gaps, the following research questions emerge: How are free services defined in the context of industrial markets? What types of free services exist and how can internal and external hurdles be managed when successfully moving from free-to-fee? How does moving industrial services from free-to-fee affect customers' perceptions of fairness and, in consequence, important behavioral intentions? What are

common practices and levers industrial suppliers can use to mitigate potential unfairness perceptions (e.g. choosing the right pricing tactics, right number of features/right service level, explaining the value of the services to the customer)? To date, no study has fully addressed and answered these calls. Taking these research questions as a starting point, the present thesis sheds light on the topic of how suppliers can successfully transform free services into for-fee services and makes a number of important contributions to existing research and practice.

Project I contributes to the research on moving services from free-to-fee in B2B by addressing past calls for a more fine-grained understanding of B2B services in general (e.g. Ulaga & Reinartz, 2011) and former recommendations of first taking inventory of all services provided for free (Anderson & Narus, 1995; Ulaga & Michel, 2018). By adopting a theories-in-use (TIU) approach and shedding new light on extant theories, such as dual entitlement, in this particular context (Kahneman, Knetsch & Thaler, 1986; Urbany, Madden & Dickson, 1989), we investigate free-to-fee moves of leading global firms of various B2B industries, including automotive, maritime, material handling, medical equipment, mining and construction tools, and petrochemicals and thus extend previous research that has only been conceptual in nature or case-study based. In order to be able to exclude "seemingly free" services from our investigations, we first define and characterize "truly free" industrial services. Then, based on the internal and external challenges that evolve when moving services from free-to-fee, we are the first to develop a typology classifying free services into distinct categories. For each category, we provide empirical examples from our in-depth interviews with key-decision-makers of industrial companies and identify critical actions and activities that firms deploy to successfully steer this move from free-to-fee along the dimensions of structures, processes, people, and rewards (Galbraith, 2008).

Project II also aims to fill the void left so far by the lack of literature on how to move services from free-to-fee in B2B. Two experimental studies shed light on the customer perspective of such a free-to-fee transformation. So this thesis is the first study to empirically investigate free-to-fee transformations in industrial markets and through the lens of the customer on a quantitative, large-scale basis. With our first experiment (*Study 1*), conducted with customers of the anchoring division of a large European tool manufacturer, we explore the challenges for firms when moving services from free-to-fee and study customers' fairness

perceptions and the related behavioral intentions when free services are suddenly being priced. This responds to former calls on a "richer psychology" in industrial services research (e.g. Spiegler, 2011) and the growing importance of perceived fairness as a central construct to be considered (e.g. Samaha et al., 2011). Moreover, we strive to gain a better understanding of *how* firms can overcome potential negative customer evaluations and provide concrete recommendations on *how* firms can handle this move from free-to-fee. We concentrate on two explicit measures, which we assume can counterbalance detrimental fairness perceptions: First, we explore the right pricing tactic when moving services from free-to-fee, i.e., whether customers prefer separate services at a pay-per-use pricing scheme or a service package at a flat-rate when being charged for services unexpectedly. Second, we investigate if enhancing the service level simultaneously with starting to price the service offering can counterbalance the negative effect on customers' fairness perceptions. Results reveal that a pay-per-use pricing tactic is more appropriate than a flat-rate tariff choice, whereas a service level enhancement can only indirectly ease customers' unfairness perceptions through improved perceptions of the provider's trustworthiness and benevolence as well as a positive affective response. Our second experiment (*Study 2*) with decision-makers and people involved in purchasing within the manufacturing industry was conducted via the Qualtrics online survey tool. Here, we examine further strategies to ease the process and hence reduce customers' feelings of unfairness when services are priced for the first time. First, we study if providing the customer with additional information about the actual monetary value of the free service offering can mitigate the negative effect of moving this service offering from free-to-fee on customers' fairness perceptions. Second, we test if enhancing the core product's price is generally superior to separately starting to price the service offering with regard to customers' perceived fairness. Findings here demonstrate that cueing customers' value salience by providing price information on value-added services prior to charging for them cannot help ease price unfairness perceptions. Further, results reveal that increasing the base product's price is generally considered as more fair than introducing a separate service price.

This thesis is structured as follows (cf. Figure 1.1): After this introduction two paper projects with three empirical studies are presented in Chapters 2 and 3. Chapter 2 comprises *Project I*: After introducing the conceptual underpinnings, the study continues with a description of the employed qualitative methodology and analysis approach before presenting

the study findings and ending with conclusions. Chapter 3 contains *Project II*: First, the qualitative pre-study is explained, followed by introducing the conceptual background. Two studies are presented and for each of them unique hypotheses are derived. For each study the experimental research and analyses are described before presenting the results and the overall discussion of the findings. Chapter 4 merges all central findings of both *Project I* and *Project II* and discusses them on a more general level including their theoretical contributions and managerial implications. Finally, this thesis is concluded by presenting an outlook including an integrative roadmap.

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Figure 1.1: Structure of the thesis.

The following Figure 1.2 provides a detailed overview of authorship, publications and conference contributions for the respective studies.

	Project I ***Free-to-Fee Transformation of Industrial Services***	**Project II (Study 1 and 2)** ***Moving Services from Free-to-Fee: How to Overcome Customers' Unfairness Perceptions***
Authors	**Mekhail Mustak** **Wolfgang Ulaga** **Marcella Grohmann** **Florian von Wangenheim**	**Marcella Grohmann** **Anne Scherer** **Marcus Zimmer** **Florian von Wangenheim**
Contribution ***Marcella Grohmann***	Conception and design; data collection; data preparation; data analysis; positioning; writing and revising	Conception and design; data collection; data preparation; data analysis; positioning; writing and revising
Publication	Accepted: ***Journal of Service Research***	To be submitted: *e.g.,* ***Industrial Marketing Management***
Conferences	BMM-EMAC 8th Biennial International Conference on Business Market Management in Association with EMAC Graz, Austria 06.07.2017 – 08.07.2017 Institute for the Study of Business Markets Biennial Academic Conference Boston, USA 08.08.2018 – 09.08.2018	Thought Leaders in Customer Engagement and Customer Relationship Management Conference Paris, France 03.06.2015 – 05.06.2015 Thought Leaders in Service Marketing Strategy Conference Paris, France 29.05.2016 – 31.05.2016 Frontiers in Service Conference Bergen, Norway 24.06.2016 – 26.06.2016 Institute for the Study of Business Markets Biennial Academic Conference Atlanta, USA 03.08.2016 – 04.08.2016

Figure 1.2: List of authorship, publications and conference contributions.

2 Project I: Free-to-Fee Transformation of Industrial Services

2.1 Introduction

For many industrial firms, developing service businesses beyond their core products is of critical importance to stem rampant commoditization, resist heightened competition, grow their customer base, accelerate revenue growth and profit margins, and, ultimately, secure competitive advantage (Eggert et al., 2014; Macdonald, Kleinaltenkamp & Wilson, 2016; Ulaga & Reinartz, 2011). However, traditional product-oriented firms also face major marketing and sales challenges in pursuing service growth strategies (Eggert et al., 2014; Macdonald et al., 2016; Ulaga & Reinartz, 2011). One such challenge is that they often end up providing a host of services free of charge (Anderson & Narus, 1995; Michel, 2014; Witell & Löfgren, 2013), either because customer organizations are unwilling to pay or suppliers fail to exploit profit-making opportunities (Indounas, 2009; Meyer, Shankar & Berry, 2018; Ulaga & Michel, 2018). Accordingly, our study sheds light on this important yet under-researched topic by investigating how firms can successfully transform free services into revenue and profit sources – i.e., from "free-to-fee". While scholars have begun to study the phenomenon of "free" services in business markets *per se* (Ulaga & Michel, 2018; Witell & Löfgren, 2013), to the best of our knowledge, a thorough understanding of the precise free-to-fee transformation process and how it varies across different types of free services is lacking.

The problem of free services in industrial contexts – and the related drain on firms' profitability – is not new, but has been rarely addressed in research (Ulaga & Michel, 2018; Witell & Löfgren, 2013). Detailed estimations of how much profit industrial firms lose through providing free services are lacking, but they have proliferated in almost every B2B market (Macdonald et al., 2016; Ulaga & Michel, 2018; Witell & Löfgren, 2013). For example, capital equipment suppliers often provide free installation and commissioning of machinery on the factory floor (Anderson & Narus, 1995). High-tech medical equipment suppliers frequently offer free training sessions, years of free maintenance, and free software upgrades (Ulaga & Michel, 2018). Chemical and metal component suppliers may provide

material calculations, technical drawings, and documentation, as well as prepare environmental and legal certifications free of charge (Michel, 2014; Witell & Löfgren, 2013). Similar challenges have surfaced with the growing trend of digitally enabled B2B service offerings. A report by McKinsey & Company (Catlin, Harrison, Plotkin, & Stanley, 2016) found that companies lost up to eight percent of their value and shareholder returns by failing to capitalize on data monetization opportunities in B2B contexts.

Existing research has underscored the severity and negative consequences of providing free services (Anderson & Narus, 1995; Witell & Löfgren, 2013) while falling short of providing a fine-grained understanding of how exactly industrial suppliers can systematically address the problem (Michel, 2014; Ulaga & Michel, 2018). A conceptual clarification of the true nature of free services is lacking. Prior research has tended to refer to "free services" in a generic manner despite the established academic consensus that service activities greatly differ in their revenue- and profit-generating potentials (Mathieu, 2001; Michel, 2014; Ulaga & Reinartz, 2011; Witell & Löfgren, 2013). Moreover, in some cases, providing free services may be beneficial to industrial suppliers for sound strategic reasons. For instance, they may contribute to customer satisfaction and retention or winning new clients (Brentani, 1989; Challagalla, Venkatesh & Kohli, 2009; Kohtamaki, Hakala, Partanen, Parida & Wincent, 2015). Such free services are outside the scope of this study, as we focus on those whereby industrial suppliers experience no visible benefits and fail to capitalize on revenue- and profit-generating opportunities (Anderson & Narus, 1995; Ulaga & Michel, 2018; Witell & Löfgren, 2013). Existing studies offer little to no insights into how suppliers can successfully transform such free services into for-fee services. The absence of conceptual clarifications on how to identify and characterize truly free services and distinguish them from services with other underlying goals (Ulaga & Michel, 2018), combined with the lack of guidelines on how industrial firms might best implement free-to-fee transformations, represents a major knowledge gap (Michel, 2014; Ulaga & Michel, 2018; Witell & Löfgren, 2013).

Against this backdrop, *the purpose of our study is to define and characterize free services in business markets and investigate how industrial suppliers can transform such activities into sources of revenue and profits.* More specifically, we pursue two objectives:

(i) First, to explore the true nature of free services and investigate their potential for free-to-fee transformation. In line with past calls for a more fine-grained academic understanding of B2B services across various research settings (Boyt & Harvey, 1997; Doty

& Glick, 1994; Mathieu, 2001; Ulaga & Reinartz, 2011), we develop a typology of free services toward gaining deeper insights into the free-to-fee transformation potentials and processes – both to advance research on this topic and to guide managers in effectively steering free-to-fee transformations.

(ii) Second, to identify the primary strategies used by industrial suppliers to transform free services into for-fee services. Rather than compiling an exhaustive list of all conceivable challenges and solutions in this regard, we focus on those deemed crucial by experienced managers in the field.

Adopting a TIU approach (Zeithaml et al., 2020), we investigate free-to-fee transformations in leading global firms via a cross-section of B2B industries, including automotive, maritime, material handling, medical equipment, mining and construction tools, and petrochemicals. To guide our approach, we rely on Galbraith's (2008) widely adopted strategy implementation framework along the dimensions of structures, processes, people, and rewards.

Our study makes three contributions to the literature on industrial services. First, we offer a rigorous conceptualization of free services in industrial markets. Second, we identify four distinct types of free services, each with specific free-to-fee challenges as firms seek to convert them into revenue and profit streams. Third, we unpack the free-to-fee transformation process and provide detailed insights into how experienced executives align the key organizational dimensions (Galbraith, 2008) for successful free-to-fee transformations. Thus, we shed new light on extant theories, such as dual entitlement, in this particular context (Kahneman et al., 1986; Urbany et al., 1989), contributing to a more robust understanding of the phenomenon and lay a solid foundation for future research and practice.

Our article is structured as follows: first, we present the conceptual underpinnings of our study, followed by a detailed description of the methodology. Next, we present our research findings. Finally, in the concluding section, we discuss implications, recognize limitations, and offer suggestions for future research.

2.2 Conceptual Underpinnings

Research on free-to-fee transformation in industrial markets is nascent. A mere handful of studies address the topic directly (e.g., Anderson & Narus, 1995; Witell & Löfgren, 2013; Ulaga & Michel, 2018). Therefore, we draw upon the literature on challenges associated with growing industrial service business in general for insights relevant to free-to-fee transformation (e.g., Brentani, 1989; Chung, 2021; Kowalkowski & Ulaga, 2017; Macdonald et al., 2016; Ulaga & Reinartz, 2011). These studies put forward two main types of service growth challenges: namely, those internal and external to the firm (Chung, 2021; Eggert et al., 2014; Ulaga & Reinartz, 2011). Based on Santos and Eisenhardt (2005), we consider challenges within the boundaries of the firm to be internal, whereas obstacles residing outside the firm boundaries are deemed external.

Research conducted in B2C contexts allows us to gain further understanding of free services (Bond, He & Wen, 2019; Brady, Voorhees & Brusco, 2012; Lambrecht & Misra, 2017), whereas pricing research, particularly studies focusing on dual entitlement, addresses the issue of pricing services that are currently free (Bruno, Che & Dutta, 2012; Dutta, Zbaracki & Bergen, 2003; Indounas, 2009; Kahneman et al., 1986; Meyer et al., 2018). Key concepts and challenges derived from these literature streams are illustrated in Figure 2.1.

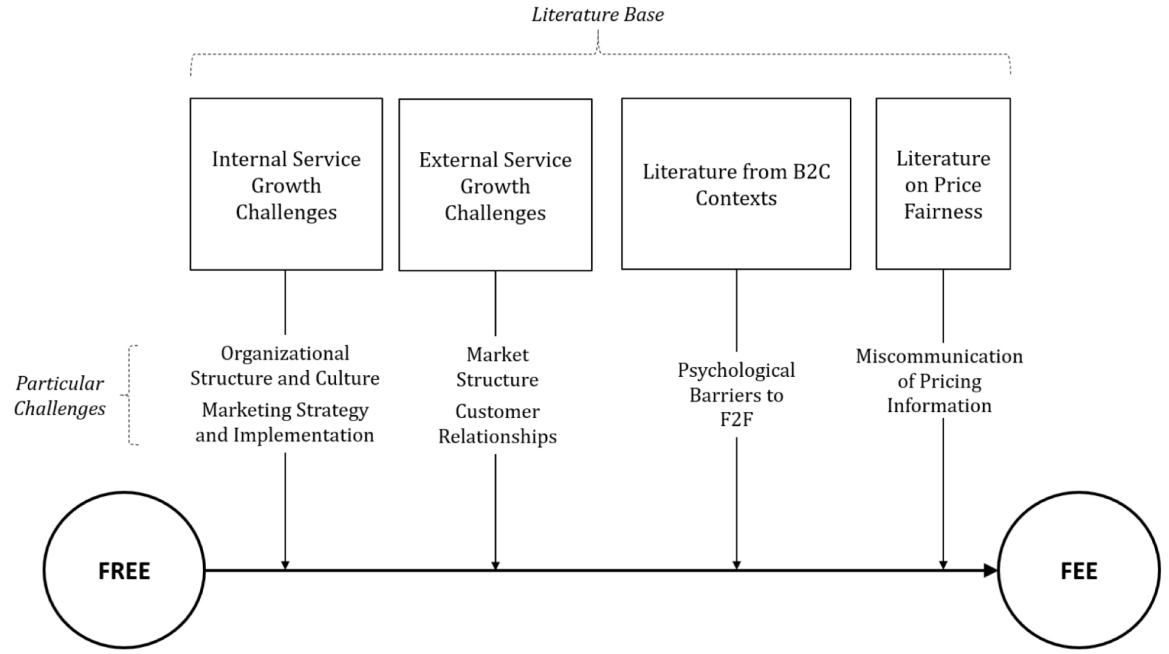


Figure 2.1: Conceptual underpinnings of the study.

Taking the extant literature as a point of departure, we employed the TIU approach (Zeithaml et al., 2020) following Tuli et al. (2007). TIU is well suited to research in which scholars seek to understand the perspectives and mental models of subject matter experts regarding how things work in particular contexts or scenarios (Zeithaml et al., 2020). This approach is in line with our study, the goal of which is to clarify an ill-defined concept while developing a deep understanding of managers' perceptions of how their organizational choices and actions lead to desired outcomes (in this case, free-to-fee transformation).

Literature on Internal Service Growth Challenges: Existing literature suggests that free-to-fee transformations may entail internal challenges in two major areas: (i) a firm's organizational culture and structure, and (ii) its marketing strategy and implementation (Brentani, 1989; Matthyssens & Vandenbempt, 1998; Ulaga & Reinartz, 2011). The literature clearly suggests that shifting the organizational culture from "pushing boxes" (i.e., selling industrial products) to a service-oriented mindset is a major challenge for many industrial companies (Eggert et al., 2014; Fang et al., 2008; Ulaga & Reinartz, 2011). Consequently, product-centric firms often tend to view free services as a "necessary evil" to enable product sales (Robinson, Clarke-Hill & Clarkson, 2002). Hence, employees (e.g., field service

technicians or sales personnel) of product-centric companies may simply lack insights into potential customer value created by service offerings, if not the service business overall (Oliva & Kallenberg, 2003; Storbacka, Polsa & Sääksjärvi, 2011; Terho, Haas, Eggert & Ulaga, 2012; Töytäri, Alejandro, Parvinen, Ollila & Rosendahl, 2011). Such issues may impede free-to-fee transformations.

Second, free-to-fee transformations may require fundamental changes in a firm's strategy to integrate service business with traditional product-based businesses (Tuli et al., 2007; Ulaga & Reinartz, 2011). The firm may need to revisit its business model by rethinking the role of service revenues within overall revenue or shifting the focus from volume to value when setting growth objectives (Tuli et al., 2007; Ulaga & Reinartz, 2011). This, in turn, may necessitate changes to organizational structures and processes to accommodate free-to-fee transformations (Matthyssens & Vandenbempt, 1998; Parida, Sjödin, Wincent & Kohtamäki, 2014; Raddats, 2011).

Literature on External Service Growth Challenges: Compared with internal challenges, existing research offers limited insights into external challenges. Our literature review revealed that external barriers to free-to-fee transformations may depend on the overall market structure and condition, along with the intensity of supplier-customer relationships (Anderson & Narus, 1995; Matthyssens & Vandenbempt, 1998; Rabetino et al., 2015). For instance, Ryals and Holt (2007) found that powerful customers tend to capture a larger share of the value co-created via suppliers' offerings. Not paying for services could be a function of this power imbalance.

The intensity of a supplier-customer relationship may pose a major external barrier to free-to-fee transformations (Anderson, Håkansson & Johanson, 1994; Barry & Terry, 2008; Walter, Ritter & Gemünden, 2001). In industrial markets, developing and maintaining a strong relationship with a customer is often considered critical (Barry & Terry, 2008; Ryals & Holt, 2007; Walter et al., 2001). And yet, customer intimacy could inhibit a free-to-fee initiative as a supplier may be concerned that such a move would adversely affect the relationship (Anderson et al. 1994; Barry & Terry, 2008; Parida et al., 2014).

Literature on B2C Contexts: Prior studies focusing on pricing in consumer markets have underscored the widespread presence of free services in their respective contexts, offering some guidance to address the problem at hand (Bond et al., 2019; Brady et al., 2012; Lambrecht & Misra, 2017). Shampanier et al. (2007) noted that starting to invoice formerly

free offerings is psychologically challenging. In consumer-oriented studies, the specificity of dealing with free services has mainly been addressed in online customer relationships and digital services or often in conjunction with "freemium" business models (Bond et al., 2019; Lambrecht & Misra, 2017; Pauwels & Weiss, 2008). Because interactions with a large base of online consumers are anonymous by default, free-to-fee transformations often translate into discreet decisions about making an app or digital content available free of charge, pursuing a freemium approach, or setting up a paywall (Lambrecht & Misra, 2017).

This approach, however, is very different from industrial market contexts, where supplier-customer interactions are often tailored to individual accounts and are long-term in nature. Here, a free-to-fee transition may necessitate a much more comprehensive approach than simply introducing a paywall for accessing content on a website or moving to a freemium business model (Anderson et al., 1994; Barry & Terry, 2008; Ryals & Holt, 2007). For these reasons, similar to the psychological challenges of a free-to-fee transformation in consumer settings (Brady et al., 2012; Lambrecht & Misra, 2017), such a transition can be just as challenging in the context of industrial services.

Literature on Price Fairness: Existing literature on price fairness, and especially dual entitlement principle, may shed further light on the challenges associated with free-to-fee transformations (Bruno et al., 2012; Dutta et al., 2003; Varki & Colgate, 2001). The theory states that both sellers and buyers are entitled to the profit and price terms – unjustified price increases are perceived as unfair but cost justification legitimizes the price increase in the customer's eyes (Kahneman et al., 1986; Urbany et al., 1989). However, a seller's profit entitlement takes precedence over a buyer's price entitlement whenever both are threatened (Kahneman et al., 1986). These dynamics are consistent with community norms of fairness as cost increases are passed on to customers in the form of higher prices to protect the seller's reference profit (Boyd & Bhat, 1998; Kahneman et al., 1986). From a dual entitlement perspective, industrial suppliers should be entitled to appropriate compensation as long as they effectively communicate to customers the costs associated with providing a service that is currently free (Urbany et al., 1989).

Thus, free-to-fee transformation can stem from the inadequacy of effective communication outside the firm boundaries regarding the cost of providing services for free, posing an external challenge. Simultaneously, prior research suggests that the ability to set prices and ensure that they are properly implemented is not axiomatic to firms (Dutta et al.,

2003). Rather, existing literature indicates that B2B managers often lack sufficient knowledge or the strategic rationale to adequately price services, which may pose a major internal challenge for free-to-fee transformation (Liozu & Hinterhuber, 2013; Morris & Fuller, 1989).

In sum, free-to-fee transformation lies at the intersection of four streams of literature that provide the foundations of our study. In the present research, we integrate, build on, and extend these somewhat fragmentary fields of knowledge.

2.3 Methodology

In line with the TIU approach (Tuli et al., 2007; Zeithaml et al., 2020), we conducted in-depth interviews with key decision-makers in industrial companies (McCracken, 1988; Strauss & Corbin, 1998). We then analyzed data according to the main themes of our study – the characteristics of free services, the challenges faced by industrial suppliers in their free-to-fee transformations, and the actions or activities they deployed to overcome those challenges (Boyatzis, 1998; Strauss & Corbin, 1998).

Galbraith's (2008) framework of organizational design guided the way our data were analyzed and findings are presented, as also adopted by multiple significant studies (e.g., Homburg, Jensen & Hahn, 2012; Le Meunier-FitzHugh, Massey & Piercy, 2011). According to the framework, effective alignment of the four critical organizational dimensions – structures, processes, rewards, and people – is vital to successfully achieve organizational goals. In Galbraith's (2008) framework, organizational structures outline the type and number of job specialties needed, along with the location and movement of decision-making power and authority. Next, processes define actions or steps taken to achieve specific goals. Third, rewards influence employees' motivation to execute organizational strategies and perform accordingly. Finally, the people dimension is geared toward acquiring and developing the talent, skills, and capabilities necessary to implement strategies. The four dimensions are interconnected (Galbraith, 2008). In the present research, we relied on these dimensions to uncover key actions and activities that firms undertake for successful free-to-fee transformations.

2.3.1 Data Collection

Sampling Procedure and Characteristics

We employed purposive sampling to identify both the firms to be studied and their respective informants (Palinkas et al., 2015). Our main purpose was to: (i) identify industrial suppliers engaged in various stages of free-to-fee transformation journeys, and (ii) select interviewees who were key decision-makers in the transformation process. To capture a broad range of perspectives, we selected a cross-section of B2B industries, including automotive, maritime, material handling, medical equipment, mining and construction tools, and petrochemicals, and identified one or two firms per industry to study. The suppliers in our sample rank in the top three globally in their respective industries. The key characteristics of our sample are presented in Table 2.1.

Table 2.1: Key characteristics of the sample of this study.

Company (Pseudonyms)	Industry	Year of Establishment	Annual Revenue	Number of Employees	Core Product Offerings	Service Portfolio	Interviewee(s)	Duration
Industrial Vehicles Firm[1]	Materials handling	1879	~$2 billion	~3,000	Trucks, pallet stackers, tow tractors, forklifts	Maintenance and repair, performance upgrade, process developments and improvements, retrofit and accessories, technical and safety, training services	After-Sales Manager (Germany, Benelux, Austria, and Switzerland)	~1.5 hours
Industrial Machinery Firm[1]	Mechatronics	1907	~$7 billion	~44,000	Bearings, seals, lubrication systems	Application engineering, asset management, condition-based maintenance, mechanical maintenance, remanufacturing, customization	Global Manager (Value)	~1.5 hours
Engine Firm[1]	Industrial propulsions	1834	~$5 billion	~19,000	Engines for ships and electricity power plants	Real-time data and insights, lifecycle support, technical documentation, field services	President (Energy Solutions) President (Services)	~1 hour 15 minutes ~1.5 hours
Food Processing Machine Firm[1]	Capital machinery	1860	~€2.1 billion	~10,500	Food processing plants and equipment	Automation, installation, retrofits, assessment, consulting	Chairman of the Board (Former CEO) Head of Customer Service Head of Pricing and Market Development	~45 minutes ~1 hour ~1 hour
Diagnostic Firm[2]	Diagnostic technology, equipment, chemicals	1937	~$2.3 billion	~11,000	Newborn screening technologies, diagnostics technologies, analytical instruments, informatics	Cord blood and cord tissue banking, genetic and newborn testing, laboratory services, research services	Global Business Manager	~1.5 hours

[1] Established record of successful F2F transformations, documenting revenue and profit generation
[2] Partially successful in F2F transformations, reporting sporadic success stories

Shipbuilding Firm[2]	Maritime	2005	~€3.5 billion	~12,000	Cargo handling machinery for ships, ports, terminals, warehouses	Cargo optimization on container ships, load handling, intelligent cargo loading, automated terminals, software, support services	Chief Naval Architect Sales Manager Naval Architect (General Cargo Ships)	~1 hour ~45 minutes ~1 hour
Construction Machinery Firm[2]	Construction, building maintenance, mining	1941	~$4.7 billion	~24,000	Industrial drills, firestops, laser levels, power saws, anchoring systems, installation systems	A range of engineering, tools, and quality and testing services	Product Manager Services Manager	~1 hour ~1 hour
Cancer Cure Firm[2]	Medical equipment	1987	~$420 million	~1,000	Oncological radiation therapy machines	Site planning and installation, training and education for oncology therapists, technology upgrades	Global Head of Services	~1 hour
Security Firm[3]	Industrial security systems	1994	~$7 billion	~48,000	High-tech locks and security systems	Technical drawings, project planning, consultancy	Vice President (Business Development)	~1 hour
Petrochemicals Firm[3]	Petrochemicals	1948	~€13.2 billion	~5,000	Petroleum refineries and retailing	Monitoring and efficiency improvement of petroleum usage, onsite storage	Executive Vice President (Oil Retail) Vice President (Marketing and Service Design)	~1.5 hours ~1 hour
Transportation Firm[3]	Automotive	1871	~$44 billion	~244,000	Tires, brake systems, interior electronics, safety equipment, powertrain, chassis	Product testing, precision engineering support	Director (Sales & Portfolio Business)	~45 minutes

[3] Beginner in F2F transformations; few tangible results

To maintain comparability, we needed the suppliers to share some common characteristics. Following Ulaga and Reinartz (2011), we focused on firms with a prevalent core in manufacturing. To enhance the breadth and depth of our investigation, we examined suppliers at different stages of their respective free-to-fee transformation based on two criteria: (i) the degree of their experience in working on free-to-fee transformations, and (ii) outcomes achieved, where revenue and profit growth had been documented. The first group of companies had an established record of successful free-to-fee transformations. Hence informants could report on substantial experiences of turning around free services from cost drains to profit sources. The second group was considered partially successful, consisting of managers who reported sporadic successes. The third group of companies recognized the need for free-to-fee transformation and had already launched initiatives yet had few tangible success stories (see Table 2.1).

We interviewed key decision-makers who were directly involved in the planning, design, and execution of free-to-fee transformations (Tuli et al. 2007; Ulaga and Reinartz 2011). The sampling process ceased when data saturation was reached, as indicated by information redundancy and lack of newness in the data (Boyatzis 1998; Palinkas et al., 2015; Ulaga & Reinartz, 2011). Our final sample consisted of 19 key informants from 11 firms, consistent with the sample size recommendation for exploratory research (McCracken, 1988).

In-depth Interviews

We conducted in-depth interviews based on a semi-structured interview guide to learn from key informants' expertise, experience, perspective, and contextual specificities (Strauss & Corbin, 1998). The guide served both as a reference point and a means to keep the interviews focused. Its semi-structured, open-ended design allowed the interviewees to respond in an unobtrusive, nondirective manner while helping us avoid the potential pitfalls of "active listening" (McCracken, 1988; Strauss & Corbin, 1998).

In the first part of the interview, we collected background information, including interviewees' educational qualifications and job experience, primary responsibilities in their current position, and involvement in their company's free-to-fee transformation initiatives (McCracken, 1988; Strauss & Corbin, 1998). The second part focused on participating firms' core product businesses, the context of service growth, details regarding the free services

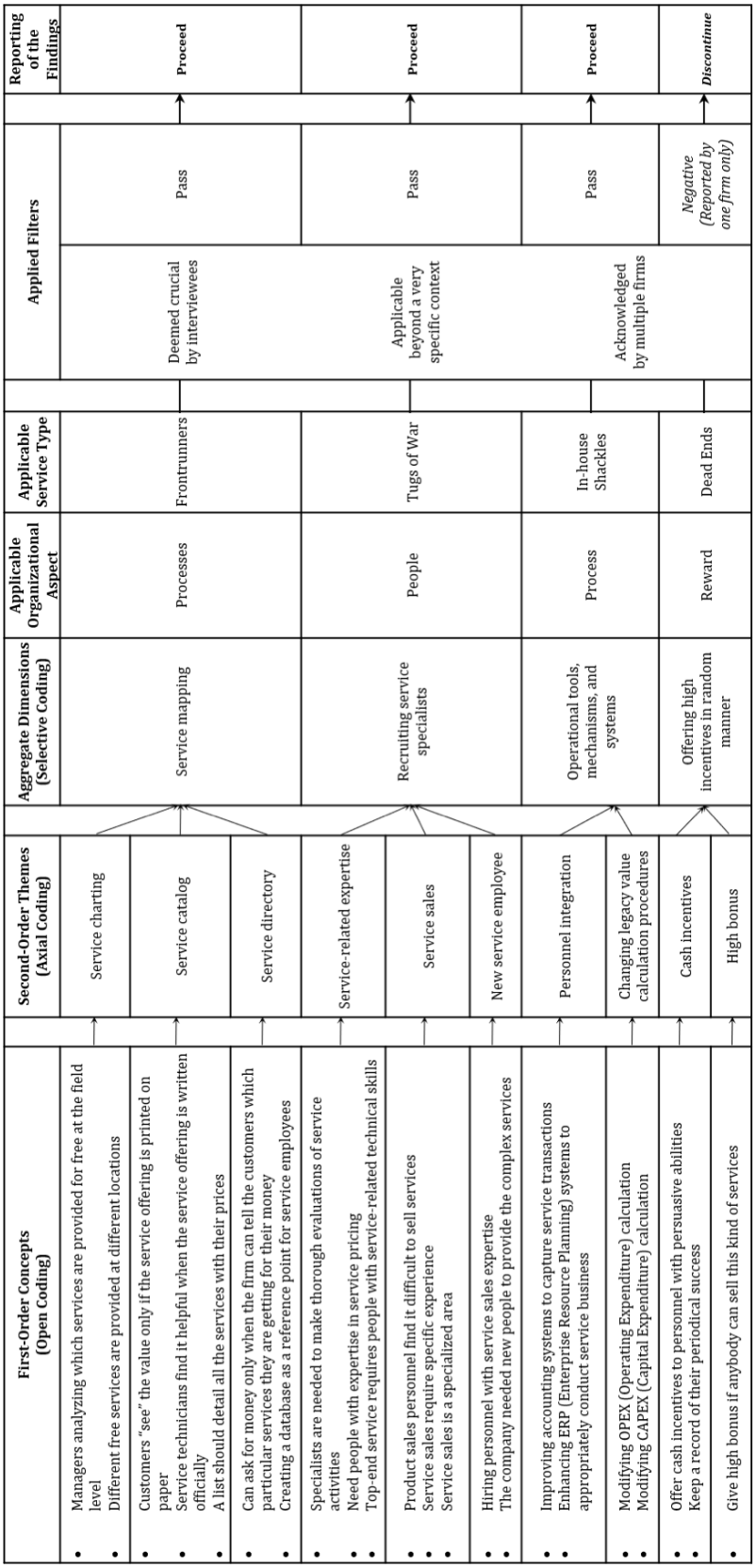
provided, and the underlying reasons for providing said services. We then asked about specific free-to-fee initiatives undertaken by their firm (McCracken, 1988; Strauss & Corbin, 1998), explored the challenges faced, and had informants detail the actions and activities deployed to overcome those challenges.

Our interviews aimed to elicit contrasting examples of both successful and failed initiatives to explore the depth and breadth of the challenges and success factors that emerged. We asked additional questions when clarification was needed (McCracken, 1988; Strauss & Corbin, 1998). All interviews were audio-recorded and lasted an hour on average.

2.3.2 Data Analysis and Interpretation

We started the data analysis process by transcribing the interviews, resulting in 293 single-spaced pages of text. Next, we coded the data in three consecutive stages: open, axial, and selective (Strauss & Corbin, 1998). An illustration of the coding process is provided in Table 2.2.

Table 2.2: Coding process of this study.



Using the MAXQDA software (version 2016), two of the authors independently performed open coding, identifying initial concepts in the data and grouping them into categories (Gioia, Corley & Hamilton, 2013). Following Gioia et al. (2013), we strived "to adhere faithfully to informant terms" and relied on in-vivo or descriptive codes. Based on Perreault and Leigh (1989), we then assessed inter-judge reliability between the two researchers. Despite slight differences in tagging, the codes pointed to nearly identical meanings. Our inter-judge reliability reached 0.86, well above the threshold of 0.70 suggested for exploratory research (Perreault & Leigh, 1989). Finally, where necessary, we discussed differences in coding (e.g., wording, different interpretations of the same fragments), agreed on changes as needed, and revised the coding accordingly.

In the second step, we moved to axial coding (Gioia et al., 2013). We congregated the fragmented open codes and searched for relationships between and among the categories, allowing us to assemble them into higher-order themes(Gioia et al., 2013; Strauss & Corbin, 1998; Yanow & Schwartz-Shea, 2015). We then allocated the open codes to categories of critical actions and activities deployed by the firm to engender free-to-fee transformations (Gioia et al., 2013; Strauss & Corbin, 1998). Finally, for selective coding, we gathered similar themes into several overarching dimensions to capture the essential underlying attributes of the cumulative categories (Gioia et al., 2013; Strauss & Corbin, 1998), and grouped the categories against the themes of structures, processes, people, and rewards (Galbraith, 2008).

Following Tuli et al. (2007) and Ulaga and Reinartz (2011), we applied three specific criteria to report the findings: (i) the particular actions and activities were deemed crucial by interviewees in overcoming free-to-fee challenges, (ii) they were applicable beyond a very specific context, and (iii) they were acknowledged by multiple suppliers. Moreover, before reporting the results, all authors reviewed the data analysis process for internal consistency and refined the wording of findings and selected examples. Further, to enhance content validity, we sent a summary report based on the findings to five randomly selected interviewees and invited them to comment. All five provided feedback that indicated overall agreement with our findings. However, respondents also suggested slight changes in language, which we incorporated after further discussion.

2.4 Study Findings

2.4.1 Characterization of Free Services in Industrial Markets

Identifying truly free services in industrial markets is not as straightforward as it might seem at the first glance. Providing services to customer organizations and obtaining appropriate compensation in return reflects the idea of "economic exchange," one of the most fundamental concepts of marketing (Bagozzi, 1975; Houston & Gassenheimer, 1987). The exchange concept suggests that parties engage in transactions to obtain something desirable in return for providing something that the other party values (Bagozzi, 1975; Houston & Gassenheimer, 1987). In other words, to "get" something desired, each party must "give" something of value (Bagozzi, 1975; Houston & Gassenheimer, 1987).

In the introduction section, we alluded to the possibility that industrial firms may provide "seemingly free" services to pursue latent goals (Brentani, 1989; Challagalla et al., 2009; Kohtamaki et al., 2015). Our empirical investigation confirms this possibility and distinguishes between "seemingly" and "truly" free services. For "seemingly free" services, there is undoubtedly a "get" component from the supplier's side, even though they label those services as "free." For further conceptual clarification, we present two such cases of "seemingly free" services identified in our sample. These types of services are outside the scope of our study.

In one instance, we found "free services for business development." Here, the supplier provides "seemingly free" services to increase product sales by facilitating higher product order volumes or securing a larger share-of-wallet:

"Sometimes, we can benefit in other ways. For example, if customers want to send those wind turbine bearings, which is one of their most important assets, to our metallurgical lab and get an analysis of aluminum integrity, that's costly for us. We then say, 'In return, we want 50% of your annual purchases of bearings, seals, and lubricants.' You know, they are not going to get all those free services if they buy only 10% of their annual purchase from us!"– Global Manager (Value), Industrial Machinery Firm

In another example, we identified "cost-inclusive free services," whereby the costs of service provision are paid for by the contribution margins of products sold. In markets where core products are increasingly commoditized and profit margins are under pressure (Macdonald et al., 2016; Ulaga & Reinartz, 2011), suppliers offer "seemingly free" services to justify higher prices. In reality, though, the costs of providing those services, and their respective margins, are concealed in the underlying product margins. As one interviewee explained:

"Our automated powertrain components (transmissions, driveshafts, differentials, etc.) are more expensive than those of our competitors – for example, if you source from Asian suppliers. So, to defend the higher price, we sometimes tell the customers (car manufacturers) that we will provide them telemetry data free of charge, which are very useful to them to improve vehicle efficiency. However, in reality, we calculate overhead costs and some margins for those services and include them in the final product price."– Director (Sales & Portfolio Business), Transportation Firm

In both above-mentioned cases, despite labeling a service as "free", suppliers are cognizant of both the "give" and the "get" components involved. However, our research also revealed many instances in which reciprocity was lacking – that is, suppliers provided services activities without getting any benefit in return. Further, we found instances where vendors speculated about a possible "get" component but could not identify or document any, even in a non-monetary form. Consider the following two statements:

"Our sales personnel have given away free seats in our technical training programs. It costs us a lot, but we don't know what we get in return. The hope is that those free seats would turn into future customer business. But whenever I ask, 'What happened to those freebies?' the answer is 'We don't know' or 'They finally had other priorities,' at best."– Global Business Manager, Diagnostic Firm

"We don't get anything in return for providing free consulting services. Not money, not better price, not any additional business. People in our company often think that we are getting something in return, but nobody has any document or evidence of getting anything"– Chief Naval Architect, Shipbuilding Firm

The above statements clearly illustrate that some ostensibly free services are not truly free despite suppliers labeling them as such. Considering these characterizations, we offer the following definition of free services in industrial markets: *A free service is the application of*

specialized knowledge, capabilities, and resources by the supplier to achieve customer-desired tangible business outcomes concerning their assets, processes, or operations without monetary compensation or other forms of documented benefit in return for the value added. Figure 2.2 provides a visual illustration of truly free services as part of a broader array of service activities.

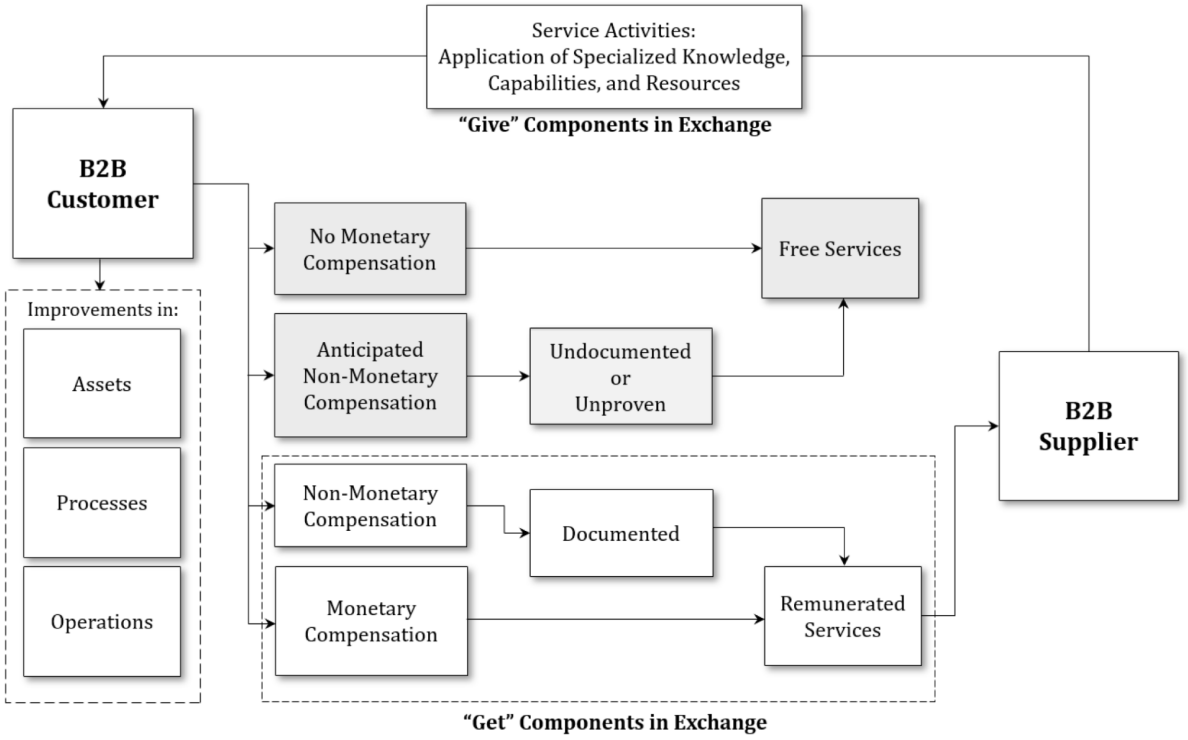


Figure 2.2: Characterization of free services in industrial markets.

According to our characterization, a service is not considered free when in return for a "give" component there is evidence (e.g., documentation) of a "get" component, monetary or otherwise. But, as shown in Figure 2.2, it is considered free if there is no monetary compensation at all or a supplier anticipates various other forms of returns but cannot prove or document any such reciprocity. Thus, it represents a cost drain on the firm – a major challenge for industrial suppliers trying to grow their service business (Anderson & Narus, 1995; Michel, 2014; Ulaga & Michel, 2018; Witell & Löfgren, 2013).

Once "truly free" services are identified, the question is whether they all have the same free-to-fee transformation potential – in other words, whether they all present equal opportunities and challenges for transforming such activities into revenue and profit sources (Anderson & Narus, 1995; Ulaga & Michel, 2018). The short answer is no. Our empirical

investigation revealed major differences according to the type and degree of internal and external challenges faced. The heterogeneous nature of these challenges (and of the services themselves) exemplifies the need to develop a typology that helps academics identify and learn from comparable scenarios while supporting managers in their use of strategies and tools adapted to their industry and firm contexts (Boyt & Harvey, 1997; Doty & Glick, 1994; Mathieu, 2001; Ulaga & Reinartz, 2011).

2.4.2 Typology of Free Industrial Services

As manifested in the conceptual underpinnings section, industrial firms seeking to grow service businesses may face both internal and external challenges (Kohtamaki et al., 2015; Macdonald et al., 2016; Oliva & Kallenberg, 2003; Ulaga & Reinartz, 2011). Our empirical investigation confirms the existence of both types of challenges, identifies key internal and external barriers experienced by executives, and provides fine-grained insights into both the nature of these hurdles and initiatives taken to overcome them. For instance, we found that a prevalent external challenge is customer resistance:

"We offer free real-life performance testing facilities and services for tires in high-performance cars. Arranging those tests in different tracks and weather conditions around the globe is highly expensive. We have been thinking of charging customers for some time, as the costs are simply too high to be included in overhead. However, we are concerned that customers got used to getting it free, and they will resist strongly (against free-to-fee transformation)"– Director (Sales & Portfolio Business), Transportation Firm

Multiple studies (Storbacka et al., 2011; Terho et al., 2012; Töytäri et al., 2011; Ulaga & Loveland, 2014) have shown that expanding into service business requires industrial firms to reorient their sales personnel toward selling the service offerings in question. This issue is exemplified in the case of free-to-fee transformations, where opposition from sales personnel toward free-to-fee initiatives emerged as a frequently cited internal challenge. As the following statement illustrates:

"Our product sales personnel were very much against such a move. Selling services is an unfamiliar territory for them, and they often want to avoid it at all cost"– President (Services), Engine Firm

Juxtapositioning external and internal challenges (Ryals & Holt, 2007; Tuli et al., 2007; Ulaga & Reinartz, 2011; Walter et al., 2001), we developed a typology to identify four types of free services, each with its own set of free-to-fee transformation challenges and potential. To capture the nature of each type, we labeled them as follows: *Front-runners, Tugs of War, In-house Shackles,* and *Dead Ends*, as presented in Figure 2.3.

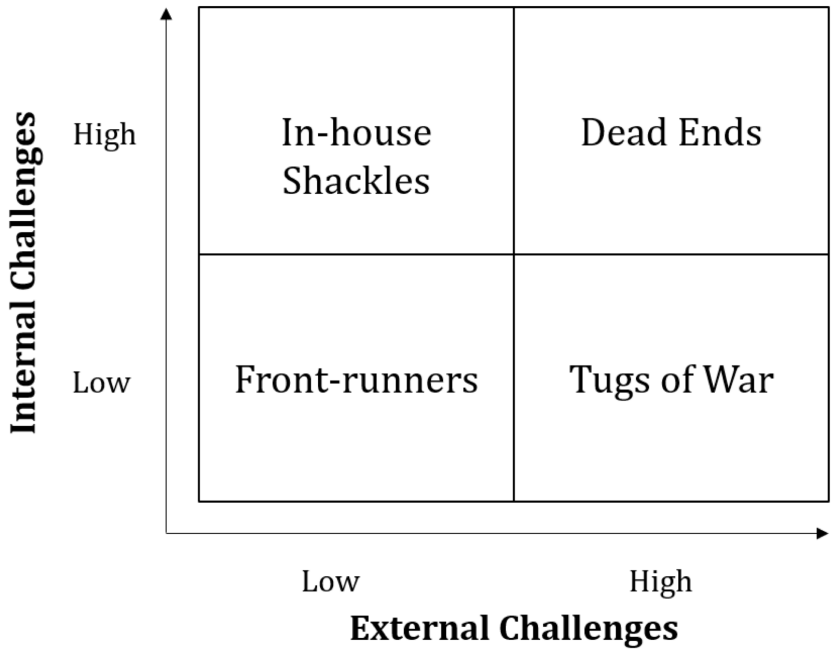


Figure 2.3: Typology of free industrial services.

Combinations of challenges vary by industry and individual firm context. Thus, what may appear as a "Dead End" to one firm might pose different challenges and potential to another. It is important to note, however, that once a firm has identified a given type, it can address challenges accordingly to unlock revenue and profit potentials. In Table 2.3, we present the various free services that firms in our study dealt with.

Table 2.3: Free industrial services investigated in this study.

	Free Service Types			
Firms (Pseudonyms)	**Front-runners**	**Tugs of War**	**In-house Shackles**	**Dead Ends**
Industrial Vehicles Firm	Warehouse operations enhancement	X		Technical diagnosis of industrial vehicles
Industrial Machinery Firm	X	X	Monitoring and lubrication management services for industrial bearings Rotating equipment performance management	Call center for basic technical support
Engine Firm	X	X	Repair and maintenance Analytics and monitoring	Real-time data-based insights
Food Processing Machine Firm	Automation consulting	Power and efficiency benchmarks	X	Remote technical services
Diagnostic Firm	Discharging and refilling formaldehydes	X	Training and education for diagnostic laboratory technicians	Call center for basic technical support
Shipbuilding Firm	Cargo efficiency improvement for existing ships	Technical consultancy, including weight calculations and future cash-flow analyses	X	X
Construction Machinery Firm	Custom machine tool engineering	X	Fire safety and accident prevention training	Simple technical advice on calibrating laser levels
Cancer Cure Firm	Process improvement services	Site planning and installation	X	Call center for basic technical support
Security Firm	X	Technical consultancy regarding customers' overall security systems	X	After-sales customer support
Petrochemicals Firm	X	Free provision and installation automated large petroleum storage tanks	X	Petroleum additive certification
Transportation Firm	X	Engineering support	X	After-sales customer support

Front-runners

The first category of free services faces relatively low challenges – both internally and externally – to free-to-fee transformation. Therefore, we label them "Front-runners", as they require the least effort for a successful transformation and offer the most immediate revenue and profit potential to firms. In the words of one interviewee:

"Out of all the free services we were giving away, this (automation consulting) was the rather easy one to start invoicing. Well, it's not like customers were happy to pay—they never are! Especially, as the service was free earlier. However, apart from us, nobody else in the market offers this service (low external challenge). Our salespeople also realized they won't have to break much sweat to sell it, so they went for it (low internal challenge)."– Head of Pricing and Market Development, Food Processing Machine Firm

Examples of "Front-runners" in our study include free services that improve the efficiency and effectiveness of customers' operational processes, as well as activities that reduce process-related risks. We found that such services were grounded in leveraging the supplier's specialized knowledge and competencies to assist customers in optimizing their processes or selected elements thereof. They were highly customized, too, with no equivalent services offered by direct competitors or third parties.

In line with existing B2B literature (Storbacka et al., 2011; Terho et al., 2012; Töytäri et al., 2011; Ulaga & Loveland, 2014), sales personnel's buy-in and active involvement in the free-to-fee transformation process repeatedly surfaced as an illustration of a low internal barrier. Moreover, suppliers in our sample could easily identify, document, and communicate the value customers gained from using such services (Macdonald et al., 2016; Ulaga & Eggert, 2006). The following remark offers further insight:

"Sometimes, the services we provide for free are simply not good enough to sell, so everybody hesitates with such an (free-to-fee) initiative. Not this time! The quality of our custom machine tool engineering service was one of the best in the market; we knew what customers were getting out of it and we also had all the tools needed to sell it."– Services Manager, Construction Machinery Firm

Key informants often referred to a lack of competition in the market, along with relatively little resistance from customers, as examples of low external barriers. Consider the

example of a free service provided to optimize cargo transport, reduce accidents, and prevent forklift drivers' injuries in the customer's warehouse:

"Over several years, we have conducted thorough analyses of customers' entire warehouse operations processes. We also helped them to optimize cargo movement inside those large warehouses and reduce accidents, and they value it. So, even though, in the beginning, we provided the services for free, we did not upset the customers by invoicing those services going forward. Our competitors do not offer similar services, either, so it (free-to-fee transformation) was relatively easy."– After-Sales Manager (Germany, Benelux, Austria, and Switzerland), Industrial Vehicles Firm

In sum, Front-runners are existing free services that face comparatively few internal challenges, the value of which suppliers can identify, document, and communicate to customers with relative ease. Moreover, external barriers are relatively low due to a lack of competition in the market, resulting in comparatively less customer resistance.

Tugs of War

The second category of free services identified in our study faced relatively low internal challenges to free-to-fee transformation but much higher challenges from beyond the firm boundaries. Moreover, suppliers struggled to obtain information regarding customer value created by these services. As suppliers and customers disagreed on whether, how, and how much value was created, customers' willingness-to-pay (Meyer et al., 2018) remained very low. Considering these characteristics, we labeled such free industrial services "Tugs of War." In such situations, a free-to-fee transformation hinges on how well a supplier can align the critical organizational dimensions to address challenges that reside outside the firm's boundaries.

Our key informants explained that such services are generally delivered on an ad hoc basis – usually at the customer's request – and are frequently independent of product-related sales transactions. Examples that surfaced in our study included free power and efficiency benchmarks, technical consultancy (e.g., weight calculations and future cash flow analyses), site planning and installation, engineering support, and technical drawing and design work.

Interviewees highlighted a major challenge that does not appear in the existing literature: the difficulties of receiving information regarding the benefits that customers

gained from using these "Tugs of War." Companies in the early stages of free-to-fee transformations were more beset by this challenge than those that had more experience in approaching customers, as one informant explained:

"Let's say, for a new five-star hotel building, our electronic access control systems are part of a bigger and complex security system. The primary contractor that is building the entire facility is also in charge of developing and installing the overall security systems, which include expensive technical components from multiple suppliers. As this is not normally their area of expertise, they often ask for free consultancy from us. We have some idea that the services are valuable to them, but we don't exactly know how and how much. And, they never tell us. If we knew, we would have been in a better position to ask them for a price."– Vice President (Business Development), Security Firm

Another example was cited by a manufacturer of cranes and related mechanical systems for cargo ships, a company with moderate free-to-fee transformation success:

"Our technical experts put in quite a lot of work in advance, including possible technical solutions, weight calculations, and even future cash-flow analyses for the ship operator. Even though we provide the services for free, there's no guarantee of getting the business. So, we want to charge for the services separately. However, sitting here in Europe, it's very difficult for us to know how the shipyards in East Asia actually use these services and the value they get from them. Also, they don't share that information with us. We can't charge for the services if we don't know which specific benefits customers get, and how important they are to the customers."– Chief Naval Architect, Shipbuilding Firm.

The existing literature offers some indications that the external challenges may hinge upon customers, competitors, and overall market conditions (Matthyssens & Vandenbempt, 1998; Rabetino et al., 2015; Ulaga & Reinartz, 2011). For example, Ryals and Holt (2007) found that power imbalance in a customer-supplier relationship holds back suppliers from appropriating value in face of powerful customers. Contexts of power imbalance in our sample favored the emergence of "Tugs of War" services. The following observation offers an illustration:

"Yes, charging for these engineering support services will be brilliant. We don't have anything else to gain from providing these services, either, as they do not increase our product sales volume. But, it will be a hard sell – probably, the customers will simply say 'no.' In this

industry, they hold a lot of power!"– Director (Sales & Portfolio Business), Transportation Firm

Strong customer resistance was also prevalent in situations where free services were considered common industry or firm practice. One of the interviewees expressed his concerns as follows:

"I mean, we have been providing the site planning and installation service for free for ages. And, the services are not about only installing our products. Rather, we offer consultancy on how to integrate all the cancer treatment equipment in a facility. All of us in our company think we should get paid. But the customers are so used to it being free. Now, if we suddenly go and tell that they must pay, I think we will have a very difficult time making them agree!" – Head of Services, Cancer Cure Firm

Thus, suppliers in our study found it difficult, if not impossible, to depend solely on arguments based on the endured service provision costs as justification for asking for a price. These findings are in stark contrast to the dual entitlement principle, which suggests that a cost justification "legitimates" a price increase in the customer's eyes (Boyd & Bhat, 1998; Kahneman et al., 1986; Urbany et al., 1989). Consider the following statements for further illustration:

"It's not that easy (free-to-fee transformations of Tugs of War). Even when you show them your costs (to provide the existing free services), they refuse to pay. They always try to get away with it (free services)."– Chairman of the Board (Former Chief Executive Officer (CEO)), Food Processing Machine Firm

"Well, customers generally come up with some sort of arguments, even though they know it costs us to provide these services. Our costs do not matter to them if they can get it without paying anything."– Director (Sales & Portfolio Business), Transportation Firm

In sum, dominant external challenges, from customers' reluctance to pay to suppliers' difficulties in gaining clear insights about customer value, are characterized as "Tugs of War."

In-house Shackles

Our interviews identified a third type of free services, in which external hurdles appeared to be relatively low. Rather, the major barriers resided within supplier organizations. Therefore, we labeled these services "In-house Shackles." Consider the following observation

by our informant from a diagnostics firm providing free training and education programs for oncology therapists:

"We could have sold tons of those services. I am certain that there is demand in the market, and it wouldn't have been very difficult to convince the customers (to pay). Only if we could surpass all these naysayers among us."– Global Business Manager, Diagnostic Firm

Our data show that "In-house Shackles" generally emerge in the context of service activities provided for a supplier's own installed-base. Examples in our study include monitoring and lubrication management services for industrial bearings, training and education programs for oncology therapists, and fire safety and accident prevention training. Our key informants pointed toward multiple internal challenges. In line with existing research, "In-house Shackles" typically entailed strong opposition from a manufacturer's established product-sales personnel (Storbacka et al., 2011; Terho et al., 2012; Töytäri et al., 2011; Ulaga & Loveland, 2014). For example, one informant explained such resistance to invoicing customers for monitoring and lubrication management services for industrial bearings:

"A rather difficult problem is our product salespeople. They are so used to selling physical products… They simply do not want any move towards selling services. As I said before, they think that selling products is everything, and services are just something extra. Overcoming their resistance is a big challenge here."– Global Manager (Value), Industrial Machinery Firm

Further, our interviews revealed that sales personnel's resistance tended to be associated with a firm's incentive structure. Managers explained that performance evaluations and rewards were often tied to product sales only, thus offering little incentives to sell the existing free services. We also learned that a supplier's goods-centric mindset could create substantial internal barriers, especially in the early stages of an free-to-fee transformation, as a key informant from the construction machinery company explained:

"The angle grinder, used to cut concrete, is one of the most dangerous tools in a construction site, as sparks fly in every direction and there are real risks of fire. So, we provide free training services on safe usage of this equipment, which is very helpful for fire safety and accident prevention and has a real impact on reducing their risks. So, we know the value of these services and can show it to customers. However, when I wanted to change it into a paid service, it was very much of a mindset issue throughout the company. People were

like: 'We are a product company! Why should we go into service business?'"– Service Manager, Construction Machinery Firm

Multiple interviewees noted that internal challenges also arise at the operational end of supplier organizations. At the construction machinery firm, frontline technicians formed close associations with site supervisors and employees of their customer firms, and thus wanted to avoid the emotional discomfort of asking for a price for "helping their friends". This closely reflects "Service Sweethearting" in B2C markets, by which frontline workers give away unauthorized free or discounted services to customers (Brady et al., 2012).

Much to our surprise, we found that internal operational and support processes, including accounting and information systems, often represented major hurdles to free-to-fee transformations, an issue that does not surface in prior industrial services literature. In multiple instances, these systems were largely designed to satisfy the needs of a product manufacturing firm, not a service provider, creating a substantial internal hurdle:

"Our ERP (Enterprise Resource Planning) systems were product-based. There was simply no space to keep any kind of record for anything related to services, so our people would rather give them away for free. You may think it's a trivial issue to overcome, but with a company of our size, it takes significant investments and time to make the necessary modifications before we could even begin charging for services!"– President (Energy Solutions), Engine Firm

In sum, several challenges, mainly from within the organization, characterize these "In-house Shackles."

Dead Ends

The final type of free service has the lowest potential for successful free-to-fee transformation. They face a high degree of both internal and external challenges to the initiation of invoicing for services hitherto provided free of charge. Accordingly, we label these services "Dead Ends."

We found that the magnitude of hurdles presented earlier is amplified for this category and that both internal and external challenges abound. Several informants described standard after-sales service support provided via an industrial supplier's customer service center as a typical example of "Dead Ends." As one executive explained:

"Well, if you ask our service employees, they would like to charge for anything and everything – even for picking up a phone in our customer service center. But we must be realistic here. Sometimes, the customers call even just to get the contact details of a specific engineer or to ask whether we have a specific spare part in our inventory. How do you put a price tag on that? I am afraid, but a move like that will be simply considered stupid by both our internal people and the customers."– Director (Sales & Portfolio Business), Transportation Firm

Thus, external impediments to such a service were perceived as high. Customers felt strongly entitled to free call center support, and there was very little endorsement inside the supplier organizations for a free-to-fee transformation. Internal structures and processes were not aligned with attempts to establish the real cost of service provision or enable price determinations for various customer supports.

After-sales customer support was not the only service identified as a "Dead End" in our study. Consider the following:

"Take the issue of 'petroleum additive certification' for the B2B customers as an example. Every supplier does it, so much so that customers take it for granted. If we want to get paid to do it, well, nobody's going to pay. Also, from the salespeople to the top management, anybody will hardly support such an idea!"– Executive Vice President (Petroleum Retailing), Petrochemicals Firm

In short, a range of external and internal hurdles identified in tandem led us to characterize this last type of free service as a "Dead End."

2.4.3 Overcoming Free-to-Fee Transformation Challenges of Industrial Services

Beyond developing insights into the different types of free services, we aimed at developing understandings on how industrial suppliers steered free-to-fee transformation processes in each context. In the following section, we present the actions and activities that experienced managers deemed vital for successful free-to-fee transformations (see Table 2.4). For every free service type, we focused on the four organizational dimensions: structures, processes, rewards, and people (Galbraith, 2008; Oliva & Kallenberg, 2003).

Table 2.4: Critical actions and activities in free-to-fee transformations of industrial services.

		Processes	People	Structures	Rewards
Free -Service Type	*Front-runners*	Organization-wide service mapping; improving control systems and procedures	Providing appropriate guidance for executing service exchanges	No significant change is required	No significant change is required
	Tugs of War	Identifying and documenting the benefits of the services for the customers; enhancing and strengthening the service offerings; developing a service catalog	Recruiting service specialists	A clear designation of customer ownership and related responsibilities	No significant change is required
	In-house Shackles	Improving and adjusting internal functional and operative tools, mechanisms, and systems	Deeper understanding and appreciation of service business; improving service sales-related knowledge and skills	Developing sales team configuration through integrating both core product sales and service personnel	Inclusion of service sales in job targets and key performance indicators; benefits in terms of specific service-related bonuses
	Dead Ends	Facilitating the decision to preserve, discontinue, or perform a transformation of specific free services; creating innovative value-capturing procedures	No significant change is required	Facilitating an organization-wide agreement and efforts	Adjustments based on the value-capturing processes and structural changes

Front-runners

Our empirical investigation clearly shows that for free-to-fee transformations of "Front-runners," a supplier's priorities are to focus on process- and people-related

dimensions. One senior executive experienced in multiple successful free-to-fee transformations had the following to say:

"For this type of services (Front-runners), you don't need to make big changes in the sales teams or service teams or go buy another service company. Take our automation consulting service (a Front-runner), for example. The most critical things were that managers found out what services our people were giving away, documented them properly, and then clearly guided and supported them to invoice going forward."– Head of Customer Service, Food Processing Machine Firm

Multiple respondents acknowledged that identifying and documenting existing free services represented the first crucial process-related initiative. Firms often lacked an overview of the depth and breadth of services provided free of charge, especially as those services grew over the years across geographic locations and product portfolios. To address this issue, several suppliers relied on detailed service mapping, identifying and documenting all free services provided to customers at every level. This step was considered crucial not only for "Front-runners" but also for the overall free-to-fee transformation initiatives.

The diagnostic firm in our sample, which had trouble with training and education programs for oncology therapists (an "In-house Shackle") yet succeeded in transforming the service of discharging and refilling formaldehydes (a "Front-runner"), offered further insights:

"Customers (hospitals and diagnostic centers) are supposed to discharge the used formaldehydes from our genetic screening machines and refill them. During discharge and refill, our technicians are present there just to ensure safety and quality. However, they were discharging & refilling formaldehydes at many customer sites without informing their managers. As far as they were concerned, they were 'just lending a hand' and did not even think that we could charge for it! We only got to know about it when we undertook a thorough screening of our services. We then decided to charge for it and gave the technicians clear instructions. Since then, some customers have agreed to formally buy the service and are paying for it."– Global Business Manager, Diagnostic Firm

Another informant shared a similar experience with respect to the role of mapping services that are provided free of charge:

"It can be a field engineer offering minor process improvements or a top sales guy throwing away a service that's worth tens of thousands of euros. Unless you do a very

thorough checkup across the organization, you never know."– Naval Architect (General Cargo Ships), Shipbuilding Firm

After identifying and documenting a list of free services, suppliers generally focused on "Front-runners" and developed a clear roadmap for financially capitalizing on these opportunities. The same shipbuilding firm offered further insights:

"Once we figured out all the services we give for free, we identified those that were not so difficult to charge for, like this 'cargo efficiency improvement' thing that we have for older ships. We then clearly communicated to everyone inside the company, especially the salespeople, 'Nomore giving this one for free.' Rather, we set prices for those services and told our people that going forward, these are the prices you charge for them."– Sales Manager, Shipbuilding Firm

Developing and implementing control systems and procedures also played pivotal roles in transforming "Front-runners." Consider the example of the cancer cure firm in our sample, another company with a limited degree of free-to-fee transformation success. Managers had been struggling with "site planning and installation" (a "Tug of War") services but successfully transformed the firm's "process improvement services" (a "Front-runner"). In doing so, implementing a software and spare parts inventory tracking system to ensure accountability and control was deemed crucial:

"Our engineers and technicians would often go for regular checkups of customers' processes – the way they operate and maintain the radiation therapy machines. Then, as necessary, they would replace or upgrade the software or components of those machines; which are very valuable for the customer to maintain or even improve their processes; without charging anything. This showed that we lacked a control system on our side. To begin with, they (engineers and technicians) should not have been able to order those parts or software without any accountability, right? So, we have put systems in place where any component or software license must be ordered through specific channels and the details are recorded. So, every part has a price, and they (service engineers) know they must charge the customers for it."– Head of Services, Cancer Cure Firm

Closely related to these process improvements is the people-related dimension of providing appropriate guidance for implementing service exchanges. Respondents mentioned that product-oriented personnel (i.e., sales managers, engineers, or technicians) often found it challenging to perform service exchanges. One key informant, for instance, pointed to the free

"improvement of warehouse operational processes" services in relation to collision avoidance inside large warehouses:

"Our on-site service engineers did not realize that we could charge 190 euros each time for 'tightening a few bolts' (laughs), and they do it thousands of times per month. They understood the value of our 'warehouse operations improvement' services only after we helped them to understand the benefits from the customers' point of view. Moreover, we had to train them how to invoice, provide transaction details, record it in the system, etc."– After-Sales Manager (Germany, Benelux, Austria, and Switzerland), Industrial Vehicles Firm

However, once employees received adequate guidance regarding "Front-runners," they followed through. No specific changes were needed in terms of organizational structure, nor were distinct free-to-fee-related rewards considered crucial.

Tugs of War

For free-to-fee transformations involving "Tugs of War," challenges mainly arose outside the firm. Firms in our sample focused on process, people, and structure to address these hurdles.

Services in this category were generally provided on an ad-hoc basis. Our data show that the critical process-related improvements for their free-to-fee transformations entailed identifying and documenting the benefits of the services for customers, followed by systematically enhancing service offerings to optimize their customer value. The following statement regarding providing free power and efficiency benchmark services offers an illustration:

"For these services, you are usually in the dark. Initially, you often don't know their usefulness for the customer! So, our main (process-related) focus was on two issues. First, to figure out what customers actually did with those services – how they use them. And second, as these services were not part of our regular offerings and were delivered only when customers asked for them, they did not have any particular shape or form and were a bit messy. So, we had to improve and repackage those services further and turn them into concrete offerings with a price"– Chairman of the Board (Former CEO), Food Processing Machine Firm

Thus, after identifying customer value, the firms in our study did not try to sell these "Tugs of War" *per se* but instead enhanced those service offerings before approaching the customers. To continue with the example of the food processing machine firm, after installation and commissioning production equipment at factory floors, customers often asked for measurement and provision of power and efficiency benchmarks – services typically provided for free in the industry. However, while conducting its free-to-fee transformation, the supplier in our sample improved the service by offering benchmarking comparisons with peers and best-in-class, and then performing further equipment calibrations as necessary, both of which were crucial in improving customers' productivity and reducing production costs. The example below offered by one of our key informants illustrates the importance of this particular measure:

"Well, think of providing free initial production benchmarks. Everybody does the same, so how do you charge for that? Once we improved the service, we could clearly show customers the benefit they would get. This is not the same free service that companies give away; this is a much better one. Without doing so, I don't think we'd be successful (in our free-to-fee transformation)."– Head of Pricing and Market Development, Food Processing Machine Firm

Managers emphasized equipping frontline employees with a well-crafted service offering catalog that contained detailed information on the services and their respective prices, which they considered another crucial process-related improvement in turning around free services, especially those in the "Tugs of War" category. Such a catalog clearly communicated to customers that suppliers were strongly committed to service provision rather than making random attempts to clinch revenues. Moreover, the sales and service personnel now had a clear roadmap in hand when engaging in discussions with customers. Consider the following statement made by one of our respondents:

"Yes, we have all the details in a book: the services, their description, their benefits, and so forth. And, clear prices against every service! It's a great tool when you are trying to convince the customer to pay. You can always refer to the book and tell them, 'Look, I am sorry, I cannot give this to you for free. It's something that we sell for money, and if you want it, you have to pay for it.'"– Head of Pricing and Market Development, Food Processing Machine Firm

Another key informant from the same firm added:

"Put the details in pen and paper and even on your website. It's a very clear sign—you are not throwing away free services here and there just because the customer wants to. Make it official: 'Hey, these are the services. They are better than we previously gave for free, and they come with a price.' Show your booklet to the customer; refer them to your website if you need."– Head of Customer Service, Food Processing Machine Firm

With respect to the people dimension, in close relation to the above initiatives, firms emphasized the importance of hiring service experts. Interviewees explained that even though their product salespeople were willing to engage in selling "Tugs of War," they often lacked the specialized skills and capabilities needed to do so. New service experts were necessary for other aspects as well, such as identifying the customer value created by these services and setting their price:

"Yes, our people who sell cargo systems for large ships were ready to take a shot at selling those services. The problem was that they are used to play around lifting capacity, technical quality, weight reduction... But, when it comes to convincing customers to pay for the services that they are very much unwilling to do, we needed new people who could do so."– Chief Naval Architect, Shipbuilding Firm

The importance of enhancing a firm's service-related capabilities by hiring service experts was also reflected in a much less successful firm, as one key informant admitted:

"It takes so much time and effort to deliver those services, but we simply cannot figure out what the customers do with all these technical calculations that they randomly ask for. We are simply not good enough in this kind of service game. Seems like our only option is to hire people who know these games. Also, how do you set price for these services? As a product-based company, we simply don't know. We need service people for that, too."– Vice President (Business Development), Security Firm

Furthermore, interviewees highlighted that the people dimension was closely intertwined with the structure dimension, as the inclusion of new service experts often led to overlaps and conflicts in terms of job responsibilities, scope, targets, and customer ownership. Reflecting Mathieu's (2001) argument that industrial suppliers require infrastructural changes to grow a service business, multiple interviewees indicated that reviewing organizational structures, including the clear designation of customer ownership and related responsibilities, helped them address these problems. Consider the experience of the food processing machine firm, which reported multiple free-to-fee success stories:

"While the inclusion of service experts is crucial, be careful that it does not become an internal fight, like a land grab—who's got the customer? For us, we had to clearly define who is working on what. Everybody should know what they are assigned to and what's in it for the company as a whole."– Head of Customer Service, Food Processing Machine Firm

In sum, to master free-to-fee transformations involving "Tugs of War," firms needed to gain insights into the customer benefits of the services they provided and change established processes, especially improving the service offering, developing a service catalog, and communicating value to customers. In doing so, they needed to bring in new people with service expertise, further necessitating the recalibration of structures to avoid internal conflicts.

In-house Shackles

To overcome process-related challenges associated with free-to-fee transformations of "In-house Shackles", firms in our sample focused on improving functional and operative tools, mechanisms, and systems to identify, quantify, document, communicate, and capture the value created by the free service in question. Consider the following examples:

"How do I log a parts number against a service? How do I record a pay-for-performance service transaction? Sometimes, my system would not even allow me to do it. You know, if you are a product-oriented company, your systems can be terrible at handling service business and you would rather give it away for free! The only option we had was to modify and optimize your systems."– Services Manager, Construction Firm

"Previously, when we discussed value – for example, for power plants – we were used to talking about OPEX (operating expenditure) and CAPEX (capital expenditure). Even our accounting processes and inventory systems were designed that way. Now, how do you calculate CAPEX for analytics and monitoring services? It's a different ball game, and we had to develop and modify our systems, our processes, to calculate and communicate their values."– President (Energy Solutions), Engine Firm

Concerning the people dimension, improving service sales-related skills along with a broader knowledge of the service offerings was considered crucial, as key informants of successful organizations explained:

"For these services, it's your own people who often create the problem, as they are simply afraid of what they are getting into. For our rotating equipment performance management services, what we did was to enhance their knowledge and abilities. We talked with them face to face, understood their issues, and then arranged the training and education that they needed to make them comfortable with services."– Global Manager (Value), Industrial Machinery Firm

"Often, even when it would be easy to charge the customer (for the repair and maintenance, and the analytics and monitoring services), our people didn't want to get into it simply because they didn't know how it works! So, they tried to avoid it at all costs. We helped our people to increase their service-related skills. We arranged regular workshops, we helped them to see the big picture. If someone needed further training, we arranged that, too."– President (Services), Engine Firm

In relation to the above, successful firms repeatedly emphasized the importance of adopting incentives and reward systems to help overcome internal barriers and motivate employees to focus on the hidden revenue opportunities of free services. Managers relied on multiple initiatives, such as including service sales in yearly sales target reviews, changing key performance indicators (KPIs), and introducing a specific bonus for service-sales performance. Consider the following statement:

"We made selling services official! So, not just some training and education for our people that are just nice to have. Rather, we included services in the yearly sales targets. We also modified KPIs. All of these helped to direct our people more towards services and also showed that these (free-to-fee initiatives) were not just empty talks. Rather, we were serious about services."– Global Manager (Value), Industrial Machinery Firm

"You can't just push people to go and sell services. Sometimes, they have to have something in it for themselves. It is common practice to give bonuses for product sales. What we did was to introduce the very same idea into service sales so that they have some personal motivation to get these services moving. After all, it's not that difficult to convince customers to pay for these services. What they need here is a drive from our own people, and some bonuses can do the trick"– President (Energy Solutions), Engine Firm

With respect to organizational structures, adjusting sales team configurations emerged as another essential initiative. Several companies in our sample integrated existing sales and service personnel. These teams leveraged complementary knowledge and expertise. Service

engineers and field technicians drew on regular customer interactions and an in-depth understanding of customer needs and usage situations for a better understanding of how existing services created value for customers. Sharing knowledge and leveraging insights among different members of the sales team for identifying value creation and pricing opportunities emerged as key success factors, as one key respondent explained:

"We really needed to build a team. Our service engineers and technicians have great insights into how customers use our services – both in monitoring and lubrication management and rotating equipment performance management services. However, they have trouble thinking and talking about pricing. They are totally cost-based. If the drawing is already there, and all they have to do is to do some technical measurements and change some spare parts, they'll ask, 'Why are we charging more than the cost of the parts? How?' That's where salespeople come in."– Global Manager (Value), Industrial Machinery Firm

In sum, successful free-to-fee transformations of "In-house Shackles" depended predominantly on enhancing suppliers' service-related knowledge and capabilities, paired with modification and alignment of internal functions and systems. Aligning the reward systems and team structures played further critical roles.

Dead Ends

Free-to-fee transformations of "Dead Ends" represented the most problematic of all four types of free services in our study. Managers faced daunting challenges both from inside and outside of their organizations. Our data show that an essential first step for firms was to decide whether to engage in a free-to-fee transformation of "Dead Ends" at all or forgo such an initiative as a waste of time and resources. As a key informant mentioned:

"We will simply make the customers irate if we ask for money for these services. You can see that these services are useful, but probably at some sort of aggregate level. It's not possible to determine the benefits for individual customers or charge for them. Also, nobody in the company thinks that's a good idea. Like, it's nice to have a reception desk at your office, and somebody greets customers there, but can you actually charge for it?"– Global Manager (Value), Industrial Machinery Firm

Our interviews revealed a range of interesting initiatives through which managers attempted to address "Dead Ends" – predominantly through changes in the structure and

process dimensions, but also, to some extent, in people and rewards. Some of the firms were able to reduce the costs of providing the services through structural changes – for example by transferring the provision to channel partners that were well placed to deliver such services at a lower cost. A second measure was applied through service design processes, in some way similar to addressing "Tugs of War". For instance, one respondent explained that her company recast a "Dead End" technical support service into multiple tiers, which ranged from providing simple technical advice on calibrating laser levels to fixing complex abrupt downtime issues of automated capital equipment via remote access to customers' servers. The supplier defined three service-level packages and offered customers the option to purchase based on their service-level requirements. Basic technical support was considered standard industry practice, and the supplier maintained this first level of service free of charge. However, beyond this primary technical support, the firm began to charge for advanced levels of support and effectively escaped a "Dead End" provision.

Beyond transferring activities to third parties or introducing multi-tier service packages, other initiatives also emerged. To regulate the consumption of costly "Dead End" services, another supplier introduced a unique "value card" system, which customers could use to receive technical support over the internet. Customers purchased the cards loaded with different amounts of "points". Each time a customer logged in into the suppliers' systems to get the services, points were deducted from the value card.

In the people dimension, the free-to-fee transformation of "Dead Ends" required organization-wide agreement at all hierarchical levels, thus protecting employees from the discomfort of going against established free service provision practices. Our insights resonated well with existing research, suggesting that service growth strategies of product-centric B2B companies require a fundamental shift on organizational culture (Kohtamaki et al., 2015; Kowalkowski & Ulaga, 2017; Mathieu, 2001). Our interviews revealed that resistance to free-to-fee initiatives emerged not only among frontline employees and middle management but also at the senior management level. As one informant explained:

"At the beginning, even our board members were reluctant to charge for these free services (real-time data-based insights), saying, 'Wait a minute – we are a product company. Are we moving to service business or what?' It took quite some time and effort to make them realize we are not changing our business altogether, and we were already providing those

services for free and losing money! It took some effort to get the 'go ahead' from them."– President (Services), Engine Firm

In sum, "Dead Ends" present the greatest challenges to successful free-to-fee transformation. Managers must determine first whether they need to continue providing the services for free or stop them altogether to eliminate the associated costs. If the decision is to continue, fundamental changes are often required at all organizational levels, including structures and processes as well as people and rewards.

2.5 Conclusion

2.5.1 General Discussion

Our study, grounded in the experiences of a cross-section of global industry leaders, allowed us to clarify the nature of truly free industrial services and develop a sound definition thereof. We further developed a typology that captures the free-to-fee transformation potential of such services according to the challenges that are internal and external to the firm. Finally, based on concrete initiatives, implemented by firms that are at different stages of their respective learning curves, we identified actionable directions for how firms can best align organizational structures, processes, people, and reward dimensions to successfully steer such free-to-fee transformations.

Thus, we build on and extend prior research by closing three important gaps. First, we remove conceptual ambiguity around the nature of "truly" free services. Next, existing research has investigated free services in an undifferentiated manner. Yet, our findings show that one must account for heterogeneity among free services based on different combinations of the challenges being faced. Finally, prior research has been silent on how to practically transform free services into for-fee services. Our study specifically sheds light on concrete actions in each of the four types of free services identified.

Overall, our research shows that free-to-fee transformation of industrial services is not just an isolated sales or pricing activity. Rather, such a strategic initiative requires a collective and integrated effort among different organizational functions and hierarchical levels. It involves careful alignment of the core organizational dimensions to address and overcome the

challenges at hand. The most common internal challenges – resistance from the product-sales force – is reflective of the general industrial services literature (Terho et al., 2012; Töytäri et al., 2011). Particularly, for services in the "In-house Shackles" category, sales need to evolve from being an isolated function to a cross-functional approach where traditional product-sales personnel should engage in service sales (Storbacka et al., 2011). Indeed, across all types of free services, we observed a transformation of the sales function from an operationally-focused to a strategically-focused practice (Storbacka et al., 2011; Terho et al., 2012; Töytäri et al., 2011).

We also found that many psychological barriers to pricing formerly free services exist in industrial companies akin to those discussed in consumer settings (Bond et al., 2019; Brady et al., 2012; Lambrecht & Misra, 2017). Thus, significant internal changes are needed in terms of organizational culture and mindset for any successful free-to-fee transformation. Moreover, we find support for the argument put forward by Dutta et al. (2003) and Indounas (2009) suggesting that product-oriented industrial suppliers often lack service pricing capabilities – a problem that they overcome by hiring service experts.

In our research, we identified specific actions and activities for each type of free services that are critical to their successful free-to-fee transformations. Some of these actions and activities, for instance, taking stock of the depth and breadth of free services provided before embarking on a full-fledged transformation initiative, may prove beneficial for the overall free-to-fee initiative of an industrial supplier. Such an initial assessment provides the organization with a useful snapshot of all existing free services. Similarly, our study shows that the people dimension – i.e., enhancing their service-related understanding, expertise, and capabilities – plays a crucial role in the free-to-fee conversion of almost all types of existing free services. What changes is the degree of intensity as well as the focus on specific skills. For "Front-runners", suppliers focused on enhancing their frontline personnel's service exchange-related skills through regular guidance and support, whereas for "In-house Shackles", training and education to increase service-related knowledge and capabilities were more prevalent. In cases involving "Tugs of War", industrial suppliers went a step further and hired new service experts to strengthen their service-related capabilities.

Not all of our findings are confirmatory to previous literature. When it came to external challenges, for example, we found stark empirical contrast to the dual entitlement principle. According to the theory, industrial suppliers who clearly communicate their costs of service

provision with the customers should receive a fair price (Kahneman et al., 1986; Urbany et al., 1989). Our findings showed otherwise. Conceptually, this may stem from two interrelated issues. The first is the "reference price" (Bruno et al., 2012), which is derived from customers' previous price references gained either by prior purchasing experience (internal reference price) or by observation and information from their peers (external reference price). For existing free services, both the internal and external reference prices are zero, as customers are used to getting the services in question for free. Neither do other customer organizations pay for these services. Consequently, the introduction of a price reflects a departure from the customer's frame of reference and fails to resonate with them.

Second, the dual entitlement principle is heavily dependent on the "community norm of fairness" (Kahneman et al., 1986; Urbany et al., 1989). However, unlike consumer markets where individuals often form strong communities and share common norms (Chou, Lin & Huang, 2016), business customers of industrial suppliers often compete head to head (Storbacka et al., 2011; Terho et al., 2012; Töytäri et al., 2011). Thus, they might be less inclined to share norms of price fairness with others, resulting in dysfunctionality of the dual entitlement principle.

2.5.2 Theoretical Contributions

In this study, adopting a TIU approach (Zeithaml et al., 2020), we focused on integrating empirics with existing literature for further conceptual development rather than theory testing. Taking the literature on industrial service growth as the starting point, we precisely delineated the scope and boundaries of free services in industrial markets and developed a definition that removed ambiguity and provided much-needed clarity to serve as a basis for future research in this nascent but critical area of service research.

Typologies are extensively used across management disciplines to provide granular insights into complex phenomena, guide organizational actions, and contribute to theory building (Doty & Glick, 1994; Eggert et al., 2014; Mathieu, 2001; Ulaga & Reinartz, 2011). In a similar vein, our typology opened the black box of free services and documented their heterogeneous nature; these activities differ in terms of their free-to-fee potential, challenges, and ways to overcome them. Without this typology, analyzing free-to-fee transformations would be too simplistic and overly general. Further, we have advanced knowledge in this field

by unpacking each quadrant of the matrix to investigate specific combinations of challenges and effective managerial actions.

Our contributions go beyond the creation of a typology, adding substance in response to the call by Lehmann (2004, pp. 73-74): "If marketing wants 'a seat at the table' in important business decisions, it must link to financial performance." Complementing prior studies that advocated in favor of service growth in industrial firms (Eggert et al., 2014; Oliva & Kallenberg, 2003; Ulaga & Reinartz, 2011), we show how both internal and external challenges need to be considered simultaneously when embarking on a free-to-fee transformation in order to increase revenue and profitability. Witell and Löfgren (2013) focused on eight strategies for creating incremental to radical business model innovation for free-to-fee transformation, without reference to the interplay of internal and external challenges. Indeed, the dominant focus of prior studies has been identifying, describing, and analyzing change in business models (e.g., Witell & Löfgren, 2013), or black-and-white decision-making regarding whether to charge for services (without showing how) or discontinue them altogether (e.g., Anderson & Narus, 1995). Grounded in managerial experience, this study is the first to document the combinations of critical challenges faced by each type of free service in free-to-fee transformation and how they can be overcome through concrete initiatives (see Table 2.4).

Further, our detailed analyses created a more nuanced understanding of the phenomenon. For instance, close buyer-seller relationships are known to generate positive outcomes in B2B settings (Ryals & Holt, 2007; Ulaga & Eggert, 2006). Yet, our study has revealed some of the dark sides of close relationships between frontline service employees and their counterparts in customer organizations that can create barriers to free-to-fee transformation (similar to "Service Sweethearting" in a B2C context; see Brady et al., 2012). As another example, our results also showed how companies need to adapt structures and processes, such as accounting or inventory management systems, to enable service transactions, an aspect hitherto overlooked in prior literature. Collectively, our study findings have strengthened the conceptual foundations of this promising research area.

2.5.3 Managerial Implications

Clearly, free-to-fee transformations entail complex processes that require holistic comprehension of existing free services, their respective challenges, and overall revenue and profit potential. A more nuanced understanding of innate differences between the four different types of free services can help industrial suppliers develop a structured and effective way of managing such initiatives. In addition, insights gained from our study can help managers and frontline employees to: (i) identify free services and select those with the highest free-to-fee transformation potential, (ii) understand a given free service's specific barriers to a successful transformation, and (iii) learn how to make appropriate changes in the four organizational dimensions (i.e., structures, processes, people, and rewards) to unleash lasting revenue and profit potentials.

Our study highlights the significance of coordinating the different functions and units engaged in a free-to-fee transformation. For example, sales personnel and field service technicians need to effectively coordinate customer interactions. Similarly, accounting, finance, and legal functions need to align themselves with free-to-fee transformation strategies. In short, all functions need to be in synchronicity if a supplier is to successfully implement a free-to-fee transformation project. Suppliers are well-advised to consider the initiatives shared and discussed in our study, such as sales team coordination, alignment of incentive and reward systems, employee training and education, and adaptation of inventory and ERP systems, to enhance functional and unit coordination.

We would also reiterate the importance of calibrating each organizational dimension while keeping in mind its effects on related dimensions. For instance, if the service mapping process is executed poorly or without input from the functions or units that will be involved in deploying or executing the free-to-fee transformation, the outcome is likely to be less effective. Similarly, while training a supplier's salesforce to engage with customers about free-to-fee transformation, the company should address, in parallel, the changes needed with respect to incentives and rewards.

Further, as Tuli et al. (2007) have also pointed out, managers need to be aware of the difficulties involved in implementing such activities. For instance, a contingent hierarchy to address free-to-fee transformation challenges may reflect a break from conventional ways of

structuring organizations. Thus, its implementation may entail substantial organizational changes that meet opposition from managers with vested interests in existing organizational structures. In such situations, one approach could involve piloting contingent hierarchy among a few units or particular geographic areas, creating and communicating success stories, and tracking phased adoption in other units or areas.

2.5.4 Limitations and Research Agenda

As is the case for any qualitative research project, our study choices created some limitations and opened fruitful avenues for future research. For example, we investigated only supplier firms, missing out on the perspective of customer organizations. Going forward, we recommend that researchers consider both customers' and dyadic perspectives to deepen our understanding of this domain. Likewise, because our sample included exclusively global industry leaders, investigating small and medium-sized companies might provide interesting insights pertinent to those contexts.

Beyond recognizing our study's limitations, we ambitioned to chart a path for future research, laid out in Table 2.5. One may envision appealing research opportunities with respect to further exploring internal and external barriers to free-to-fee transformations, pricing decisions surrounding free services, and contextual and methodological extensions. In each of these areas, we formulated a set of promising research questions.

Table 2.5: Future research agenda for free-to-fee transformations of industrial services.

Research Focus	Specific Research Questions
Internal challenges	• How might industrial suppliers change their organizational culture and mindset to engender an F2F transformation? • How can traditional industrial firms enhance the service-selling capabilities of product-oriented sales personnel? • How do product-oriented firms modify or calibrate their operational tools and mechanisms to enable service business? • How might industrial suppliers repackage/enhance/modify existing free services for F2F transformations? • How are internal challenges linked to each other, if at all?
External challenges	• How can suppliers identify, document, and quantify the customer benefits created through their existing free services? • In terms of customer-supplier relationships, how do existing versus new customers react to F2F transformation initiatives? How do the approaches differ based on the customer segment, if at all? • If providing free services is an industry-wide practice, how can one disrupt it? • How might one understand and measure the non-monetary remunerations of free service provision? • How can one overcome F2F transformations challenges if they are posed by third parties (e.g., distributors)? • How are external challenges linked to each other, if at all?
Pricing	• Which are the best-suited pricing strategies for F2F transformation? • How and why is dual entitlement theory not reflected in free services? • How are reference prices set and how can they be changed in free services? • How might product-oriented firms grow service-pricing capabilities?
Contextual and Methodological expansions	• How do free services originate? How might industrial firms prevent the proliferation of free services while simultaneously pursuing service growth strategies? • What are the key constructs and measurements necessary for further investigation of F2F transformation? • What are the key challenges of F2F transformation from customers' and dyadic perspectives? How might one address them? • Do B2B SMEs face different challenges in their F2F transformation? If so, how might one overcome them?

Although the above-mentioned limitations must be kept in mind when considering our results and implications, we hope our findings provide new insights to academics and practitioners alike and encourage both scholars and managers to further explore, understand, and manage future free-to-fee transformation journeys.

3 Project II: Moving Services from Free-to-Fee: How to Overcome Customers' Unfairness Perceptions

3.1 Introduction

Traditional manufacturing firms often start offering ancillary services in order to differentiate themselves from the competition and counter challenges like demanding customer requirements and the related price pressures, and shrinking margins (e.g., Reinartz & Ulaga, 2008; Ulaga & Reinartz, 2011). Especially through new technologies, core products are increasingly accompanied by innovative product-related service offers such as remote repairs, predictive maintenance, or smart scheduling. What starts out as a "side business" or "nice-to-have" add-on often becomes a central and value-adding element of the firm's offering (e.g., Reinartz & Ulaga, 2008).

Nonetheless, many firms remain hesitant to charge for the services they provide because of fear, inertia, or lack of strategic thinking (Ulaga & Michel, 2018). Thereby, they are missing out on unlocking potential revenue in a relatively short time frame. Consider the case of a forklift manufacturer discussed by Ulaga and Michel (2018). They report that the company offered 80 services for free. Over the period of six months, the company moved 14 of these from free-to-fee by charging only small individual fees, resulting in more than two million euros in revenues in the respective test country in one year.

Despite anecdotal evidence such as the above, existing academic research in the areas of B2B and service marketing almost exclusively focuses on *why* moving into services in general is beneficial for traditionally goods-centric firms (e.g. Oliva & Kallenberg, 2003; Wise & Baumgartner, 1999), particularly by exploring the financial impact of such servitization strategies (e.g. Fang et al., 2008). What is largely missing, however, are concrete recommendations and managerial guidance for *how* to move into services successfully, e.g. which pricings schemes are beneficial. Only a few recent studies address the practical

challenges associated with this process and the critical resources and capabilities needed to manage the transition journey, including the move of services from free-to-fee, successfully (e.g., Steiner et al., 2016; Ulaga & Loveland, 2014; Ulaga & Reinartz, 2011).

In order to capture additional profits from their service offering, firms need to break down potential inhibitions towards the customer and stop being reluctant to bill these services at prices that exceed their own costs. This shift *from free-to-fee* is necessary to "extract a provider's *fair* share of value created with and for customers" (Steiner et al., 2016). The reason for this hesitant behavior is founded in the fact that providers are fearing pushback from customers. This concern may be justified: Especially within a premium provider context, customers might expect add-ons as part of the underlying premium base product. As customers then get used to so-called freebies, charging for services becomes more difficult and customers might react with negative feelings when they are suddenly asked to pay for services that they used to get for free (Ulaga & Michel, 2018; Witell & Löfgren, 2013). B2C research shows that fairness perceptions take a central role in such transitions (e.g., Cziehso et al., 2019) and in cases where it comes to understanding customers' reactions to price introductions and price changes (e.g. Bolton, Warlop & Alba, 2003; Xia, Monroe & Cox, 2004). Prior research shows that perceived unfairness strongly acts as "relationship poison" by, amongst others, directly damaging relationships (Samaha et al., 2011). Thus, given the relational perspective in marketing, fairness is an important construct even to look at in the B2B sphere.

Existing research about the free-to-fee transformation process can rarely be found in general. Only a handful of studies address the topic directly (e.g., Anderson & Narus, 1995; Witell & Löfgren, 2013; Ulaga & Michel, 2018), however, never unpack the process or shed light on what triggers the transition process and what are the critical milestones. What is even more missing is the customer perception in this process. The customer viewpoint, the related challenges that customers perceive in this context, and specifically the question of how to overcome these hurdles without jeopardizing an existing relationship, have been widely neglected. Therefore, it is important to put emphasis on exploring the customers' perceptions when switching services from free-to-fee and on investigating the conditions under which this necessary step becomes acceptable for customers.

Taking these research gaps as a starting point, this article theoretically argues and empirically tests customers' fairness perceptions when moving services from free-to-fee. By assessing fairness perceptions based on the principles of distributive justice (Homans, 1961) and equity theory (Adams, 1965), we explore the customers' perspective and point out the importance of having a closer look at the price fairness construct as it has considerable effects on key determinants of a successful buyer-seller relationship within B2B markets. Moreover, we also strive to gain a better understanding of *how* firms can overcome potential negative customer evaluations and provide concrete managerial implications on how to handle this move and how to overcome potential pitfalls and implementation barriers. Having in mind that fairness according to equity theory (Adams, 1963) is defined as the balance between inputs and outcomes in the relationship between the customer and the firm, this paper concentrates on four explicit levers, which we assume can counterbalance and restore a disturbed balance caused by moving services from free-to-fee. A qualitative pilot study also confirms that these levers are actually used frequently by industrial firms to mitigate negative customer perceptions. First, as in management practice the question how to bill ancillary services is of major relevance (e.g., Oliva & Kallenberg, 2003; Steiner et al., 2016), we examine whether customers prefer separate services at a pay-per-use pricing scheme or a service package at a flat-rate when being charged for services unexpectedly. Second, we investigate if enhancing the service level can counterbalance customers' unfairness perceptions. Third, we explore if providing the customer with additional information about the actual monetary value of the free service offering can attenuate negative customer responses when moving from free-to-fee. Fourth, we analyze if increasing the core product's price is generally superior to separately starting to price the service offering. In conclusion, as the emerging body of literature regarding manufacturer's service transformation processes is primarily of a theoretical and conceptual nature, the present study contributes to the service and B2B marketing domain by conducting large-scale, quantitative empirical research and validation.

3.2 Qualitative Pilot Study

To dive deeper into the topic of moving services from free-to-fee, the impact of this transition on customers' fairness perceptions and the question of how to overcome this challenge, we conducted a series of problem-centered, semi-structured interviews (Helfferich, 2009; Witzel, 2000). These serve to gain first insights and ideas to guide the focus of the subsequent quantitative studies. Thus, this qualitative research functions as a pre-study for our two main studies. Thereby, interview guidelines serve as a supportive instrument and are supplemented by ad hoc questions, which follow a specified conversation strategy that is premised on previous knowledge about the topic (Witzel, 2000). Nine problem-centered, semi-structured interviews (Witzel, 2000) were conducted in Switzerland between May 2014 and October 2014 with company-internal experts (N=6) and customers (N=3) of a large European tool manufacturer.

Company-internal expert interviews. The industry partner supported us to establish contact with six of their employees, consciously selected on the basis of various types of professional experience, including key account sales manager, area sales manager, and the head of channel management. The duration of these interviews varied between 35 and 63 minutes. The interview format was mainly face-to-face except for one interview which was held via telephone. More information on the sample is displayed in Appendix A Table A.1.

Customer interviews. The industry partner also offered us the opportunity to accompany one of their sales representatives for one day to meet three customers from the sanitary sector for an interview. Accordingly, the interview format was face-to-face and the duration of these customer interviews varied between 23 and 34 minutes. More information on the sample is displayed in Appendix A Table A.2. All interviews were recorded on audio tape and then transcribed in written German. Anonymity was guaranteed for all interview partners.

Summary of findings - interviews with company-internal experts. Our interviews with company-internal experts serve as a basis for understanding manufacturers' ambitions to start pricing the services they are offering for free and the common practices and levers they use to facilitate this move from free-to-fee. Most of our interviewed experts emphasize that this move creates immense hurdles especially on the customer side. They report that customers

react with strong restraint when they suddenly have to pay for something they used to get for free:

"And then we've also had situations where the customer has said exactly that: "Hey, what's this? Now you're suddenly asking for money?" (Company-internal expert, No. 4)

As a result, experts point out that they do not want to jeopardize their long-term buyer-seller relationships in any way as they generally place great emphasis on a relationship based on partnership and mutual reliability. Therefore it is more than just essential to understand the customers' perspective and their perceptions in this context:

"That is once again the sales department, that tries to think for the customer instead of asking them."(Company-internal expert, No. 2)

In order to make this move from free-to-fee successful, the interviewed company-internal experts report the following levers:

First, our respondents state that choosing the right pricing scheme when moving services from free-to-fee is inevitable. All of them report that their company tried to move its services from free-to-fee by introducing an all-inclusive service package at a flat-rate to avoid difficult pricing decisions for individual services:

"The service is charged via a monthly usage fee, in a package that is tailored to the customer's needs." (Company-internal expert, No. 1)

However, soon the experts realized that they have to start slowly and build trust by offering the services individually at a pay-per-use pricing scheme:

"At some point you think: "Why aren't you selling anything?" – because he was basically convinced of the service, but isn't willing to pay a monthly rate for it. Whereas now, and we have now corrected this, since the beginning of the year we have been able to sell individual services as individual goods." (Company-internal expert, No. 2)

Second, according to our interviewees, it is essential to demonstrate that the quality and the service level is increased as soon as the service is priced. They are aware of the fact that as soon as the customer has to pay for the services, they should get something in return:

"Clearly defined services with a higher service level and quality, that is what should be charged for." (Company-internal expert, No. 2)

Third, our company-internal experts indicate that one important lever to facilitate the move from free-to-fee is to clearly communicate the actual value the customer is consuming but not paying even before the service is finally priced:

"The customer gives money and has to understand what he will get for it. It is not that we are taking money out of his pocket and then he gets nothing." (Company-internal expert, No. 3)

Fourth, as moving services from free-to-fee entails some major hurdles, respondents underline the importance of analyzing if enhancing the core product's price is generally superior to separately pricing the service offering.

"Either I have to sell the product even more expensive or I want at least money for the service."(Company-internal expert, No. 2)

Summary of findings - interviews with customers. The customer interviews also revealed several interesting aspects, which served as the basis for the further course of our study. The fact that their provider is considering moving add-on services from free-to-fee is generally met with high displeasure:

"That goes down badly. I definitely have to say that. (...) And man is like that, he wants everything for free." (Customer, No. 3)

The provider's approach of immediately introducing an all-inclusive package at a flat-rate is also not very well received:

"This is not an option for me, no." (Customer, No. 3)

The interviewed experts are very clearly in favor of starting slowly and purchasing the services individually at a pay-per-use tariff:

"And I don't want to buy packages, I want to buy individual quantities of items" (Customer, No. 2)

Moreover, the statements of the interviewees show that their mindset is still considerably product-centric and they basically prefer that the cost of services is included in the product price, especially in the context of a premium provider:

"You do not operate in the low-cost segment and I think the service is actually integrated." (Customer, No. 3)

In summary, the interviews showed that moving services from free-to-fee entails some major hurdles on both sides of the buyer-seller relationship. There is great uncertainty on the vendor side regarding how to handle this move from free-to-fee successfully. On the customer side it appears that although one assumes that organizational buying is purely rational, a surprisingly large number of sensitivities and strong perceptions arise on a personal level.

The interviews provide initial indications of measures and levers that can be used to facilitate the move from free-to-fee without jeopardizing long-term business relationships. Thereby, it is crucial that the customer perceives that he is being treated fairly.

Now that initial insights could have been gained in the context of a qualitative pilot study, the following section sheds light on the topic based on the findings of previous research.

3.3 Conceptual Background

Although decision-making in industrial markets is often thought of as completely rational, organizational buying can be prone to biases just as individual consumer behavior (Spiegler, 2011; Steiner et al., 2016). This implies that also industrial buyers, who are confronted with price changes, form judgments about fairness as well (c.f. Hunt & Nevin, 1981; Vaidyanathan & Aggarwal, 2003). Moving services from zero to a certain amount can be considered as a special form of price increase and perceptions of price fairness thus play a central role (e.g. Cziehso et al., 2019). Hence, to better understand how companies can successfully move their services from free-to-fee, we draw on theories of distributive justice in general and research on price fairness in particular.

Price fairness is a key concept in the pricing literature to capture customers' responses to price increases (Koschate-Fischer, Huber & Hoyer, 2016). It is defined as "a consumer's assessment and associated emotions of whether the difference (or lack of difference) between a seller's price and the price of a comparative other party is reasonable, acceptable, or justifiable" (Xia et al., 2004, p. 3). Early notions of fairness can be found in the writings of exchange theorists (e.g., Homans, 1961), which put forward the idea that people in an exchange relationship should be entitled to a reward that equals their investment. Today, the concept of fairness is widely applied and has many theoretical underpinnings, ranging from dual entitlement theory (Bolton et al., 2003), transaction utility theory, and prospect theory (Malc, Mumel & Pisnik, 2016). The main foundations, however, are the principles of distributive justice (Homans, 1961) and equity theory (Adams, 1965).

According to theories of distributive justice, customers make comparisons between the costs they incur and benefits they receive in an exchange relationship (Homans, 1961). Equity theory broadens this cost-benefit comparison to all parties in the relationship (Adams, 1965). The degree to which a transaction is considered fair and equitable, strongly depends on the perception that costs and benefits are commensurate for everyone involved. Both the theory of distributive justice and equity theory thus suggest that fairness assessments, including judgments of price fairness, are comparative. These comparisons can be explicit, e.g. when two product prices are compared, or implicit, e.g. when the observed price is compared with an expected reference price (Malc et al., 2016). The final result of these comparisons can be one of the following judgments: equality, advantaged inequality, or disadvantaged inequality (Xia et al., 2004). While equality rarely triggers a judgment of fairness at all, inequality – advantaged and especially disadvantaged – often does. In the case of disadvantaged inequality, the observed price is higher than the comparison standard. As judgments are subjective and people generally aim to maximize their own benefit, experiencing such a disadvantage tends to trigger perceptions of unfairness. That is, when people feel they fall short in comparison, they are more likely to perceive the relationship or transaction as unfair.

It generally follows that a judgment of price fairness results from the consumer's comparison of a focal price with the price of a comparative transaction, the so-called reference price. Much of the research has focused on backward-looking prices, such as the prices of prior transactions or at a previous time, serving as reference prices. However, as

Bolton et al. (2003) point out, competitor prices as well as vendor costs can also serve as a frame of reference in the here and now. Increasingly, researchers have come to treat reference prices even broader than that, acknowledging that they can also be future-focused (e.g., Bolton, Keh & Alba, 2010; Kuester, Feurer, Schuhmacher, & Reinartz, 2015). According to this idea, consumers can form future price expectations from prior usage (Rust, Inman, Jia & Zahorik, 1999), which can serve as a reference price as well. This broader understanding of reference prices is especially helpful when trying to understand consumers' fairness perceptions in times when prior frames of reference are absent.

A discrepancy between focal and reference price does not necessarily lead to price (un)fairness perceptions. Instead, the emergence of fairness perceptions is highly contextual and hinges on a variety of moderators. Among these are aspects of the focal transaction, such as the source of price information (Campbell, 2007), the transaction similarity, or the product newness (Kuester et al., 2015), as well as consumer aspects, such as individuals' past transactions (Bolton et al., 2003), their personal price acceptability (Malc et al., 2016) and general beliefs about a firm's pricing practices (Xia et al., 2004). Most generally, the inclination to make comparisons that might evoke fairness perceptions in customers depends on the salience of reference points, such as prior prices or expected prices (Festinger, 1957). Which point is chosen also depends on its availability (Major, 1994).

When moving services from free-to-fee, the reference point to which the new transaction (i.e. for-fee offering) is to be compared is the previously free service. Thus, any price above this transaction point of zero automatically leads to adverse fairness perceptions (Cziehso et al., 2019). Further, prior literature highlights that "zero is a special price" for customers, resulting in strong and sometimes biased perceptions as customers tend to disproportionately overvalue free goods (Shampanier et al., 2007). The drivers of this so-called *zero price effect* were recently investigated in more detail: Hüttel et al. (2018) uncovered that zero pricing not only leads to a deflation of the corresponding non-monetary costs (e.g. advertising intrusiveness), but also to a benefit-inflation effect, such that customers overemphasize the advantages provided by a free service. These findings already indicate that it will certainly be a challenge for customers in terms of their fairness perceptions if they suddenly have to pay for services that they used to get for free.

Perceptions of fairness can have important consequences for firms. Key indicators, such as customer satisfaction and loyalty, are – at least in part – shaped by perceptions of price fairness (Bolton et al., 2003). However, consequences are much broader and versatile than that. First evidence suggests that price fairness can also affect consumers' trust in a firm (Xia et al., 2004), perceptions of product value (Martins & Monroe, 1994), as well as (negative) word-of-mouth behavior (Xia et al., 2004). The severity of consumers' reactions strongly depends on the felt intensity of the price fairness perceptions (Malc et al., 2016). The more unfairly consumers perceive a price, the more vengeful their reactions and behavior tend to be (Xia et al., 2004). Thus, consequences can range from unvoiced dissatisfaction and angry feelings to the spreading of negative word-of-mouth or the termination of a relationship, up to more aggressive reactions and even boycotts (Homburg, Hoyer & Koschate, 2005; Kuester et al., 2015).

The goal of the present study is to examine how customers react when services are moved from free-to-fee in terms of their fairness perceptions. For this purpose, this research project compares a free-to-fee *service payment status* with a status where services have already been priced before (fee) or where they stay for free. In addition, we investigate the effect of *perceived (un)fairness perceptions* on important behavioral intentions like customers' *willingness to pay*, their *purchase and loyalty intentions*. Further, we propose and test four important levers – *pricing scheme*, *service level*, *information status* and *type of price enhancement* – that may mitigate adverse effects of moving services from free-to-fee on customers' perceived fairness by conducting two experimental studies. Figure 3.1 shows the organizational framework of the key constructs and the chronology in which they are hypothesized and examined within the following chapters.

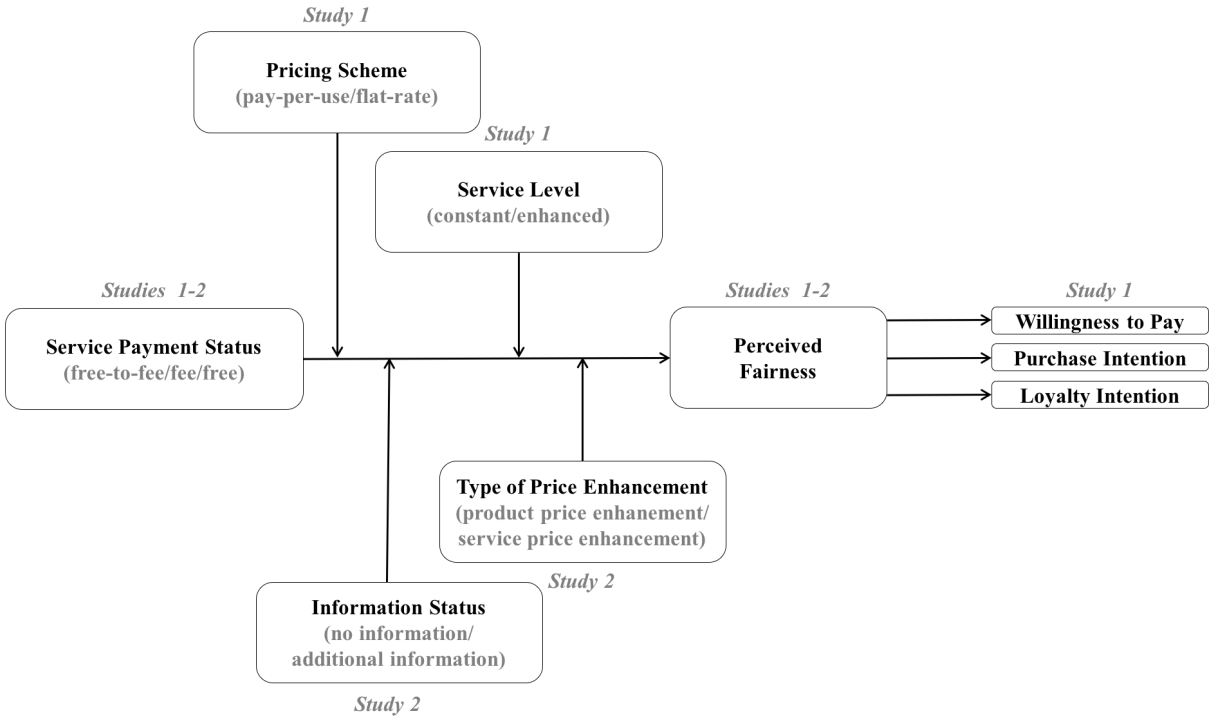


Figure 3.1: Organizational framework.

3.4 Study 1: Free-to-Fee, Pricing Schemes and Service Level

Study 1 aims at exploring the challenges for firms when moving services from free-to-fee. First and foremost, we examine the customers' perspective and try to shed light on their fairness perceptions when free services are suddenly being priced. Moreover, we also strive to gain a better understanding of *how* firms can overcome potential negative customer evaluations to provide concrete recommendations on how firms can handle this move and overcome potential inhibitions. We concentrate on two explicit measures which we assume can counterbalance detrimental fairness perceptions:

First, we explore whether customers prefer separate services at a pay-per-use pricing scheme or a service package at a flat-rate when being charged for services unexpectedly. In practice, one can observe a phenomenon called the *presenter's paradox*, which states that most marketing managers try to avoid this decision by consequently integrating the full range of services into one service package instead of offering these services separately (e.g., Krüger, Mata & Ihmels, 2014; Steiner et al., 2016). While Steiner et al. (2016) have already revealed that industrial buyers prefer separate service presentation formats, we strive to extend this

knowledge by additionally considering the right *tariff choice* – offering the services at a pay-per-use option or at a flat-rate (e.g., Lambrecht & Skiera, 2006). Transferring this previous knowledge to the context of moving services from free-to-fee, offering services individually at a pay-per-use pricing scheme might be beneficial when trying to mitigate the negative effects of moving the service offering from free-to-fee.

Second, we investigate if enhancing the service level simultaneously with starting to price the service offering can counterbalance possible negative effects on customers' fairness perceptions. As "there's a balance between giving and getting" within a successful and fair buyer-seller relationship (Fournier, Dobscha & Mick, 1998, p.44), customers might expect special service when they are suddenly "forced" to pay money. Thus, enhancing the service level as a countermeasure against services that suddenly cost, might help ease unfairness perceptions as the potentially disturbed balance is restored.

Finally, we examine the effect of customers' fairness perceptions on their behavioral intentions like their willingness to pay, their purchase and loyalty intentions.

3.4.1 Hypotheses Development

Price Fairness Perceptions

One of the most influential factors affecting consumers' price fairness perceptions are the characteristics of past purchases (Xia et al., 2004), such as the prior price paid. This suggests that when providers start charging for an existing service, customers will use the price of the prior transaction to judge the fairness of the new transaction. As (price) fairness judgments are essentially comparative (theory of distributive justice; Homans, 1961), a new price is likely to trigger a customer's comparison of the costs and benefits of a transaction. Here, moving services from free-to-fee may shift the perceived balance between the input the customers "give" and the output the customers "gets" within the relationship. Essentially, when providers start charging for a service the customer has received for free thus far, customers are likely to perceive that their own input in terms of money increases from zero to a certain amount while they still receive the same output from the provider at the same time.

Fournier et al. (1998) note "there's a balance between giving and getting in a good relationship." In a competitive market, consumers remain with a provider if they perceive the costs and benefits as adequate for all parties involved. That is, the relationship is in a state of equality. Clearly, increasing existing consumers' costs while keeping the benefits constant, as it is the case when moving services from free-to-fee, moves the customer-firm relationship in a state of disadvantaged inequality. As noted previously, research on distributive justice suggests that especially judgments of disadvantaged inequality trigger perceptions of unfairness (Xia et al., 2004). Following this notion, we propose:

> **Hypothesis 1 (H1a):** Customers perceive a service offering as less fair when it is moved from free-to-fee than in a baseline condition where it remains for free (free-condition).

Instead of moving services from free-to-fee, an alternative option for companies is to price these services as soon as they are introduced to customers. While many firms remain hesitant to use this option, it might be an attractive alternative option. In fact, when firms charge for their service once introduced, it is fair to assume that consumers find that the (newly) increased costs are (immediately) countered with new benefits. Put differently, the state of equality is maintained. Following this line of thought, we propose that consumers' perceptions of price unfairness are stronger when a service is moved from free-to-fee (i.e. into a state of disadvantaged equality) compared to a service that has been priced when introduced (i.e. relationship was kept in a state of equality). In short, we hypothesize:

> **Hypothesis 1 (H1b):** Customers perceive a service offering as less fair when it is moved from free-to-fee than in a baseline condition where it has already been priced before (fee-condition).

Pricing Schemes: Pay-Per-Use versus Flat-Rate

Many manufacturers use the tactic of *flat-rate pricing* when introducing add-on services to existing products. They offer all services within one package at a flat-rate price – often to avoid price negotiations for individual services. When this tactic is used, customers have to commit to a flat-rate plan independent of their actual usage level and the new service is

included in a product-service bundle. Despite its prevalence, such a tactic may be problematic, especially when moving from free-to-fee because a flat-rate tariff creates a perceptual blackbox as it obscures the value of individual components of the offer (cf. Steiner et al., 2016). As a result, customers are likely not aware of the true value of the offer, which could adversely affect customers' fairness perceptions.

In general, ample research suggests that customers tend to prefer a flat-rate price for a number of reasons: First and foremost, flat-rates protect customers from exceptionally and unexpectedly high costs (i.e. insurance effect: Lee & Pinches, 1988) and eliminate the negative experience of occurring marginal costs (i.e. taximeter effect: Prelec & Loewenstein, 1998). In addition to this, customers tend to overestimate their future usage demand (i.e. overestimation effect: Grubb, 2009) and tend to be reluctant to exert an extended effort to search for cheaper, possibly more complex, tariffs (i.e. convenience effect: Kling & Van Der Ploeg, 1990). Given these inherent benefits, many studies have shown that customers are (irrationally) biased towards flat-rate tariffs instead of a pay-per-use tariff for a variety of services, such as Internet access plans (e.g. Lambrecht & Skiera, 2006), gym subscriptions (Della Vigna & Malmendier, 2006), and all-you-can-eat buffets (Just & Wansink, 2011).

Yet, flat-rate tariffs also have considerable downsides for customers. As customers commit to up-front, sunk costs in this tariff, they may experience a discrepancy between the costs they already paid and the services they actually used. This discrepancy can result in two effects (Krämer & Wiewiora, 2011): Firstly, it can lead to customer regret once customers realize they have paid too much when they have not used the services often enough to break even. Secondly, in anticipation of the first scenario, customers may use the service more excessively than needed to justify the cost. The best example for the latter are all-you-can-eat buffets where customers tend to eat more than they actually desire compared to an à la carte menu (Just & Wansink, 2011). With *pay-per-use pricing* many of these downsides can be avoided, as the price customers pay depends on their actual usage of the service. Pay-per-use tariffs hence do not afford any up-front commitments from customers, but instead grant increased flexibility (flexibility effect: Krämer & Wiewiora, 2011). As a result, some customers prefer to pay for individual offers separately even when a flat-rate tariff might be cheaper (pay-per-use bias: e.g., Lambrecht & Skiera, 2006). According to Just and Wansink

(2011) this preference is especially pronounced for customers with a strong desire to avoid regret and (unnecessary) excess usage.

Next to regret or excess use, a discrepancy between costs and benefits in flat-rate tariffs can lead to perceptions of unfairness. With flat-rates, customers incur a fixed, up-front cost, while the benefits vary with the customers' actual utilization of the offer. If customers feel they have not used the offer to its fullest, i.e. perceive to not receive enough benefits for the costs incurred, judgments of disadvantaged inequality are likely to occur. As mentioned above, especially states of disadvantaged inequality trigger perceptions of price unfairness. Even if customers excessively utilize an offer to break even or steal "a good deal", the resulting state of advantaged equality is unlikely to trigger perceptions of price fairness.

In contrast, pay-per-use tariffs are likely to result in judgments of equality. Pay-per-use tariffs allow customers to engage in "choice bracketing" (Read, Loewenstein, Rabin, Keren & Laibson, 1999) and to make each purchase decision in isolation. Clearly, and in stark contrast to a flat-rate tariff, customers will only buy an additional offer if they use it. They have full flexibility and (cost) control. As a result, customers can be sure that they only pay for what they use – and more importantly, that they do not pay too much for something they did not use. As prior research puts it: Customers are "paying for confidence" (Steiner et al., 2014; Eliaz & Schotter, 2010). From an equity perspective, each new cost is then directly countered with a benefit.

Following this reasoning, we propose that customers will perceive a pay-per-use pricing strategy as more equitable and consequently more fair than a flat-rate tariff. Existing literature clearly highlights the fact of zero as a special price. It needs strong arguments to lure the customer away from zero as they generally value free things too much (Shampanier et al., 2007). Given that pay-per-use prices in contrast to flat-rate tariffs directly communicate the value of individual components to the customer more strongly (e.g. Lambrecht & Skiera, 2007), we expect that this perception is especially pronounced when providers move services from free-to-fee. In this specific case the coupling of benefits and costs is even desired. Taken together, we hypothesize:

Hypothesis 2 (H2): Customers perceive a service offering that is moved from free-to-fee as more fair when services are offered individually at a pay-per-use pricing scheme than as a package at a flat-rate.

Hypothesis 3 (H3): Customers perceive a service offering per se (free-to-fee as well as fee-condition) as more fair when services are offered individually at a pay-per-use pricing scheme than as a package at a flat-rate.

Service Level Enhancement

Another common measure manufacturers apply in practice to ease the process from free-to-fee for the customer and therefore also for themselves, is a *service level enhancement*. The rationale behind this approach is also based on considerations of fairness. Following the notions of equity theory and distributive justice, fairness is reached when a consummate balance between inputs and outputs is ensured (Adams, 1965). As already mentioned before, this balance is disturbed as soon as the customer has to spend more money for exactly the same service. To restore this balance, or state of equality, the supplier seeks to compensate its clients by increasing the benefits for customers through the type and extent of the services provided. In short, it is the basic premise that a state of disadvantaged inequality can be avoided – and thus a state of equality maintained – when increased service costs for the customer are accompanied by a higher benefit through an enhanced service level. Following the idea that perceptions of unfairness are especially strong when comparisons of inputs and outputs in a relationship result in a judgment of disadvantaged equality, we propose that moving services from free-to-fee will be perceived as more fair/less unfair, when the service level is enhanced at the same time. We thus hypothesize:

Hypothesis 4 (H4): Customers perceive a service offering that is moved from free-to-fee as more fair when the service level is being enhanced than when the service level is kept constant.

Here also applies that zero is a special price (Shampanier et al., 2007). When moving a service price away from zero, strong arguments are necessary to counterbalance the adverse effects this transition entails. Thus, as customers then probably strive to rebalance their

disturbed input-output ratio, enhancing the service level may be especially efficient in the case of a free-to-fee switch. Therefore, we propose:

Hypothesis 5 (H5): In the free-to-fee-condition a service level enhancement significantly increases customers' fairness perceptions, whereas in the fee-condition a service level enhancement has no significant impact (H5a).

When the service level is kept constant, customers perceive the offer as less fair in the free-to-fee-condition compared to the fee-condition. When enhancing the service level in the free-to-fee-condition, customer's fairness perceptions between the two groups do not differ any more (H5b).

The Effect of Fairness on Behavioral Intentions

Consumers' perceptions on how fair and equitable a price and transaction is, has important consequences for firms. Prior research has shown that especially perceptions of price unfairness can negatively affect, among others, trust in a firm (Xia et al., 2004), purchase intentions (e.g. Homburg et al., 2005), and customer loyalty (e.g. Martin, Ponder & Lueg, 2009). While most fairness research has been conducted in the domain of B2C relationships (e.g., Bolton & Alba, 2006), we expect that these effects also hold true for B2B transactions as well. Accordingly, we expect the new pricing strategy (i.e. moving services from free-to-fee) will affect customers' perceptions of price fairness and, in consequence, have important behavioral implications. In particular, we propose that:

Hypothesis 6 (H6a): Customers' fairness perceptions mediate the relationship between service payment status and willingness to pay.

Hypothesis 6 (H6b): Customers' fairness perceptions mediate the relationship between service payment status and purchase intention.

Hypothesis 6 (H6c): Customers' fairness perceptions mediate the relationship between service payment status and loyalty intention.

3.4.2 Methodology

The primary purpose of this study is to test the hypothesized effects of moving services from free-to-fee on customers' fairness perceptions and if and how the choice of a specific pricing scheme or service level can influence this relationship. Moreover, it captures the impact of perceived fairness on vital relationship characteristics like customers' willingness to pay, loyalty or purchase intentions.

Study setting. For this study, we focused on the emerging service business of the anchoring division of a large European tool manufacturer for the premium segment. Generally, this industrial context was chosen because of its tradition of product-centricity which is, however, already subject to change towards a stronger service orientation in most tool manufacturing firms. The selected company supplies the global construction industry with innovative products (e.g. anchoring systems, hammer drills, firestops and installation systems) and, increasingly, high-value services. Within its tool division the company has already transitioned successfully into services and therefore serves as a best practice example for both researchers and practitioners. However, their anchoring division is still at the beginning of the transformation journey, including the decision if and how to move services from free-to-fee as the first big step in the product-service continuum. The opportunity to accompany this process empirically by conducting a large-scale experiment offered a unique chance to gain extensive insights by examining the presented hypotheses.

Study design and sample. To test our hypotheses, an experimental study with different service scenarios was developed. The experiment was a 2 x 2 x 2 factorial design with *service payment status* (fee versus free-to-fee), *pricing scheme* (individual services, pay-per-use versus service package, flat-rate), and *service level* (constant versus enhanced) as between-subject factors. Two *additional scenarios* (free, constant service level and free, enhanced service level) served as baseline measures where services remain free of charge. These two control groups could not be included as an integral part of our factorial design as free services cannot interact with the various pricing schemes. Descriptions of various service offerings were used as stimuli to manipulate the respective factors.

A customer online survey was programmed using Qualtrics online survey tool and was sent to a total of 88,089 customers of the aforementioned tool company in the German- and French-speaking part of Switzerland (CH) and Germany (DE). The sample was provided by the company itself and the link for our survey was sent via firm internal electronic newsletters. Each contact was provided with a unique ID and was not allowed to participate more than once. The ID gave us the possibility to link our survey data with additional information from the firm's customer database (e.g. role, potential class, loyalty class, branch) and to control for participants randomly attending the survey without being invited. Finally, 304 respondents, who were randomly assigned to the ten treatment conditions, completed the questionnaire. For each finished questionnaire three Euros were donated to the German Childhood Cancer Foundation. Direct incentivization of participants was not allowed due to reasons of compliance. To ensure the quality of their responses, additional checks were employed. Correspondingly, participants who speeded through the survey as well as multivariate outliers were excluded from further analysis. At the median level, respondents who finished the study (n = 304) needed 16.34 minutes to complete the survey. As the threshold for speeders, we took one third below the median of the overall survey duration (under 10.89 minutes) and one third below the median of the time participants spent on reading the experimental scenario (under 24.15 seconds) as reference points. The final decision if speeders were actually screened out was done manually by verifying if they have given plausible answers or not (e.g. filled out comment fields). As a criterion for multivariate within-cell outliers we used the Mahalanobis distance criterion described by Tabachnick and Fidell (2006).

The final sample comprises data from 270 participants (4.8 % female) with cell sizes ranging from 19 to 33. 91.8 % were aged 59 or younger with a median age range of 40 to 49. Most participants (33.3 %) report to work in companies sized between ten and 49 employees, followed by another 28.2 % of respondents working in a company with one to nine staff members and 26.3 % with 50 to 249 associates. Only 7.4 % of participants work in large-size companies with 1,000 employees or more. 64.1 % of the buying centers involved in decision processes regarding the procurement of products and services are stated to consist of two to four responsible persons. Furthermore, 43.3 % of respondents report an average experience with purchasing or using purchased services of more than ten years, followed by 29.6 % of

participants with an experience of one to five years and 21.9 % with six to ten years. Moreover, a large proportion of the participants (41.1 %) uses products or services in the context of fastening or demolition technology on a daily basis and 28.5 % at least once a week. Besides, 91.5 % of respondents are actually involved in decision processes about the procurement of equipment in this area and 53.7 % even make the final decision for a procurement.

Procedure. The questionnaire comprises four sections. First, respondents were presented some general warm-up questions to introduce them to the topic of services in general. They were asked about their experience with purchasing or using services and whether and to what extent they are part of the decision process when acquiring services. Furthermore, participants were questioned about the size of the buying center of the company they are working in, or rather how many people in the company are usually involved in decision processes regarding the procurement of products and services. Finally, to put the respondents into a realistic service scenario and guide them from an abstract level to a more concrete level, they were presented with really existing service offerings. For the description of these services we were supported by internal services experts of the tool manufacturer we were collaborating with. Finally, participants were provided with service examples in the areas of *Preparation and Competence Development*, *Preparation and Technical Services*, *Deployment of Construction Activities*, and *Assessment and Postdeployment Services* (see Appendix B Figure B.1) and were asked to indicate which services are relevant to their company's needs and how often they actually demand the selected services.

In the second part of the questionnaire, respondents were randomly assigned to one of the ten service scenarios on the basis of the 2 (fee versus free-to-fee *service payment status*) x 2 (individual services, pay-per-use versus service package, flat-rate *pricing scheme*) x 2 (constant versus enhanced *service level*) plus 2 (*free*, constant service level and *free*, enhanced service level) study design. Participants were encouraged to take sufficient time to read the scenario carefully. The scenarios referred to the relevant services the respondents chose in part one of the questionnaire. We simulated the previous payment status and how it will evolve in the future (fee, free-to-fee, free). Afterwards, they were informed about the service level of the chosen services and if it will be kept constant or enhanced. In the case of enhanced services, we provided explicit examples and short descriptions of the enhanced

service features. In the end, the respective pricing scheme (individual services, pay-per-use versus service package, flat-rate) was explained. To exclude potential confounding effects of price, no numerical price tag was given. The chosen scenarios, including service examples, service level enhancement examples, and relevant pricing schemes were selected on the basis of the qualitative pre-study (cf. section 3.2) conducted together with the collaborating tool manufacturing company. An overview of all scenarios including the baseline scenarios can be found in Appendix B Table B.1. After each scenario, participants were asked how fair they perceive the presented service offering in general and the described offer and pricing model in particular and how much they would be willing to pay for it. Besides, their reactions regarding several perceptual dependent measures like satisfaction, the perceived trustworthiness of the provider, affect, purchase intentions, and loyalty intentions were captured.

Within the third part of the questionnaire, various additional measures were employed to serve as potential covariates within the upcoming analyses. Therefore, we asked respondents for their perceptions regarding benevolence, functional risk, financial risk, how price sensitive they are in general, and various other aspects. To further confirm the plausibility of the service offerings we finally asked participants to rate how realistic they perceive the described scenarios.

The fourth and last part of the questionnaire comprised sociodemographic questions and questions regarding the firm size.

Dependent measures. The main dependent variable was the perceived fairness of the described scenario in general and the perceived fairness of the described offer and pricing model in particular. All items were measured with seven-point Likert scales. The first variable was assessed using a bipolar, single-item scale that reflects respondents' perceptions of how "unfair/fair" the described service offering is. To capture the fairness perceptions regarding the described offer and pricing model, we were inspired by the perceived price fairness bipolar, three-item scale introduced by Campbell (2007) which is anchored by *"unfair/fair"*, *"wrong/right"*, and *"unreasonable/reasonable"*.

Another important dependent variable was customers' willingness to pay. Therefore, we asked respondents to assume that the average market price for the services they require is 100

monetary units. Against this background, they should assess how much they would be willing to pay for the service offering described in the scenario. The scale ranged from *zero* to *200* monetary units. Respondents in the two control groups (free, constant service level and free, enhanced service level) were excluded from this question as the services described in this offering are provided for free. Asking them for their willingness to pay did not make sense or, in the worst case, would have acted as unintended additional stimuli. To measure customers' loyalty intentions we relied on Mayser and Wangenheim (2013) and asked participants how they would react to the presented scenario by indicating if they would *"switch the provider"* or *"stay a loyal customer"*. Customers' purchase intentions were captured by asking them how probable it is that they would purchase the service offering described in the scenario *("highly improbable/ highly probable"*). This bipolar item was adopted from a four-item scale used by Chandran and Morwitz (2005).

Other measures. We included further measures in our study to check if randomization was successful, control for possible confounds, and examine alternative explanations of the observed effects. In particular, we included trustworthiness in the provider (three items adopted from Zimmer, 2014), perceived benevolence of the provider (three items adopted from Gupta, Yadav & Varadarajan, 2009), affect (single-item adopted from Mayser, 2011) and the customer's price sensitivity (three items adopted from Wakefield & Inman, 2003) as well as a single-item each for perceived value of the offer (Zimmer, 2014) and word-of-mouth intentions (Mayser, 2011). In addition, we included a reality check in our study, to control for the believability and perceived realism of the described scenarios.

3.4.3 Analysis and Results

Construct validity. We tested the construct validity and reliability of all central variables of this study. The tests for all (dependent) variables are satisfactory: All Cronbach's alphas and composite reliabilities of constructs are larger than .70 and hence fully satisfy the minimum thresholds proposed by Bagozzi and Yi (1988; 2012) and Nunnally (1978). The items of benevolence ($\alpha = .94$), trustworthiness ($\alpha = .96$) and price sensitivity ($\alpha = .76$) were averaged to create one overall measure. All other items were measured using single-items.

Model Assumptions. Independent *t*-tests and ANOVAs, which make out the main part of the analyses in this study underlie the assumptions of interdependence of observations between groups, normality, and homogeneity of variances (e.g., Field, 2012; Warner, 2013).

As we chose an experimental between-subjects design to test our hypotheses in this study the interdependence of observations can be assured. Further, ANOVAs tend to be quite robust as regards minor violations of the normality assumption and we also know from the *central limit theorem* that if sample sizes are large enough (samples of 30 or more), the sampling distribution tends to be normally distributed anyway (Field, 2012). In this study sample sizes exceed this threshold by far. Therefore, we are confident that assumptions of normality are met. To test the assumptions of homogeneity of variances, we applied Levene's test. Results of these tests are reported individually for each analysis in the following. If homogeneity assumptions are violated, alternative analyses are demonstrated.

Results. In H1 it is proposed that customers perceive a service offering as less fair when it is moved from free-to-fee than in the two baseline conditions where it either remains for free or where it has already been priced before. To analyze this, we carried out a one-way ANOVA with service payment status as independent variable and perceived fairness as dependent variable. Consistent with our expectations, results show that payment status significantly affects customers' fairness perceptions ($F(2, 267) = 48.20$, $p = .000$, $\eta^2 = .27$). However, since the assumption of homogeneity of variance is not met for this data (indicated by the Levene's test of homogeneity of variances: $F(2, 267) = 5.80$, $p = .003$), we used the Brown-Forsythe $F(2, 260.93) = 55.14$, $p = .000$ instead. Planned comparisons show, in line with hypothesis H1a, that respondents in the free-to-fee-condition perceive a service offering as less fair than respondents in the free-condition ($n_{\text{free-to-fee}} = 121$, $M_{\text{free-to-fee}} = 3.57$, $SD_{\text{free-to-fee}} = 1.64$; $n_{\text{free}} = 55$, $M_{\text{free}} = 5.87$, $SD_{\text{free}} = 1.11$, $t(148.69) = 10.93$, $p = .000$). Furthermore, consistent with hypothesis H1b, respondents in the free-to-fee-condition perceive a service offering as less fair than respondents in the fee-condition ($n_{\text{free-to-fee}} = 121$, $M_{\text{free-to-fee}} = 3.57$, $SD_{\text{free-to-fee}} = 1.64$; $n_{\text{fee}} = 94$, $M_{\text{fee}} = 4.61$, $SD_{\text{fee}} = 1.41$, $t(210.76) = 4.98$, $p = .000$). Additional post hoc analyses – using the Games-Howell procedure that is the procedure of choice if population variances and sample sizes differ – reveal that participants' fairness perceptions of all three payment status conditions are significantly distinct from each other (cf. Figure 3.2).

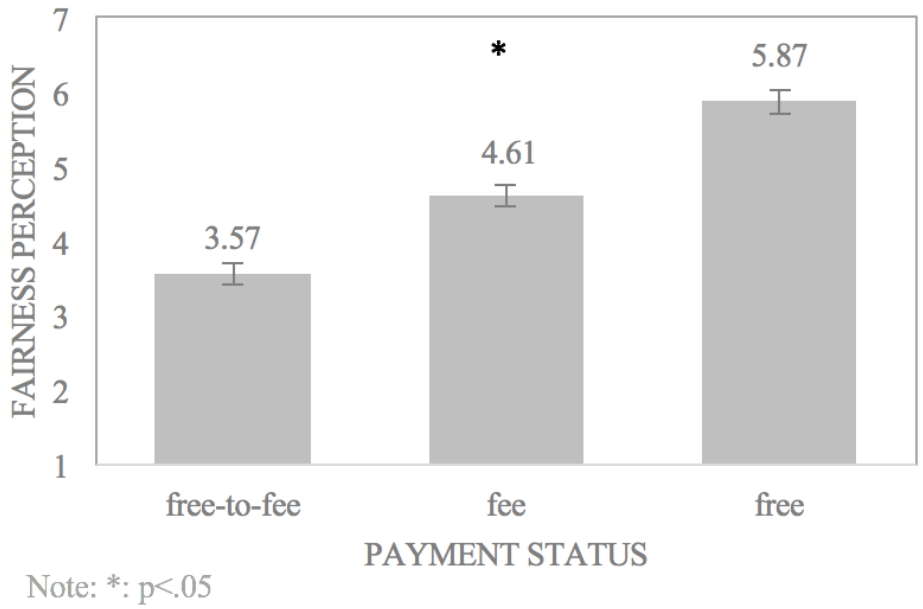


Figure 3.2: Mean differences in perceived fairness for payment status.

The second hypothesis explores the selection of the right pricings schemes as potential effective levers to facilitate the move of value-added services from zero to a certain price. In H2 we assume that customers prefer a specific pricing scheme for services that are moved from free-to-fee in the sense that there are differences between their fairness perceptions when these services are offered individually at a pay-per-use pricing scheme versus services offered as a package at a flat-rate. In support of these assumptions, results of an independent *t*-test reveal that participants perceive services that are moved from free-to-fee as more fair when they are offered separately and based on a "pay-as-you-go" principle than as a package at a flat-rate (n_{ppu} = 56, M_{ppu} = 3.95, SD_{ppu} = 1.70; n_{flat} = 65, M_{flat} = 3.25, SD_{flat} = 1.52, $t(119)$ = 2.39, p = .018). Figure 3.3 visualizes these results.

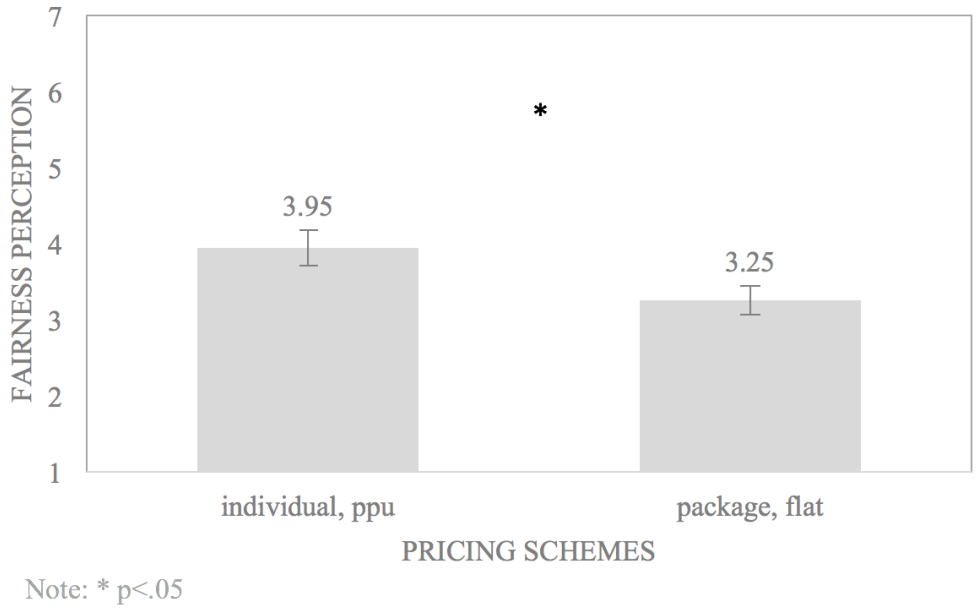


Figure 3.3: Mean differences in perceived fairness for pricing schemes.

In H3 it is assumed that customers react per se with higher perceptions of fairness when services are offered separately and needs-based than as a full package at a flat-rate, independently if the services are moved from free-to-fee or have already been priced before. To analyze H3, we carried out a 2 x 2 ANOVA with service payment status (free-to-fee-condition versus fee-condition) and pricing scheme (individual, pay-per-use versus package, flat-rate) as independent variables and fairness perception as dependent variable ($F(3, 211) = 13.03$, $p = .000$, $\eta^2 = .16$). As previously explained in H1, the direct effect of payment status is significant, showing that customers react with lower fairness perceptions when services are moved from free-to-fee compared to services that have been priced before ($F(1, 211) = 27.01$, $p = .000$). The direct effect of pricing scheme is also significant, showing customers' preference for services being offered individually and pay-per-use rather than as a package and a flat-rate ($F(1, 211) = 13.82$, $p = .000$). Moreover, the results did not show any significant interaction ($F(1, 211) = .13$, $p = .723$). These findings provide empirical support for our prediction in H3 that customers perceive a service offering per se as more fair when services are offered and priced separately than packaged at a lump sum, irrespective of whether these services are being moved from free-to-fee or they have already been priced before (cf. Figure 3.4.).

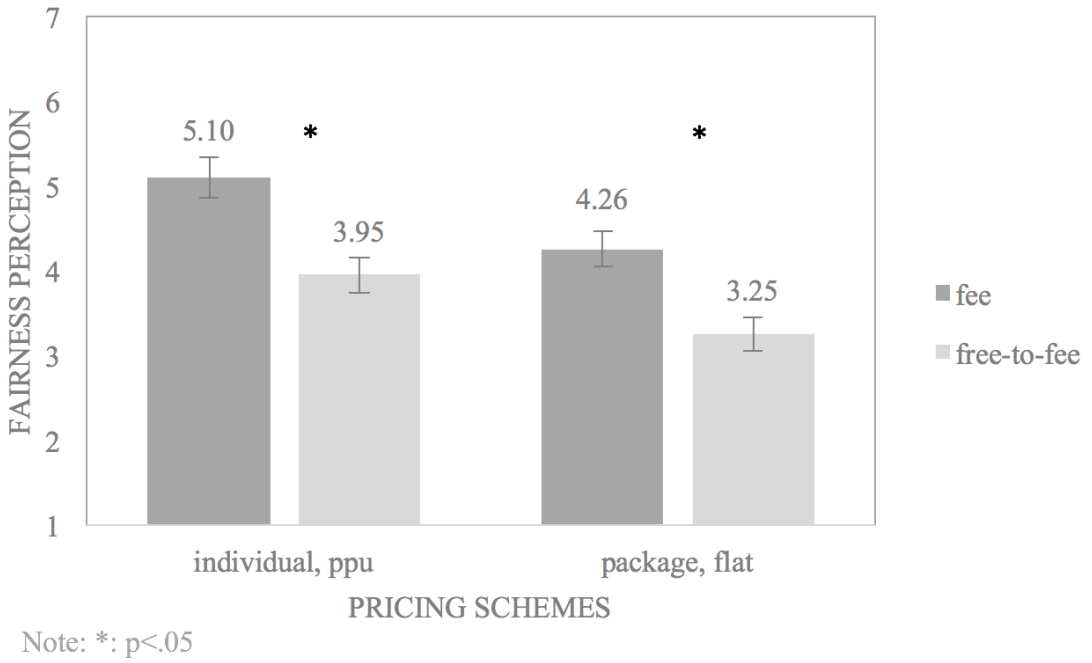


Figure 3.4: Mean differences in perceived fairness for payment status x pricing schemes.

In H4 we postulate that enhancing the service level is a meaningful measure to alleviate customers' negative perceptions of fairness when services are moved from free-to-fee. Thus, we assume that improving the type and extent of the services provided results in more positive fairness evaluations. Surprisingly, results do not underpin these assumptions. Although customers perceive the service level enhancement marginally more fair than the constant service level (n_{enh} = 58, M_{enh} = 3.71, SD_{enh} = 1.41 versus n_{const} = 63, M_{const} = 3.44, SD_{const} = 1.82), an independent *t*-test reveals that this effect is not significant ($t(115.80) = -.89$, $p = .376$). The assumption of homogeneity is also not met for this data as indicated by Levene's test of homogeneity of variances ($F(1, 119) = 6.04$, $p = .015$). In brief summary, these findings point out that a service level enhancement is no suitable means to mitigate customers' disadvantageous fairness perceptions when services are moved from a zero price to a specific charge (cf. Figure 3.5).

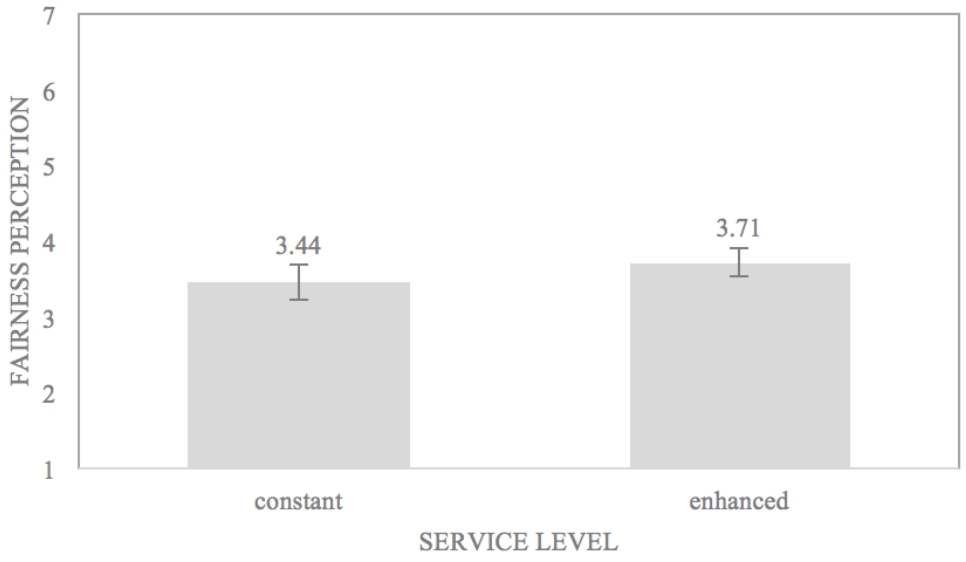


Figure 3.5: Mean differences in perceived fairness for service level.

In H5 we explore potential dependencies and interaction effects between the factors of service payment status and service level. We expect that a service level enhancement has the potential to significantly increase customers' fairness perceptions when services are moved from free-to-fee and thus bring the service offering to a comparable fairness level of services that have been priced before. We first performed a 2 x 2 ANOVA with payment status (free-to-fee versus fee-condition) and service level (constant service level versus enhanced service level) as independent variables and customers' fairness perceptions as dependent variable ($F(3, 211) = 8.28$, $p = .000$, $\eta^2 = .11$). As already shown in H1 and H3, the direct effect of payment status is significant, showing that customers react with lower fairness perceptions when services are moved from free-to-fee compared to services that have been priced before ($F(1, 211) = 23.18$, $p = .000$). Consistent with the results of H4, the direct effect of service level is not significant ($F(1, 211) = .86$, $p = .356$). Furthermore, the interaction effect between payment status and service level also did not show any significant outcome ($F(1, 211) = .09$, $p = .759$). Levene's test is also statistically significant in this case, indicating a violation of the homogeneity assumption ($F(3, 211) = 3.29$, $p = .022$). As the results are highly significant on a $p < .01$ level, it is reasonable to assume that the results of the ANOVA are still reliable. According to Field (2012), it is useful to additionally assess if variances are too unequal to continue and therefore check Hartley's F_{max}, which is the variance ratio between the group with the biggest variance and the group with the smallest variance. In our

case this ratio is below the critical value of 2 for sample sizes (n) of 30–60 ($\sigma^2_{largest} / \sigma^2_{smallest} = 1.81$).

In H5a we propose that a service level enhancement significantly increases customers' fairness perceptions for services that are moved from free-to-fee whereas this measure has no impact for services that have been priced before. In the free-to-fee-condition, the mean difference in fairness perceptions between a constant and enhanced service level is 0.27 and an independent t-test confirms – again repeating the results of H4 – that this group difference is not significant ($n_{const} = 63$, $M_{const} = 3.44$, $SD_{const} = 1.82$ versus $n_{enh} = 58$, $M_{enh} = 3.71$, $SD_{enh} = 1.41$, $t(115.80) = -.89$, $p = .376$). In the fee-condition the mean difference is 0.14 and also not statistically significant ($n_{const} = 43$, $M_{const} = 4.53$, $SD_{const} = 1.49$ versus $n_{enh} = 51$, $M_{enh} = 4.67$, $SD_{enh} = 1.35$, $t(92) = -.45$, $p = .654$). Therefore, we cannot confirm H5a, as for both payment status conditions (free-to-fee and fee-condition) a service level enhancement does not significantly influence customers' fairness perceptions.

In H5b we assume that when *not* enhancing the service level, customers perceive a service offering as less fair when it is moved from free-to-fee compared to when it has been priced before. However, we expect that when enhancing the service level for services free-to-fee-condition, customers' fairness perceptions can be brought to a similar level of services in the fee-condition and whose service level has not been modified. In this case, an independent t-test reveals – as expected – that when the service level is kept constant, customers perceive a service offering as significantly less fair in the free-to-fee-condition compared to the fee-condition with a mean difference of 1.09 ($n_{free\text{-}to\text{-}fee,\ const} = 63$, $M_{free\text{-}to\text{-}fee,\ const} = 3.44$, $SD_{free\text{-}to\text{-}fee,\ const} = 1.82$ versus $n_{fee,\ const} = 43$, $M_{fee,\ const} = 4.53$, $SD_{fee,\ const} = 1.49$, $t(104) = 3.26$, $p = .002$). However, the proposed mitigating effect of enhancing the service level in the free-to-fee-condition on customers' fairness perception cannot be confirmed. Customers perceive a service offering that is moved from free-to-fee but has an enhanced service level still as significantly less fair compared to services that have been priced before but the service level is kept constant. The mean difference here equals 1.13 ($n_{free\text{-}to\text{-}fee,\ enh} = 62$, $M_{free\text{-}to\text{-}fee,\ enh} = 3.61$, $SD_{free\text{-}to\text{-}fee,\ enh} = 1.70$ versus $n_{fee,\ const} = 50$, $M_{fee,\ const} = 4.74$, $SD_{fee,\ const} = 1.37$, $t(110) = -3.80$, $p = .000$). As a result, H5b also needs to be rejected. This finding provides empirical support for our baseline prediction in H1 of the existence of a general reluctance of customers towards

services being moved from free-to-fee by their provider (cf. Figure 3.6).

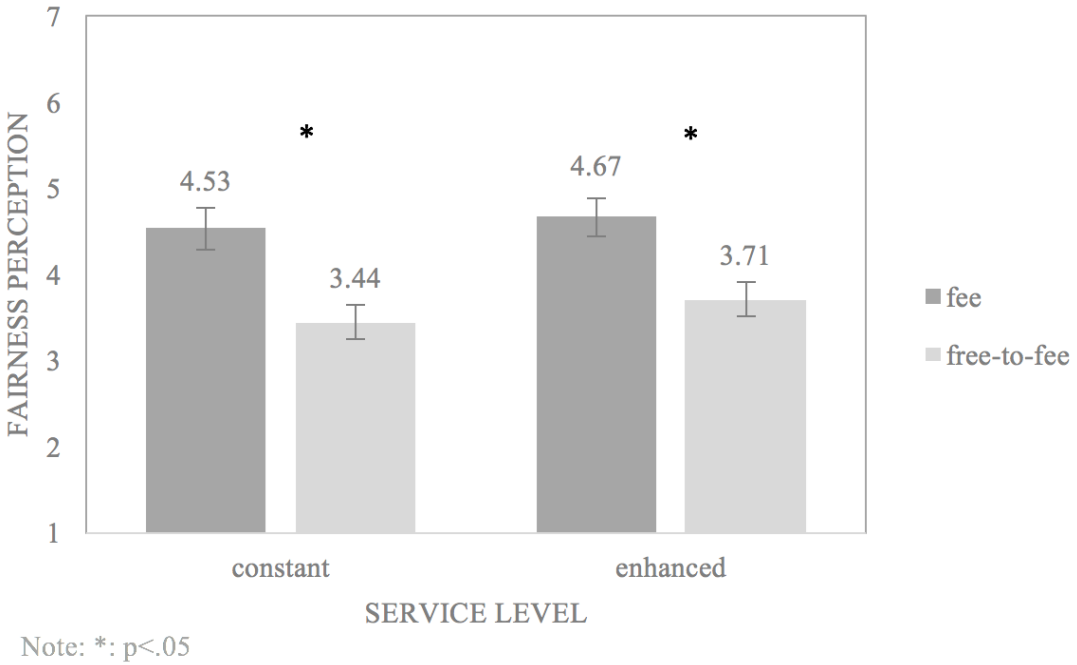


Figure 3.6: Mean differences in perceived fairness for payment status x service level.

In H6a we consider the possibility that customers' perceived fairness mediates the relationship between service payment status and customers' willingness to pay. We expect that high levels of perceived fairness (for instance in the case of a free service offering) positively affects customers' willingness to pay, whereas low levels of perceived fairness, or rather, perceived unfairness (for instance in the case of services that are moved from free-to-fee) entail lower willingness to pay. We investigated the proposed relationship by conducting a mediation analysis using a bootstrap test (5,000 resamples) following the recommendations of Preacher and Hayes (2004; 2008). According to Zhao, Lynch, and Chen (2010) this approach is superior to the traditionally-used causal step method of Baron and Kenny (1986) and it is more reliable than Sobel's z-test (Sobel, 1982). Moreover, they state that there is no need for a direct effect to establish mediation. The only requirement is an indirect effect that is significant (Zhao et al., 2010). In support of H6a, the overall indirect path from service payment status to willingness to pay through customers' perceived fairness is significant (b = -15.35), with a 95 % confidence interval excluding zero [-.22.44, -9.03]. As Figure 3.7 displays, the negative sign is due to the fact that the categorical independent variable payment status was coded as *1 = fee* and *2 = free-to-fee* resulting in a negative effect

of payment status on perceived fairness (a = -1.04, t(213) = -4.89, p = .000). In combination with the positive effect of perceived fairness on willingness to pay (b = 14.82, t(212) = 9.52, p = .000) the overall indirect effect is then negative. Ignoring that a mediating role of perceived fairness exists, the direct path between payment status and willingness to pay is not significant (c = -4.84, t(212) = -.95, p = .341), providing evidence for an indirect-only (full) mediation (Zhao et al., 2010). The total effect of service payment status on willingness to pay is negative (b = -20.19, t(213) = -3.52, p = .000), which means that respondents in the free-to-fee-condition are willing to pay significantly less for the service offering than respondents in the fee-condition. Additionally, an independent t-test validates this finding and reveals that in the fee-condition the average price customers are willing to pay for the described service offering is 41 % higher than the average price in the free-to-fee-condition (n_{fee} = 94, M_{fee} = 69.83, SD_{fee} = 41.90; $n_{free\text{-}to\text{-}fee}$ = 121, $M_{free\text{-}to\text{-}fee}$ = 49.64, $SD_{free\text{-}to\text{-}fee}$ = 41.59, t(213) = 3.52, p = .001).

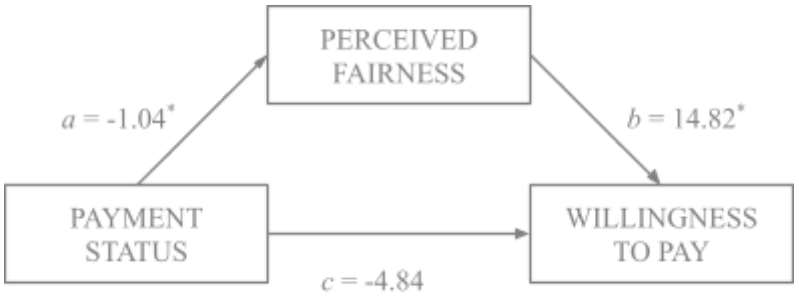


Figure 3.7: The mediating role of perceived fairness on the relationship between service payment status and willingness to pay.

In H6b we assume that customers' perceived fairness mediates the impact between service payment status and customers' purchase intentions. We anticipate that high levels of perceived fairness induce high levels of purchase intentions and low levels of perceived fairness imply lower levels of purchase intentions. Since the independent variable *payment status* comprises three factor levels, we based our investigations on the recent advice given by Hayes and Preacher (2014) regarding statistical mediation analysis with a multicategorical predictor. Their initial recommendations only relate to mediation analysis with a dichotomous or continuous independent variable (Preacher & Hayes, 2004; 2008). Using payment status as the multicategorical independent variable, we first created two dummy codes to quantify the relative indirect, direct and total effects of being in one category (free-to-fee-condition or

fee-condition, coded 1) relative to a reference group (free-condition, coded 0). Confirming H6b, we found significant relative indirect effects of service payment status on customers' purchase intentions through customer's perceived fairness. We discovered that fairness perception exerts significant indirect effects in the fee-condition relative to the free-condition (b = -.85), with a 95 % bootstrapped confidence interval not containing zero [-1.17, -.55] as well as in the free-to-fee-condition relative to the free-condition (b = -1.54; 95 % CI: [-1.90, -1.20]). Figure 3.8 shows that the negative sign stems from the combination of the negative effects of payment status on perceived fairness ($a_{\text{free-fee}}$ = -1.27, t(266) = -5.09, p = .000; $a_{\text{free-free-to-fee}}$ = -2.31, t(266) = -9.66, p = .000) and the positive effect of perceived fairness on purchase intentions (b = .67, t(265) = 11.59, p = .000). The aforementioned negative effects of payment status on fairness perceptions result from coding the multicategorical independent variable payment status as 1 = *free*, 2 = *fee* and 3 = *free-to-fee*. Holding customers' fairness perceptions constant, the relative direct paths between payment status and purchase intentions are not significant ($c_{\text{free-fee}}$ = -.01, t(265) = -.04, p = .972; $c_{\text{free-free-to-fee}}$ = .11, t(265) = .44, p = .664), again indicating an indirect-only (full) mediation (Zhao et al., 2010). The relative total effects of service payment status on customers' purchase intentions are negative and significant ($b_{\text{free-fee}}$ = -.85, t(266) = -2.98, p = .003; $b_{\text{free-free-to-fee}}$ = -1.43, t(266) = -5.19, p = .000), demonstrating that participants' purchase intentions regarding the service offering in the fee-condition as well as in the free-to-fee-condition is significantly lower than in the free-condition.

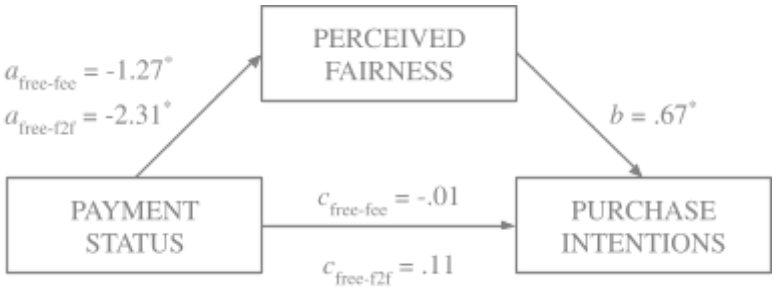


Figure 3.8: The mediating role of perceived fairness on the relationship between service payment status and purchase intentions.

In H6c we expect that the mediating role of customers' perceived fairness also holds for the relationship between service payment status and customers' loyalty intentions. We postulate that high levels of perceived fairness positively influence a person's intention to stay

a loyal customer, whereas low levels of perceived fairness rather result in customers' intention to switch the provider. As already described in the analysis section of H6b, we conducted a mediation analysis with a multicategorical independent variable following the recommendations of Hayes and Preacher (2014). In support of H6c, the relative indirect effects from service payment status to loyalty intentions through customers' perceived fairness are significant. This applies both for the relative indirect effect in the fee-condition relative to the free-condition (b = -.97), with a 95% bootstrapped confidence interval not containing zero [-1.32, -.64] as well as in the free-to-fee-condition relative to the free-condition (b = -1.76; 95 % CI: [-2.16, -1.41]. As Figure 3.9 illustrates, the negative sign arises from the negative effects of payment status (coded as 1 = *free*, 2 = *fee* and 3 = *free-to-fee)* on perceived fairness ($a_{\text{free-fee}}$ = -1.27, t(266) = -5.09, p = .000; $a_{\text{free-free-to-fee}}$ = -2.31, t(266) = -9.66, p = .000) in combination with the positive path of perceived fairness on loyalty intentions (b = .76, t(254) = 16.06, p = .000). Disregarding the existence of perceived fairness as a mediator, the relative direct effects between payment status and loyalty intentions are not significant ($c_{\text{free-fee}}$ = .25, t(265) = 1.25, p = .214; $c_{\text{free-free-to-fee}}$ = -.20, t(265) = -.94, p = .347), once again confirming an indirect-only (full) mediation (Zhao et al., 2010). The relative total effects of service payment status on customers' loyalty intentions are negative and significant ($b_{\text{free-fee}}$ = -.72, t(266) = -2.64, p = .009; $b_{\text{free-free-to-fee}}$ = -1.96, t(266) = -7.56, p = .000), proving that respondents in the fee-condition as well as in the free-to-fee-condition are less likely to be a loyal customer than when the service offering is provided for free.

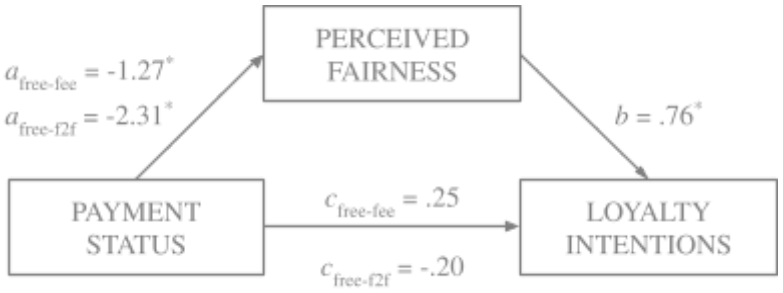


Figure 3.9: The mediating role of perceived fairness on the relationship between service payment status and loyalty intentions.

Alternative explanations and further insights.

The following section provides additional explanations and background information for hypotheses from *Study 1* that could not be confirmed. In addition, results are presented here that were not hypothesized but nevertheless appear interesting and important.

Service level and trustworthiness. Initially, we considered the possibility that enhancing the service level has the potential to mitigate customers' negative perceptions of fairness when services are moved from free-to-fee (H4). Against our expectations, upgrading the type and extent of the services provided does not induce more positive fairness evaluations and therefore higher willingness to pay, higher levels of customers' purchase and loyalty intentions in our study. Attempts to explain this counterintuitive effect via mediation analyses with various potential mediators gives further interesting food for thought. We examined if trustworthiness in the service provider is a necessary precondition for using a service level enhancement as an effective lever to alleviate potential drawbacks when services are moved from free-to-fee. The importance of trustworthiness for the success of supplier relationships has been widely confirmed in prior research (e.g., Dowell, Morrison & Heffernan, 2014). As previously described, we followed the procedure suggested by Preacher and Hayes (2004; 2008) for mediation analysis using a bootstrap test (5,000 resamples). Results reveal that the overall indirect path from service level to customers' perceived fairness through trustworthiness in the service provider is significant (b = .33), with a 95 % confidence interval excluding zero [.00, .67]. The positive effect stems from the fact that the categorical independent variable service level was coded as 1 = *constant service level* and 2 = *enhanced service level* resulting in a (marginally statistically significant) positive effect of service level on trustworthiness in the service provider (a = .57, t(119) = 1.90, p = .060). In conjunction with the positive effect of trustworthiness in the service provider on customers' perceived fairness (b = .58, t(118) = 7.84, p = .000) the overall indirect effect is then positive. Ignoring the existence of trustworthiness in the service provider as a mediator, the direct path between service level and perceived fairness is not significant (c = -.07, t(119) = -.28, p = .779), proving an indirect-only (full) mediation (Zhao et al., 2010). The total effect of service level on customers' perceived fairness is positive but not significant (b = .26, t(119) = .88, p = .381). More recent literature on mediation analysis suggests that it is possible to prove an indirect effect without establishing a total effect (Preacher & Hayes, 2004; Zhao et al., 2010).

Hence, we still conclude that respondents in the enhanced service level-condition react with significantly higher trustworthiness in the service provider and therefore significantly higher perceptions of fairness than when the service level is kept constant (cf. Figure 3.10).

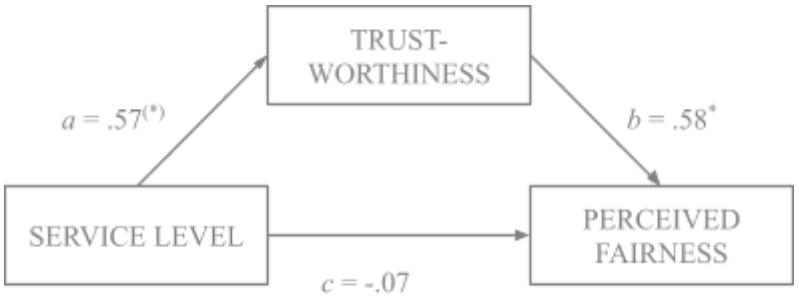


Figure 3.10: The mediating role of trustworthiness in the service provider on the relationship between service level and perceived fairness.

Service Level and Benevolence. Over the past two decades research has established trust as a complex, higher-order construct relevant amongst other things for the success of supplier relationships, with both cognitive and affective dimensions (e.g., Dowell et al., 2014). To gain more fine-grained insights into the role of trust when using a service level enhancement as a lever to counterbalance customers' unfavourable fairness reactions when moving services from free-to-fee, we therefore explored benevolence (cognitive element) and affect (affective element) as sub-elements of trust and their role as potential mediators.

Benevolence as a cognitive element of trust is defined as one partner's belief "that the other party is motivated to protect the best interests of the focal party when new conditions arise for which no prior commitments were made" (Gupta et al., 2009, p. 161). To understand if customers' perceptions of the seller's benevolence are decisive when trying to use a service level enhancement to mitigate customers' negative fairness perceptions when moving services from free-to-fee, we again conducted a mediation analysis following Preacher and Hayes (2004; 2008) using a bootstrap test (5,000 resamples). Our findings show that the overall indirect path from service level to customers' perceived fairness through benevolence is significant (b = .44), with a 95 % confidence interval not containing zero [.02, .92]. The positive effect results from the coding of the categorical independent variable service level: 1 = *constant service level* and 2 = *enhanced service level,* resulting in a positive effect of service level on customers' perceptions of the seller's benevolence (a = .68, $t(93)$ = 2.01, p =

.048). Together with the positive effect of benevolence on customers' perceived fairness (b = .64, $t(92) = 7.41$, p = .000) the overall indirect effect is then positive. Ignoring the mediating role of benevolence, the direct path between service level and perceived fairness is not significant (c = -.09, $t(93) = -.30$, p = .766), providing evidence for an indirect-only (full) mediation (Zhao et al., 2010). The total effect of service level on customers' perceived fairness is positive but not significant (b = .35, $t(93) = .98$, p = .328). Thus, we conclude that respondents in the enhanced service level-condition react with significantly higher perceptions of the seller's benevolence and therefore significantly higher perceptions of fairness than when the service level is kept constant (cf. Figure 3.11).

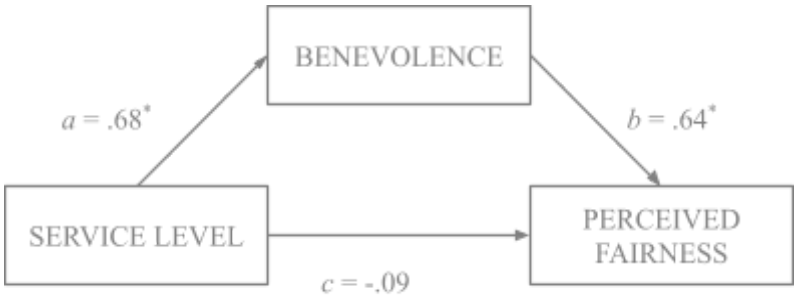


Figure 3.11: The mediating role of customers' perceptions of the seller's benevolence in the service provider on the relationship between service level and perceived fairness.

Service level and affect. Affect as a further component of trust is related to customers' immediate emotions (Dowell et al., 2014). In this study it refers to how angry or pleased customers felt about their service offering. Further, we examined if affect plays a decisive role when trying to use a service level enhancement as an effective lever to mitigate potential negative fairness perceptions when services are moved from free-to-fee. Again, we conducted a mediation analysis following Preacher and Hayes (2004; 2008) using a bootstrap test (5,000 resamples). Results show that the overall indirect path from service level to customers' perceived fairness through affect is significant (b = .56), with a 95 % confidence interval not containing zero [.10, 1.03]. As the categorical independent variable service level was coded as 1 = *constant service level* and 2 = *enhanced service level,* the relationship between service level and affect is positive (a = .73, $t(119) = 2.41$, p = .018). Together with the positive effect of affect on customers' perceived fairness (b = .77, $t(118) = 13.67$, p = .000), the overall indirect effect is then also positive. Ignoring that affect as a mediator exists, the direct path between service level and perceived fairness is not significant (c = -.30, $t(119) = -1.57$, p =

.119), providing evidence for an indirect-only (full) mediation (Zhao et al., 2010). The total effect of service level on customers' perceived fairness is positive but not significant (b = .26, $t(119)$ = .88, p = .381). Thus, we conclude that respondents in the enhanced service level-condition react with significantly more positive affective emotions and therefore significantly higher perceptions of fairness than when the service level is kept constant (cf. Figure 3.12).

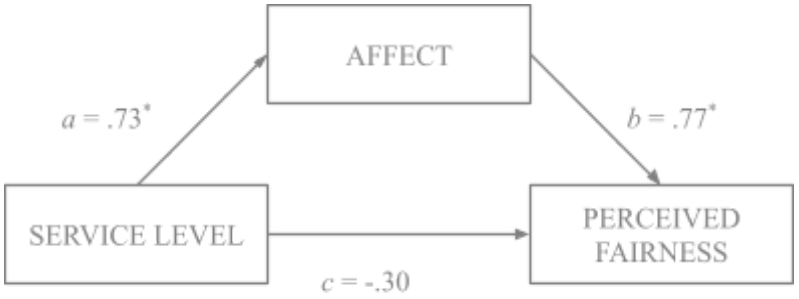


Figure 3.12: The mediating role of affect on the relationship between service level and perceived fairness.

Service level and customers' price consciousness. In order to gain a more general understanding of the role of a service level enhancement as a potent marketing tool across all payment status conditions, we additionally explored if the relationship between service level and perceived fairness is moderated by customers' price consciousness.

To test for moderation, we followed the procedure suggested by Spiller, Fitzsimons, Lynch, and Mcclelland (2013) for interactions between continuous and categorical variables. This approach is superior to the traditional solution of mean-splitting the continuous variable and then running a 2 x 2 ANOVA for reasons of higher statistical power (e.g., Irwin & Mcclelland, 2001). Spiller et al. (2013) recommend using moderated multiple regression to calculate the difference between the regression line for the treatment group and the control group across all values of the continuous variable. Given that significant differences are found, an interaction effect is discovered. The so-called *floodlight analysis* illuminates the simple effect of the manipulated variable across the entire range of the moderator and builds on the Johnson-Neyman technique (Johnson & Neyman, 1936). The border between the regions, where the simple effect is significant and where it is not (with a p-value of exactly

.05), is called the Johnson-Neyman point. A moderated multiple regression on perceived fairness with price sensitivity (M = 5.00, SD = 1.41, min = 1, max = 7), the dummy variable for service level and their interaction ($t(265) = 2.32$, $p = .021$) unveiled a significant negative effect of service level for any values of price sensitivity lower than 1.35 ($B_{JN1} = -1.04$, SE = .53, $p = .05$) and a significant positive effect for values of price sensitivity higher than 6.11 ($B_{JN2} = .59$, SE = .30, $p = .05$). More specifically, that means that respondents reporting low levels of price sensitivity prefer a constant service level over a service level enhancement with regard to their fairness perceptions. In contrast, participants who classify their buying behavior as highly price sensitive perceive an enhanced service level as significantly more fair than a constant one.

Service level in the free-condition. Moreover and even more surprisingly, results of an independent *t*-test reveal that participants in the free-condition perceive a constant service level as significantly more fair than a service level enhancement ($n_{const} = 25$, $M_{const} = 6.28$, $SD_{const} = 1.02$; $n_{enh} = 30$, $M_{enh} = 5.53$, $SD_{enh} = 1.07$, $t(53) = 2.62$, $p = .011$), while generally one would expect “the more for free the better”. Attempts to explain this counterintuitive effect via moderation analyses with benevolence, financial risk, trust, affect, word of mouth, expected service level or price sensitivity as potential moderators do not deliver any significant results (cf. Figure 3.13).

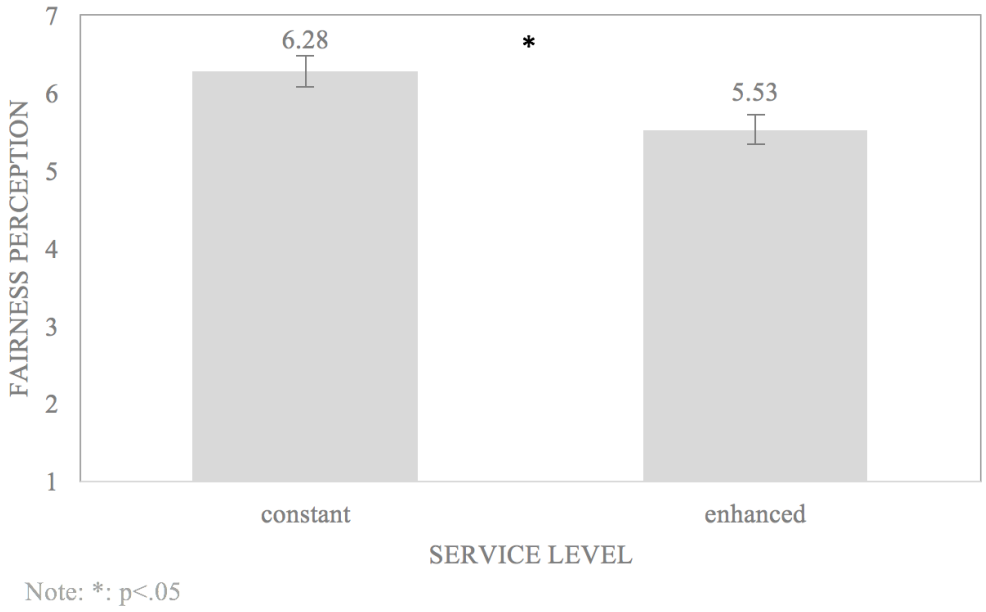


Figure 3.13: Mean differences in perceived fairness for service level in the free-condition.

Individual services at a flat-rate. Finally, and for the sake of completeness, we would like to state that in the original version of our study questionnaire we tested three pricing schemes as potential levers to mitigate customers' negative fairness perceptions when moving services from free-to-fee instead of the two postulated in H2. In H2 we assume that customers perceive a service offering that is moved from free-to-fee as more fair when services are offered individually at a pay-per-use pricing scheme than as a package at a flat-rate. Initially, we also examined the role of services that are offered individually but at a flat-rate in addition to the pricing schemes reported above. We carried out a one-way ANOVA with pricing scheme as independent variable and perceived fairness as dependent variable. Results reveal that choosing the right pricing scheme significantly affects customers' fairness perceptions ($F(2, 166) = 3.34$, $p = .038$, $\eta^2 = .04$). Levene's test of homogeneity of variances is not significant in this case ($F(2, 166) = .27$, $p = .764$), so the assumption of homogeneity of variance is met for this data. Planned comparisons show that participants perceive services that are moved from free-to-fee as more fair when they are offered separately and based on a "pay-as-you-go" principle than individually but at a flat-rate ($n_{ppu} = 56$, $M_{ppu} = 3.95$, $SD_{ppu} = 1.70$; $n_{indiv, flat} = 48$, $M_{indiv, fllat} = 3.29$, $SD_{indiv, flat} = 1.64$, $t(166) = 2.06$, $p = .041$). In contrast, there is no difference in customers' fairness perceptions of services that are offered individually at a flat-rate and a package at a flat-rate ($n_{indiv, flat} = 48$, $M_{indiv, fllat} = 3.29$, $SD_{indiv, flat} = 1.64$, $t(166) =$

2.06, p = .041; n_{flat} = 65, M_{flat} = 3.25, SD_{flat} = 1.52, $t(166)$ = -.15, p = .882). Additional post hoc analyses – using Gabriel's procedure that is the procedure of choice if sample sizes are slightly different – do not reveal any significant differences in customers' fairness perceptions between the three pricing schemes. This indicates that the *presentation format* – offering the services bundled or individually – is not as relevant as choosing the right *tariff choice* – offering the services at a pay-per-use option or at a flat-rate – for a reasonable pricing scheme decision in the context of moving services from free-to-fee. Hence, we concentrated on only two pricing schemes in our study: individual services at a pay-per-use pricing scheme and a package at a flat-rate (cf. Figure 3.14).

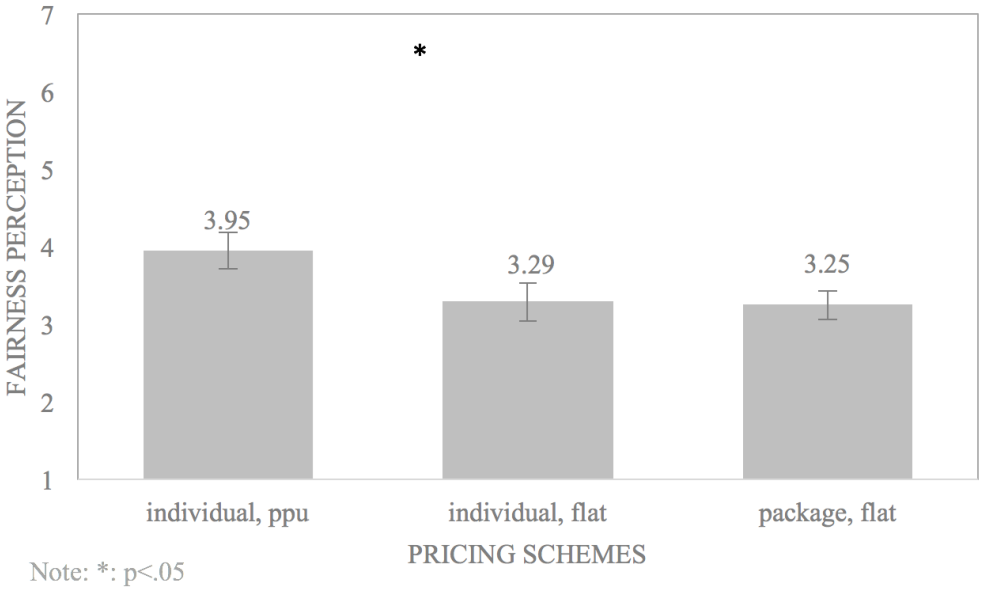


Figure 3.14: Mean differences in perceived fairness for extended pricing schemes.

3.4.4 Summary of Findings

Overall, the results of this study highlight the challenge firms face when moving services from free-to-fee. As proposed, we find that such a move fosters perceptions of price unfairness in customers. While most research on price fairness has been conducted in a B2C context, we show that fairness perceptions play a central role in B2B interactions as well. In particular, we find that a move from free-to-fee triggers customers' perceptions of unfairness. Interestingly, these unfairness perceptions were not only lower in the constantly

free-condition, but also in the constantly fee-condition compared to the free-to-fee-condition. This finding clearly illustrates how challenging it is to *depart from* "price zero".

Indeed, our findings on how to ease the process of moving from free-to-fee further underline this challenge. Results hence demonstrate that an enhancement of the service level with a move from free-to-fee cannot directly ease unfairness perceptions. As our additional results show, however, a service level enhancement may indirectly affect customers' fairness perceptions through improved perceptions of the provider's trustworthiness and benevolence as well as a positive affective response.

Moreover, this research challenges a pricing tactic which is often used by manufacturers when introducing new add-on services: flat-rate pricing. Drawing from equity theory, we propose and find that individual pay-per-use may be the more appropriate pricing tactic to use when moving services from free-to-fee. As prior research suggests, a pay-per-use tariff does not only increase customers' awareness of the individual value of the add-on service, it also enhances their flexibility and confidence (Lambrecht & Skiera, 2006) to not overpay when using the service. We advance this research by highlighting the effect of this flexibility on fairness perceptions.

Finally, this study highlights the importance of fairness perceptions on important behavioral outcomes, especially on customers' willingness to pay and their purchase and loyalty intentions and provides some deeper insights into additional findings, which were not hypothesized initially. For instance this study shows that participants who classify their buying behavior as highly price sensitive perceive an enhanced service level as significantly more fair than a constant one.

3.5 Study 2: Product versus Service Pricing, Additional Information

Study 1 highlights the challenge for firms when moving add-on services from free-to-fee and explores various approaches on how related negative customer perceptions can be mitigated. Following this, we designed *Study 2* with the goal in mind to examine further

strategies to ease the process and hence reduce customers' feelings of unfairness when services are priced for the first time. In particular, we examine two strategies:

First, we examine if providing the customer with additional information about the actual monetary value of the free service offering can mitigate the negative effect of moving this service offering from free-to-fee on customers' fairness perceptions. In *Study 1* we found that customers' perceptions of price fairness tend to be higher when the service was priced from the start (i.e. constantly fee-condition) in contrast to a service that was introduced for free and then moved to a fee (i.e. free-to-fee-condition). This suggests that providing customers with an initial price tag to increase the awareness of the value of the individual offer, might help ease unfairness perceptions.

Second, we test if enhancing the core product's price is generally superior to separately starting to price the service offering as regards customers' perceived fairness and therefore also their willingness to pay or their loyalty or purchase intentions. That is, instead of examining how introducing a stand-alone service price for add-on services affects fairness perceptions, we shift the perspective to the so-called hybrid bundle, which is defined as an integrated bundle of industrial product and services (Ulaga & Reinartz, 2011) and its impact of a price increase on fairness perceptions. As zero is a special price that tends to evoke strong and at times irrational reactions from customers (Shampanier et al., 2007). Deviating from separately pricing the services and focusing on a price increase for the whole bundle instead (which comes as a price increase of the underlying base product), might also help reduce strong (emotional) responses from customers.

3.5.1 Hypothesis Development

Information Status

According to the dual entitlement principle, customers perceive a price (increase) as more fair when it is cost-justified (Campbell, 2007; Vaidyanathan & Aggarwal, 2003). Consumers, however, often fail to consider the costs of a product or service when judging the fairness of its price. As Bolton et al. (2003, p. 485) explain, "people lack accurate mental

models of the costs associated with a product and therefore are unable to generate those cost categories spontaneously". When judging prices, consumers consequently tend to underestimate seller costs, while overestimating seller profits when providing a product or service, leading to perceptions of unfair pricing. Increasing consumers' awareness of the costs the seller is encountering (Bolton et al. 2003) as well as the value their supplier is actually providing (Reinartz & Ulaga, 2008), can hence lead to positive adjustments in price fairness perceptions.

Providing a price, even without charging it, can serve as an anchor and reference price against which future prices are judged. It makes the contribution of the supplier through this service more salient from the start (Reinartz & Ulaga, 2008). Through the lens of distributive justice, prior price information can increase customers' awareness of supplier inputs. Providing price information for a service without actually charging for it, should hence evoke a state of advantaged inequality: Customers know they receive more than they actually give. Clearly, moving a service from free-to-fee from this perceptual starting point should rather lead to a state of equality, as customers now pay for a service they already received for free, and not to a state of disadvantaged inequality, as would be the case without prior price information (i.e. customer inputs are increasing while provider inputs stay the same; see H1 for details). Following this logic, customers should perceive a price increase as more fair when price information is provided from the start. Thus, we hypothesize:

> **Hypothesis 7 (H7):** Customers perceive a service offering that is moved from free-to-fee as more fair when a price for the service has been communicated before than without providing prior price information.

Type of Price Enhancement

Manufacturers aiming to charge for ancillary services, have two general pricing strategies: First, they can move this service from free-to-fee. That is, they can introduce the service without charge and start charging for it to cover costs at a later point in time. Second, they can integrate the new ancillary service in a product offer, which the customer already pays for and then later increase the price of the product offer to cover costs of the additional

service. From a customer perspective, these price tactics narrow down to an additional price tag for the former or an increased price tag for the latter.

From the perspective of distributive justice, both strategies increase the customers' input or costs by the exact same amount. Yet, *Weber's law* (1834) teaches us that perceptions in the change of a stimulus depend on the size of the initial stimulus. Put into our context, a price increase from "0+x" will be perceived differently than a price increase from "y+x". The larger "y" the more negligible "x", to the point where changes in the stimulus are not even captured (e.g. a price increase from USD 978.98 to USD 978.99). In contrast, zero is a special stimulus. From prior research we know that customers assign a special value to free products as they evaluate the price "0" with more affect (Shampanier et al., 2007). This suggests that a price change from "0+x" will be perceived as more noticeable than a price increase from "y+x". Despite increasing the customers' costs by the exact same amount, customers will perceive the increase in their costs/inputs as more severe when the initial stimulus is "0". It follows, that these differences in perceived/relative costs, lead to different perceptions of price fairness: As a price increase from "0+1" is more noticable and thus weighed more heavily than a price increase from "y+x", customers will perceive a price increase as less fair in the former case than in the latter. In short, we expect:

> **Hypothesis 8 (H8):** Customers perceive a service offering that is moved from free-to-fee as more fair when the price of the product is increased from "x" to "x+y" instead of when the price of the service is increased from zero to "y".

3.5.2 Methodology

Study Design and Sample. The presented hypotheses were tested in an experiment with a 2 x 3 full factorial design with *information status* (no additional information versus additional information) and *type of price enhancement* (product price enhancement versus service price enhancement versus free) serving as between-subject factors. The two latter scenarios (*free*, no additional information and *free*, additional information) functioned as control groups for which the service offering is provided for free. Written scenarios of the different service offerings serve as stimuli to manipulate the respective factors.

An online survey was created using the Qualtrics online survey tool. Survey responses for this study were acquired via the Qualtrics Panel both in the United States of America (USA) and the United Kingdom (UK). The target group for this survey were decision-makers or people involved in purchasing within the manufacturing industry. Screening questions at the beginning of the survey aimed to double-check the origin, industry background and relevant decision-making authority of participants. To ensure feasibility and plausibility of the questionnaire, data collection started with a soft launch with 10% of the planned total sample size. The total sample comprises 240 respondents (n = 188 USA respondents and n = 52 UK respondents), who were randomly assigned to one of the six treatment conditions. We paid 32.50 dollars/respondent to Qualtrics. Quality checks were performed to identify speeders and multivariate outliers. The median time to complete the survey was 7.5 minutes in the soft launch sample and 10.36 minutes in the overall sample. Our panel provider presorted participants who took one third below the median time of the soft launch survey duration (under 5.10 minutes) except for two respondents who still gave plausible answers. For the identification of multivariate within-cell outliers we relied on the Mahalanobis distance criterion (Tabachnick & Fidell, 2006). Again, the final decision if participants were deleted from the sample was done manually by verifying their answers regarding plausibility. As Qualtrics strongly pre-selected participants, we were able to keep all respondents, which also helped not to lose any statistical power. In three cases we had to face technical issues as treatment conditions could not be tracked.

The final sample comprises data from 237 participants (33.3 % female) with individual cell sizes ranging from 38 to 41 participants. 89.9 % were aged 59 or younger with a median age range of 40 to 49. Most participants (25.7 %) report to work in companies sized between 50 and 249 employees, followed by another 19.8 % of respondents working in a company with more than 1,000 associates, 19.0 % with ten to 49 staff members, 13.1 % with 500 to 999 employees and 10.5 % with 250 to 499 associates. Only 11.8 % of respondents work in small-sized companies with one to nine employees. Participants indicate that 69.1 % of the buying centers involved in decision processes regarding the procurement of products and services consist of two to four responsible persons. 60.3 % of all respondents report an average experience with purchasing or using purchased services of more than ten years, followed by 19.4 % of participants with an experience of six to ten years and 18.6 % with one

to five years. 33.8 % of our respondents use selected services that optimize their productivity and reduce their entrepreneurial risk on a monthly basis, 25.3 % weekly and 16.9 % even daily. Furthermore, 59.9 % of respondents are involved in decision processes about the procurement of equipment and even make the final decision for a procurement.

Procedure. As in our first study, we used a four-part structure for this study. In the first section, respondents were presented with some screening and introductory questions. In particular, we screened out participants who are located outside the United States of America or the United Kingdom, are not working in the manufacturing industry, are not involved in procurement and/or service decisions at their company and finally, we excluded participants, who are not participating in purchase decisions frequently. As a warm-up, participants were asked about the type and amount of their last equipment purchase from one of their manufacturing suppliers. Congruent with *Study 1*, we put respondents into a concrete and realistic service scenario by providing them with service examples in the areas of *Operations Support*, *Equipment Support*, *Business Support*, and *Digital Services* (see Appendix C Figure C.1). To appeal to a broader group of participants from different industries we decided to use a higher-level service description independent of a specific industry. Further, we asked them which of the services they regularly need and how often.

In the second part of the questionnaire respondents were randomly assigned to one of the six service scenarios of the 2 (no additional information versus additional information *information status*) x 3 (product price enhancement versus service price enhancement versus free *type of price enhancement*) study design. The scenarios referred to the service examples provided in the first part of the questionnaire. We simulated a services-for-free-situation and how the price of the equipment or service will evolve in the future (product price enhancement versus pricing the services separately versus free), whereas the free-to-free scenarios are used as control groups. To exclude potential confounding effects of the price level, no numerical price tag was provided. Instead, we just pointed to a percentage number (10 %) of the equipment price. Further, we either gave additional information about the actual value of the services that were provided up until now for free or left out this information completely (no information versus additional information *information status*). An overview of all scenarios can be found in Appendix C Table C.1 After each scenario, participants were asked how fair they perceive the presented service offering in general and the described

offering and its payment model in particular and how much they would be willing to pay for it. Besides their reactions regarding several perceptual dependent measures like satisfaction, their purchase intentions, and loyalty intentions were captured.

Within the third part of the questionnaire, and analogous to *Study 1*, several additional measures were collected to serve as potential covariates within our analyses.

In the fourth and final part of the questionnaire we asked respondents regarding some individual and firm-specific information, including size and turnover of their company and its buying center, their current position and experience and some general sociodemographic questions.

Dependent measures. As this study complements and expands our previous work of *Study 1*, the main dependent variable was also the perceived fairness of the described scenario in general and the perceived fairness of the described offering and its payment model in particular. Again, all items were measured with seven-point Likert scales.

Other measures. We included further measures in our study to examine alternative explanations of the observed effects. Particularly, we included trustworthiness in the service provider and integrity of the service provider as additional dependent measures.

3.5.3 Analysis and Results

Construct validity. In accordance with *Study 1*, we tested the construct validity and reliability of all central variables of this study. The tests for all (dependent) variables are satisfactory.

Model Assumptions. Following *Study 1*, independent *t*-tests and ANOVAs, which make out the main part of the analyses also in *Study 2*, underlie the assumptions of interdependence of observations between groups, normality, and homogeneity of variances (e.g., Field, 2012; Warner, 2013)

Results. First, results of *Study 2* replicate our findings of *Study 1*. Accordingly, results of an independent *t*-test show that customers perceive a service offering as less fair when a manufacturer starts to charge for it (free-to-fee) than when the manufacturer keeps the service

offer free of charge ($n_{free\text{-}to\text{-}fee}$ = 159, $M_{free\text{-}to\text{-}fee}$ = 3.89, $SD_{free\text{-}to\text{-}fee}$ = 1.75; n_{free} = 78, M_{free} = 5.45, SD_{free} = 1.33, t(195.70) = -7.63, p = .000). The assumption of homogeneity is not met for this data as indicated by Levene's test of homogeneity of variances (F(1, 235) = 10.26, p = .002).

In H7 we postulate that informing customers about the actual value of a new service offer can serve as a potential lever to ease moving services from free-to-fee. In particular, we suspected that putting a price tag on these value-added services when they are still given away for free, leads to higher fairness evaluations when moving them from free-to-fee later on than without providing prior price information. Although mean values are in the expected direction, results of an independent t-test cannot confirm these assumptions (n_{noinfo} = 80, M_{noinfo} = 3.85, SD_{noinfo} = 1.77 versus $n_{addinfo}$ = 79, $M_{addinfo}$ = 3.92, $SD_{addinfo}$ = 1.75). The independent t-test does not provide enough confidence in the effect (t(157) = -.27, p = .791). In short, these findings suggest that a priori information about the price of the services does not impact fairness perceptions (cf. Figure 3.15).

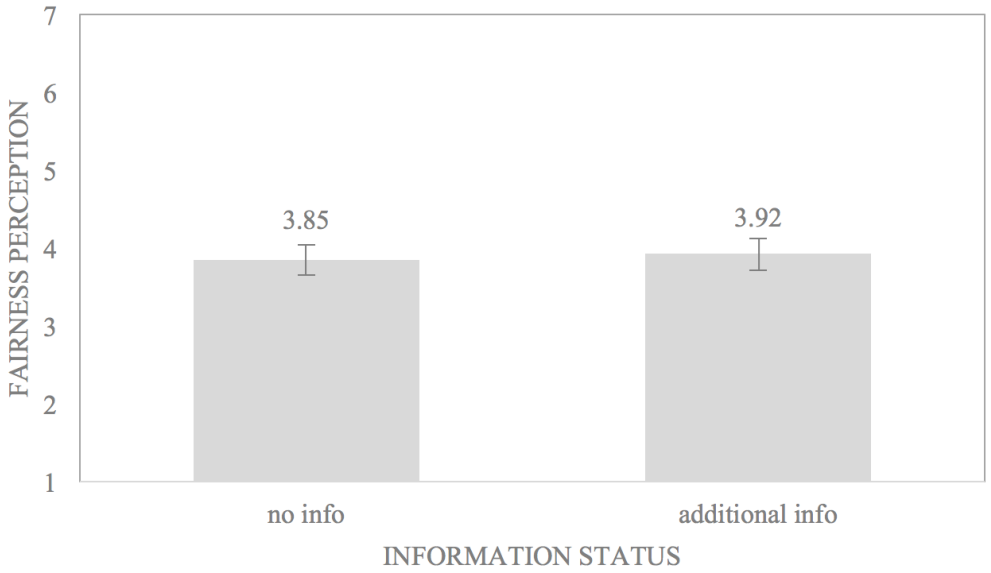


Figure 3.15: Mean differences in perceived fairness for information status.

In H8 we propose whether introducing a service price for a value-added service is a better strategy in terms of customers' fairness perceptions than increasing the hybrid bundle, which in practice means increasing the price of the already existing base product to which the value-added service is linked. In particular, we postulate that increasing the base product's price instead of moving the value-added services from free-to-fee results in more positive

fairness evaluations. In support of these assumptions, results of an independent *t*-test show that participants perceive a service offering that is moved from free-to-fee as more fair when the price of the underlying base product is increased from "x" to "x+y" instead of when the price of the service is moved from zero to "y" ($n_{productprice}$ = 78, $M_{productprice}$ = 4.17, $SD_{productprice}$ = 1.57; $n_{serviceprice}$ = 81, $M_{serviceprice}$ = 3.62, $SD_{serviceprice}$ = 1.89, $t(153.66) = 2.00$, $p = .047$). The assumption of homogeneity is not met for this data as indicated by Levene's test of homogeneity of variances ($F(1, 157) = 4.00$, $p = .047$). Figure 3.16 visualizes these results.

Figure 3.16: Mean differences in perceived fairness for type of price enhancement.

Alternative explanations and further insights.

The following section provides additional explanations and background information for hypotheses from *Study 1* that could not be confirmed. In addition, results are presented here that were not hypothesized but nevertheless appear interesting and important.

Our results could not find sufficient support for our H7, i.e. prior price information easing a move from free-to-fee. Against our expectations, making the customer aware of the value he is actually consuming without paying for does not induce more positive fairness evaluations and therefore higher willingness to pay, higher levels of customers' purchase and loyalty intentions. To shed more light on this unexpected finding, we analyzed how the information status might affect customers' perceptions and beliefs about the provider. As

trustworthiness has already played a leading role as mediator in *Study 1*, we examined how the information status affects perceptions of the provider's trustworthiness and in turn their reactions to price increases when services are moved from free-to-fee. Again, for mediation analysis we followed the procedure suggested by Preacher and Hayes (2004; 2008) using a bootstrap test (5,000 resamples). Results reveal that one specific trustworthiness item leads to highly significant results in particular. Here we asked participants how honest they would rate the provider. Within our mediation analysis the overall indirect path from information status to customers' perceived fairness through trustworthiness in the service provider is significant (b = -.35), with a 95 % confidence interval excluding zero [-.69, -.07]. The negative effect stems from the fact that the categorical independent variable information status was coded as 1 = *no information* and 2 = *additional information* resulting in a significant negative effect of information status on trustworthiness in the service provider (a = -.66, $t(157)$ = -2.48, p = .014). Together with the positive effect of trustworthiness in the service provider on customers' perceived fairness (b = .53, $t(156)$ = 7.40, p = .000) the overall indirect effect is then negative. Ignoring the existence of trustworthiness in the service provider as a mediator, the direct path between information status and perceived fairness is not significant (c = .43, $t(156)$ = 1.74, p = .084), proving an indirect-only (full) mediation (Zhao et al., 2010). The total effect of information status on customers' perceived fairness is positive but not significant (b = .07, $t(157)$ = .27, p = .791). In summary, we conclude that respondents in the enhanced information status-condition surprisingly react with significantly lower trustworthiness beliefs in terms of the service provider's honesty and therefore significantly lower perceptions of fairness than when they are not given additional information in the form of a price tag before moving services from free-to-fee (cf. Figure 3.17).

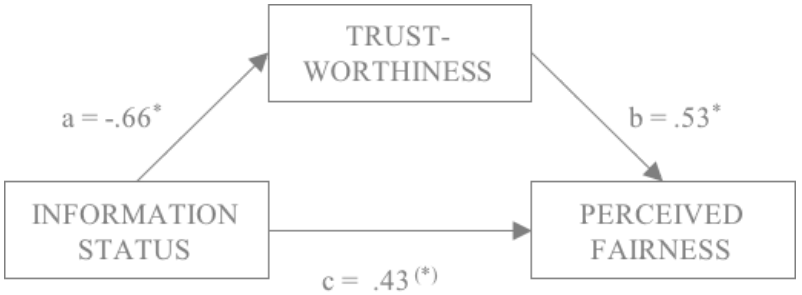


Figure 3.17: The mediating role of trustworthiness on the relationship between information status and perceived fairness.

A similar effect can be seen when considering integrity as a potential mediator. Integrity as one of three key dimensions of trust is related to the trustor's perception that the trustee will hold on to specific principles or rules of exchange acceptable to the trustor (e.g. Bhattacherjee, 2002). One specific item of integrity leads to marginally significant results in this study. It refers to customers' perceptions if the provider of the service offering will always stick to its word. We examined if integrity plays a decisive role when putting a price tag on services that are given away for free as an effective lever to mitigate potential negative fairness perceptions when services are moved from free-to-fee afterwards. Here, we conducted a mediation analysis analogous to above. Results show that the overall indirect path from information status to customers' perceived fairness through integrity is marginally significant (b = -.25), with a 90 % confidence interval not containing zero [-.51, -.02]. As the categorical independent variable information status was coded as 1 = *no information* and 2 = *additional information,* the relationship between information status and integrity is negative (a = -.46, $t(157)$ = -1.79, p = .075). Together with the positive effect of integrity on customers' perceived fairness (b = .54, $t(156)$ = 7.18, p = .000), the overall indirect effect is then negative. Ignoring that integrity as a mediator exists, the direct path between information status and perceived fairness is not significant (c = .32, $t(156)$ = 1.32, p = .189), providing evidence for an indirect-only (full) mediation (Zhao et al., 2010). The total effect of information status on customers' perceived fairness is positive but not significant (b = .07, $t(157)$ = .27, p = .791). Thus, we conclude that respondents that are informed about the value of the free services they are actually consuming before being charged even react with lower perceptions of the provider's integrity and therefore significantly lower perceptions of fairness than when the information status is kept constant (cf. Figure 3.18).

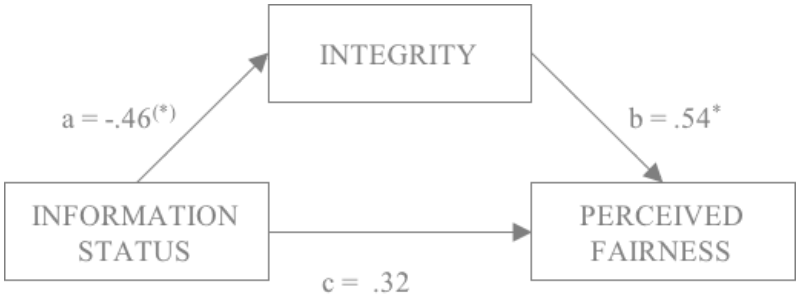


Figure 3.18: The mediating role of integrity on the relationship between information status and perceived fairness.

Other variables, including affect or benevolence, did not provide additional insights as to why information status does not serve as a successful lever when moving services from free-to-fee.

3.5.4 Summary of Findings

Besides replicating the findings of *Study 1* that moving services from free-to-fee results in negative fairness perceptions for customers in general, within the present study we examined two strategies, which could potentially ease the process of moving value-added services from free-to-fee in general and customers' perceptions of price (un-)fairness in particular: First, cueing customers' value salience by providing price information on value-added services prior to charging for them. Second, using a price increase of the existing base product to offset the cost for a new service rather than moving the service itself from free-to-fee.

From our findings we must conclude that providing prior price information cannot help ease price unfairness perceptions when moving value-added services from free-to-fee. Instead of allowing customers to generate appropriate mental models of the costs associated with the prior free service, indications are that the a priori price information triggers customers' distrust with the provider. Accordingly, we find that prior price information raises customers' concerns that the provider is dishonest and will not keep his word. These beliefs in turn result in customers' lower perceptions of fairness when the provider starts to charge for the service.

While the information status did not result in the desired effect, findings of our study indicate that increasing the base product's price to which a service is linked rather than start charging for a value-added service, may be an effective strategy for providers. This finding supports prior notions that zero is a special price and as such, transitions from zero to even small positive numbers are not perceived to be linear (Shampanier et al., 2007). A difference from price zero to "x" is hence perceived as more severely as the same increase from price "y" to price "y+x" (as suggested in *Weber's law*).

The finding that increasing the base product's price is considered more fair than introducing a separate service price further suggests that customers are still very

product-centric. Especially for premium providers, customers tend to consider a value-added service as part of the product, i.e. a product-related service. Interviews with premium customers support this idea. Accordingly, some reported that they already pay a price premium for the underlying base product. As a result they expect the services to be integrated within this product price. This highlights that the challenge manufacturers face when introducing services does not only relate to perceptions of prices but also to the perception of the product itself, that is, as a product rather than an integrated bundle.

3.6 General Discussion

Taken together, findings of this research demonstrate that moving value-added services from free-to-fee is no easy task for manufacturers. In fact, many of the examined levers to ease this process did not show the intended effects, be it an enhancement in service levels or the provision of a priori price information. Nonetheless, this research has made significant progress to make the pricing of value-added services for manufacturers more of a science, and less of an art by examining customers' perceptions of price fairness and reactions towards the provider. Important theoretical and managerial implications will be discussed in the following.

3.6.1 Research Implications

The present research contributes to existing research on servitization in general and behavioral pricing in industrial markets in particular:

First, we are highlighting a very central challenge within the context of servitization processes: the move of value-added services from free-to-fee. This transition is a necessary step for turning a profit from a manufacturing company's service business "simply by charging for what they already do" (Reinartz & Ulaga, 2008, p.92). In contrast to previous research, we are making a valuable contribution by not only explaining *why* service-led growth is beneficial but by providing insights into *how* to counter the practical challenges involved. This contributes to the call for more research on how goods-centric firms can

successfully implement service growth strategies in business markets and capture more value from industrial services (e.g. Reinartz & Ulaga, 2008; Steiner et al., 2016).

Second, findings of this research shed light on a widely neglected perspective in service transformation research: the customer. As mentioned above, despite the managerial importance of value-added services and the need to generate profits from such, little is known about how transitioning such services from free-to-fee can be managed successfully – and that is, without hurting customers' trust in and positive perceptions of the manufacturer. This research is among the first to examine customers' perceptions and reactions when manufacturers switch their services from free-to-fee. Through the lens of the principle of distributive justice, we find that moving services from free-to-fee disturbs the balance between inputs and outcomes and therefore results in perceptions of unfairness. Moreover, it demonstrates that also commonly used transitioning strategies, like the enhancement of a service level or flat-rate pricing, can undermine customers' trust in the provider and even lead to unintended perceptions of price unfairness. Finally, our study provides evidence that customers' perceptions of price (un)fairness can have adverse effects on their willingness to pay, as well as their purchase and loyalty intentions.

Third, the present research also extends prior knowledge on pricing and price fairness. While much of the research on price fairness has been conducted in the B2C context, the present research is among the first to prove that such perceptions also assume a central role in B2B relationships. In fact, findings of this research show that many theoretical underpinnings and behavioral biases commonly found in consumer research also transfer and apply to business customers. With our study we could confirm that also in the context of B2B, free is an "immensely strong lure" (Ariely, 2009, p. 80; Shampanier et al., 2007) and that industrial customers react with strong perceptions regarding price (un)fairness and the provider's trustworthiness when services are moved from free. Our findings clearly obtain evidence of how challenging it is for manufacturers to depart from this special stimulus zero ("0+x") and that this move is clearly different to a standard price increase ("y+x") or to a situation where the service has already been priced right from its introduction. As soon as customers get used to so-called freebies, charging for services gets tough even in a B2B surrounding (Ulaga & Michel, 2018).

As a consequence, very few levers can actually help to make the move from free-to-fee bearable for customers. The most effective one, however, lies in the field of pricing. We already know from extant literature that "pricing is a skill" (e.g. Hinterhuber & Liozu, 2012). And also in the context of how to move services effectively from free-to-fee, we have proven this to be the key to success. Our findings demonstrate that the choice of the right pricing scheme mitigates customers' unfairness perceptions when services are suddenly charged for. We draw on extant research on flat-rate and pay-per-use pricing and add two theoretical lenses, namely *choice bracketing* and *paying for confidence*, to explain the positive effect of offering services individually at a pay-per-use pricing scheme instead of an all-in-one package at a flat-rate when moving services from free-to-fee. This underlines once more that the *presentation format* (offering the services bundled or individually) is not as relevant as choosing the right *tariff choice* (offering the services at a pay-per-use option or at a flat-rate) for a reasonable pricing decision in the context of moving services from free-to-fee.

Finally, we know that most of the existing research within industrial markets in general, and regarding a manufacturer's service transformation process in particular, is primarily of a theoretical and conceptual nature. Thus, from a methodological perspective, the present study contributes to the service and industrial marketing domain by conducting quantitative empirical research and validation on the topic of moving services from free-to-fee. This allowed us to extensively test customer reactions to moving services from free-to-fee and to evaluate different levers to mitigate adverse customer reactions on a large-scale basis.

3.6.2 Managerial Discussion

Especially with improvements in technology and increasing access to data, manufacturers have ample opportunities to offer value-added services to their existing product portfolio. These services can range from traditional financial services to more advanced remote monitoring or repairs. Regardless of the service type, manufacturers are faced with the challenge to ease existing customers into using the new service while covering costs or even making a profit at the same time. All too often manufacturers seemingly solve this issue by introducing these services for free, ultimately kicking the can of pricing these services down the road.

The present research shows that this "can down the road" strategy might not be the most preferable strategy for manufacturers. Through the lens of the customer, managers can see that this approach is always perceived as unfair and can thus become a threat to long-term customer relationships, in the sense that customers' willingness to pay, purchase intentions and ultimately customer loyalty decline. Instead of moving services from free-to-fee, the better strategy for managers is to put a price tag on their companies' services as soon as they are introduced on the market as it is hard to turn back the wheel once customers are used to free services (Ulaga & Michel, 2018). In practice, however, many manufacturers are already beyond this point as they already offer services for free for quite a while and are now confronted with how to price their services that they already offer free of charge.

In fact, the one strategy that customers perceived as most fair in our studies was the increase of the price of the base product rather than the introduction of a separate price for a service that was initially introduced for free. This shows that not only manufacturers but also their customers are still considerably product-centric. Thus, customers often consider a new service as part of the underlying base product, especially so for higher-priced premium products or providers. Today, increasing the base product price may hence be the most preferable strategy. Tomorrow, however, when both providers and customers have become more attuned to service offers and their value for industrialized products, pricing services separately may well be a suitable strategy. After all, this transition from product to service centricity has benefits beyond individual pricing strategies, such as improved customer loyalty as results of this research already indicate.

However, if manufacturers finally decide to take the step towards servitization and the often associated move from free-to-fee, we know from practical experience that many managers want to avoid tedious price negotiations (e.g. Steiner et al., 2016) and thus offer and price all services in one all-inclusive package at a flat-rate. However, based on the results of our study, we can recommend managers to start slowly by pricing individual services at a pay-per-use tariff. Alternative strategies to counter customers' price (un)fairness perceptions, such as making the value of the free service salient through prior cost information or increasing the service level with the introduction of a price, proved unsuccessful and even raised concerns and suspicions among customers.

Our findings highlight two aspects that are important for managers to consider: First, and as already mentioned, perceptions of fairness play a central role when it comes to understanding customers' reactions to service price introductions. Second, our investigations reveal that managers also must keep an eye on customers' perceptions of the provider's trustworthiness and specific sub-dimensions of this construct, like benevolence and affective responses. Last but not least, our results strongly imply that it is important that the provider appears honest and stands by his word. Thus, fairness and trust should be regarded as KPIs when services are moved from free-to-fee.

3.6.3 Limitations and Future Research

This research is not without limitations and several avenues for future research remain. First, while this research demonstrates the importance of understanding the customers' perspective, the role of people within the organization for the success of moving services from free-to-fee needs to be considered as well. From prior research and our qualitative pre-study we know that resistance towards moving services from free-to-fee arises not only from the customer side. Especially salespeople are hesitant because they fear pushback from customers or losing an important selling argument for their manufacturer's premium-priced product. In particular, future research could examine how manufacturing companies can facilitate the free-to-fee transition from within the organization, for example by providing their sales people with appropriate training, sales arguments or incentives.

Another possible limitation of our research is the setup of our scenarios for the experiments. First, our scenarios did not include price information. To avoid anchoring a particular price that might be generally considered as too high or too low by participants with varying levels of purchasing power, we refrained from using precise prices and provided generic price information in varying pricing schemes instead. However, as both internal and external reference prices are known to affect consumer judgments (e.g. Kaicker, 1995), future research could examine the effect of the salience of such references as well as the framing of particular prices in the context of moving a service from free-to-fee.

Further, our scenarios were placed in a premium provider setting and particularly invited existing customers of a premium provider to participate in the study. As our interviews

demonstrate (cf. section 3.2), these customers expect add-ons and continuous service enhancements and consider these part of a premium offer. These expectations clearly could have affected our results and partly explain why customers perceived pricing individual services as unfair (they expect this to be included), while considering a general price increase of the hybrid bundle as acceptable (something that can be expected in a premium provider setting). Future research should hence more clearly examine if and how our findings extend to other provider categories.

Moreover, our scenarios in *Study 1* focused on one particular service in one particular industry: the anchoring division of a large European tool manufacturer. Clearly, effects might be different when examining other types of services (e.g. remote services) or non stand-alone services (e.g. financial services). Future research could hence examine individual service characteristics, such as the innovativeness of a service (as suggested in Kuester et al., 2015), and determine the most effective pricing strategy – and that is not only a flat-rate or pay-per-use tariff – for particular services. As Ulaga and Michel (2018) suggest, this would help managers answer the most pressing question for any new service in the free-to-fee transition: “Bill it, Kill it, or keep it free?”.

Finally, to further increase the external validity and generalizability of our findings, future research could examine the proposed effects in a real world setting and with varying conditions. While our research already captures the reactions of real-world customers of a manufacturing firm to aforementioned scenarios and thus provides first evidence for the importance of price fairness perceptions when moving services from free-to-fee, effects are likely to be even stronger when examining customers’ responses to real-world service transition processes.

Although these limitations must be kept in mind when considering our results and implications, this study provides important new insights for managers and scholars alike, and we encourage more research on the topic of how to capture more value from industrial services in general, and how to move services from free-to-fee in particular.

4 Conclusions and General Discussion

The central objective of this thesis ties up with the empirical research deficit explained in the introduction. Industrial firms venturing into services is a common phenomenon in B2B markets. However, companies are often unable to monetize such services, thus incurring high costs of service provision without benefiting from revenue generation in return. To address this critical but little-studied problem, we therefore investigated *how* industrial firms can transform existing free services into for-fee offerings, utilizing different research designs (i.e., TIU approach, experiments) and samples (e.g. customers, company-internal experts). Besides, we illuminated this topic from different conceptual angles (i.e. dual entitlement principle, the principle of distributive justice and equity theory, and price fairness) across three studies within two research projects. Findings of this thesis suggest that moving value-added services from free-to-fee is a challenging task for industrial firms with obstacles that arise both on the customer side, but also within the companies themselves. This research has made significant progress to thoroughly classify and characterize truly free services and to investigate various actions, activities and levers in their potential to mitigate adverse effects (especially customers' fairness perceptions) of moving services from free-to-fee. A summary of key findings will be presented and important managerial and theoretical implications will be discussed in the following.

4.1 Summary of Key Findings

The overarching research question of this thesis is *how* to transform free services into for-fee offerings. While in corporate practice this transition is often completely avoided or a trial-and-error approach is chosen, this thesis shows that different levers and perspectives are necessary to move services from free-to-fee successfully. The following summaries of *Project I* and *Project II* provide concrete insights into this thesis' key findings:

Project I investigates how industrial firms can transform existing free services into for-fee offerings. Thus, this study delivers a precise definition and characterization of truly free industrial services. Based on the internal (low versus high) and external challenges (low

versus high) that firms face in free-to-fee transformations, we develop a typology classifying free services into four distinct categories: Front-runners, Tugs of War, In-house Shackles, and Dead Ends. For each category, empirical illustrations are provided and critical actions are identified that firms deploy to successfully implement free-to-fee transformations along the dimensions of structures, processes, people, and rewards. Thus, we offer guidance on how to overcome both external and internal challenges. Our findings demonstrate that free-to-fee transformations of industrial services are not isolated marketing, sales, or pricing activities but require a concerted effort among all organizational functions involved.

Project II highlights the challenges industrial companies face when departing from price zero and clearly demonstrates that transitioning free services into for-fee offerings triggers customers' perceptions of unfairness.

Project II - Study 1 reveals that these unfairness perceptions are not only lower in the constantly free-condition but also in the constantly fee-condition compared to the free-to-fee condition. The fact that the transition from free-to-fee is more than challenging also becomes evident when examining various levers, which would have the potential to mitigate customers' adverse reactions to it. First, results demonstrate that enhancing the service level with a move from free-to-fee cannot directly ease unfairness perceptions. Additional investigations show, however, that a service level enhancement may indirectly affect customers' fairness perceptions through improved perceptions of the provider's trustworthiness and benevolence as well as positive affective responses. Second, this research suggests a pay-per-use tariff for individual services as an appropriate pricing tactic when moving services from free-to-fee. Whereas manufacturers often choose flat-rate pricing when starting to price their add-on services, prior research suggests that a pay-per-use tariff does not only increase customers' awareness of the individual value of the add-on service, it also enhances their flexibility and confidence (Lambrecht & Skiera, 2006) to not overpay when using the service. We advance this research by highlighting the effect of this flexibility on customers' fairness perceptions. Finally, this study illuminates the importance of fairness perceptions on customers' behavioral intentions, especially on their willingness to pay and their purchase and loyalty intentions.

Project II - Study 2 replicates the findings of *Study 1* that transitioning services from free-to-fee results in negative fairness perceptions for customers. Further, it investigates additional levers which are often used in practice to ease the process of moving value-added services from free-to-fee in general and customers' fairness perceptions in particular. First, this study concludes that cueing customers' value salience by providing price information on value-added services prior to charging for them cannot help ease price unfairness perceptions. Instead of allowing customers to generate appropriate mental models of the actual costs for the services they are getting for free, results show that providing prior price information triggers customers' distrust with the provider. Accordingly, it raises customers' concerns that the provider is dishonest and will not keep his word, which in turn, results in lower perceptions of fairness when the provider starts to charge for these services. Second, findings of this study indicate that increasing the base product's price to which an add-on service is linked is considered as more fair than introducing a separate service price. This demonstrates that industrial customers are still very product-centric. Customer interviews reveal that especially for premium providers, customers tend to expect that the service cost is already covered within the premium product price they already pay. This highlights that the challenge manufacturers face when introducing services does not only relate to perceptions of prices but also to the perception of the product itself, that is, as a product rather than an integrated bundle.

4.2 Research Implications

This thesis makes a number of important contributions to existing literature and advances theoretical knowledge in several ways:

Both projects and thus all three studies are complementing prior research on service-led growth in industrial markets (e.g. Eggert et al. 2014; Macdonald et al. 2016; Oliva and Kallenberg 2003; Ulaga and Reinartz 2011). Taking the literature on industrial service growth as a starting point, this thesis sheds light on a central but largely neglected topic in previous research: the move of value-added services from free-to-fee. Many industrial firms end up providing a large number of services free of charge (Anderson and Narus 1995; Michel 2014; Witell and Löfgren 2013), however, miss out on turning a profit from their service business

"simply by charging for what they already do" (Reinartz & Ulaga, 2008, p.92) either because customer organizations are unwilling to pay or suppliers fail to exploit profit-making opportunities (Indounas 2009; Meyer, Shankar, and Berry 2018; Ulaga and Michel 2018). While scholars have begun to explain the phenomenon of free services in business markets *per se* and *why* transforming free services into revenue and profit sources is necessary, this thesis is making a valuable contribution by providing deep insights into *how* to successfully manage this process and *how* to counter the practical challenges involved.

All projects of this thesis contribute to existing research on the topic of free services in general by investigating it in more detail in the B2B sphere. Former, the subject of dealing with free services has been mainly addressed in the B2C context, or even more precisely: in online customer relationships and digital services or often in conjunction with "freemium" business models (Bond et al. 2019; Lambrecht and Misra 2017; Pauwels and Weiss 2008). This environment, however, is very different from industrial market contexts, where strongly rational decision-makers are assumed and supplier-customer interactions are mostly long-term in nature. The question was therefore to what extent assumptions and results from previous studies on free services can be transferred to the B2B context. This thesis demonstrates that also within industrial buyer-seller relationships "zero is a special price" (Shampanier et al., 2007), resulting in internal and external challenges for firms and psychological barriers and adverse effects for customers that need to be overcome.

With these common foci as a joint basis the two projects of this thesis complement each other very well, yet each sets different priorities:

First, both projects contribute to the question of *how* to move service from free-to-fee in B2B by utilizing different research designs. *Project I* focuses on integrating empirics with existing literature to offer further conceptual development by adopting a TIU approach (Zeithaml et al., 2020), which results in a precise definition and characterization of truly free services based on an extensive investigation of internal and external challenges that arise when services are being priced. *Project II* contributes to the service and industrial marketing domain by conducting quantitative empirical research and validation on the topic of moving services from free-to-fee. This allowed us to extensively test customer reactions to moving

services from fee-to-fee and to evaluate different levers to mitigate adverse customer reactions on a large-scale basis.

Second, while *Project I* contributes to the services and industrial marketing domain by developing a more nuanced understanding in the form of a typology of truly free services considering both internal and external challenges simultaneously when transforming services from free-to-fee, *Project II* concentrates on the customer perspective and their psychological responses to a free-to-fee switch and, more specifically, price fairness perceptions when moving services from free-to-fee:

Project I acknowledges that a "one size fits all" strategy is not appropriate when moving services from free-to-fee. Thus, a service typology is developed to help provide granular insights into such a complex phenomenon in general and avoid over-simplification and over-generalizability (e.g. Ulaga and Reinartz, 2011). The typology of truly free services within *Project I* of this thesis enables a consideration of the heterogeneous nature of free services based on internal and external challenges and offers the opportunity to use targeted and effective recommendations for action and activity tailored to the respective type of free service.

Project II is among the first to examine the customer perspective, their perceptions and reactions when manufacturers switch their services from free-to-fee. Through the lens of the principle of distributive justice, this research shows that moving services from free-to-fee disturbs the balance between inputs and outcomes and therefore results in perceptions of unfairness. This research confirms that also in the context of B2B, free is an "immensely strong lure" (Ariely, 2009, p. 80; Shampanier et al., 2007) and that industrial customers react with strong perceptions regarding price (un)fairness and the provider's trustworthiness when services are moved from free. Further, this project provides evidence that customers' perceptions of price (un)fairness can have adverse effects on their willingness to pay, as well as their purchase and loyalty intentions. Thus, this thesis not only contributes to equity theory and the principles of distributive justice in general, but also extends prior knowledge on pricing and price fairness (e.g. Kuester et al., 2015; Malc et al., 2016) as well as behavioral pricing theory (e.g. Koschate-Fischer & Wüllner, 2017).

Finally, both projects and all three studies extensively enrich current free-to-fee research by providing concrete recommendations for action on *how* to successfully manage this transition from free-to-fee. These are described in more detail within the managerial implications section below.

4.3 Managerial Discussion

The trend of service-led growth is a phenomenon of growing interest for most traditional manufacturers. Especially with improvements in technology and increasing access to data, manufacturers have ample opportunities to offer value-added services to their existing product portfolio. The task here is to establish the often product-related services in such a way that they are not perceived as part of the underlying base product and as add-ons, but can be marketed and priced independently. This is often difficult, especially when selling premium products and the associated services, where customers already pay a price premium for the product itself. All too often manufacturers avoid the challenges involved and either continue to offer their services free of charge or choose a trial-and-error approach, which may lead to negative reactions from their customers.

Thus, the findings of this thesis offer important managerial implications for industrial firms that are interested in transforming their free services into revenue and profit sources and who strive to approach this transformation in a structured way and without jeopardizing their buyer-seller relationships.

Project I is the first study to document the combination of internal and external challenges faced by each type of free service in a free-to-fee transformation. This nuanced understanding helps suppliers to select those free services with the highest free-to-fee transformation potential (e.g. “Front-runners”), understand the service-specific barriers to a successful transformation and provide managers with concrete initiatives along the dimensions of structures, processes, people, and rewards to overcome the respective challenges. Managers must take into account that free-to-fee transformations of industrial services are not isolated marketing, sales, or pricing activities but require a concerted effort among all organizational functions involved. For instance, they must be aware that the people dimension – i.e., enhancing their service-related understanding, expertise, and capabilities –

plays a crucial role in the free-to-fee conversion of almost all types of existing free services. What changes is the degree of intensity as well as the focus on specific skills. For example for "Front-runners", suppliers focused on enhancing their frontline personnel's service exchange-related skills through regular guidance and support, whereas for "In-house Shackles", training and education to increase service-related knowledge and capabilities were more prevalent.

Project II provides managers with the knowledge that through the lens of their customers, moving services from free-to-fee is always perceived as unfair and as a result, customers' willingness to pay, purchase intentions and ultimately customer loyalty are at risk. Basically, instead of moving services from free-to-fee, the better strategy for managers is to put a price tag on their companies' services as soon as they are introduced on the market, or, if manufacturers already offer services for free, to increase the base product's price to which an add-on service is linked instead of introducing a separate service price. However, if manufacturers finally decide to take the step towards service-led growth and the often associated move from free-to-fee, the most effective lever lies in the choice of the right pricing scheme. Here, research suggests a pay-per-use tariff for individual services as an appropriate pricing tactic. Further, while enhancing the service level can only indirectly ease unfairness perceptions through improved perceptions of the provider's trustworthiness and benevolence as well as positive affective responses, cueing customers' value salience by providing prior price information cannot help ease price unfairness perceptions but triggers customers' distrust with the provider instead.

4.4 Outlook and Integrative Roadmap

The present thesis impressively illustrates the importance of additional research when it comes to providing scholars and managers alike with approaches of *how* to move services from free-to-fee in B2B. While this work already offers various deep insights into how truly free services are defined, what types of free services exist, how customers react to a forced free-to-fee switch, and what actions, activities and levers can be applied to still manage this move successfully, several avenues for future research remain.

For this purpose, the unique findings of the two major projects of this thesis should be mutually integrated within future research to provide scholars and managers alike with a comprehensive manual full of levers to successfully manage the transition of free services into for-fee offerings. This aims to eliminate the limitations of the individual studies to a large extent and takes up the proposals for future research that have already been identified in the respective research projects:

Project I offers a precise typology of truly free services and highly recommends a more nuanced and targeted deployment of actions and activities to counter the internal and external challenges industrial firms face when moving services from free-to-fee. However, it only concentrates on investigations of supplier firms, missing out on the customers' perspective. From a methodological perspective, as this project is conceptual in nature, validating the elaborated results in the context of a large-scale quantitative study would further enrich future research.

Project II provides concrete insights into customers' psychological reactions, and more precisely, their (un)fairness perceptions when services are moved from free-to-fee. By conducting quantitative empirical research, this work also presents various levers that help to mitigate adverse customer reactions when being confronted with an unexpected free-to-fee switch, validated on a large-scale basis. What is lacking, however, is the differentiated consideration depending on the type of free service, which is recommended in *Project I*.

Integrating these two projects leads, to a large extent, to a dyadic perspective on the phenomenon of a free-to-fee switch. While *Project I* provides deep insights into the supplier perspective, *Project II* illuminates the customers' response to such a transition. Therefore, customers' fairness perception has proven to be a suitable metric to measure the success of a free-to-fee transition as it functions as a prerequisite for decisive behavioral intentions like customers' willingness to pay, purchase and loyalty intentions. If we now test the levers examined in *Project II* differentiated according to the individual free service types revealed in *Project I*, managers and scholars alike would obtain an even more nuanced and valid picture of the free-to-fee topic and ways how to manage this successfully.

Pricing Schemes. Within *Project II* this thesis challenges flat-rate pricing as a common pricing tactic used by various manufacturers when moving services from free-to-fee. Firms

often want to avoid tedious price negotiations (e.g. Steiner et al., 2016) and as interviews with company-internal experts reveal, many firms think it is easier to start pricing free services by offering them within a package for a flat-rate. However, drawing from equity theory, this thesis shows that an individual pay-per-use pricing tactic is more appropriate when moving services from free-to-fee. If one now integrates the findings from *Project I* that different types of free services based on different levels of internal and external challenges exist, a more nuanced understanding could emerge: For instance, for *Tugs of War* that are characterized by high external challenges (e.g. customer resistance) and low internal challenges (e.g. resistance from the product-sales force), the above results may remain valid as a pay-per-use tariff enhances customers' flexibility and confidence (Lambrecht & Skiera, 2006) to not overpay when using the service and additionally results in higher perceptions of fairness. In contrast, for *In-house Shackles* in which external hurdles appear to be relatively low and internal hurdles relatively high, choosing a flat-rate pricing might support the providers and make it easier for them to move their services from free-to-fee. Additionally, further research should examine all other free service types and a broader variety of tariff choices and pricing tactics. This would also answer calls for more research, for example on the topic of customized pricing (e.g. David, Bearden & Haws, 2017) or personalized pricing (e.g. Elmachtoub, Gupta & Hamilton, 2021).

Service Level. *Project II* states that an enhancement of the service level in combination with a move from free-to-fee can indirectly ease customers' unfairness perceptions through improved perceptions of the provider's trustworthiness and benevolence as well as a positive affective response. For this reason, enhancing the service level could be an appropriate lever for truly free services that are characterized by high external challenges as here customers are hard to convince and thus a service level enhancement might first enhance their perceived trustworthiness in the provider and thus alleviate their negative reactions to a free-to-fee switch. This applies especially for customers who are rather price conscious (cf. *Project II*). We know from *Project 1* that for *Tugs of War* providers often systematically enhance the service level to optimize their customer value so that they can clearly show their customers the benefit they get. Thus, a supplier's sales and service personnel are provided with a clear roadmap in hand when approaching their customers. Even for services with high internal challenges this measure might be beneficial because enhancing the service level provides the

sales force with strong arguments as not only costs for customers increase, but also their benefits. In summary, future research should examine if a service level enhancement can mitigate customers' unfairness perceptions when moving services from free-to-fee especially for *Tugs of War* but also for *In-house Shackles*.

Information Status. As already noted within *Project II*, this thesis must conclude that providing prior price information cannot help ease price unfairness perceptions when moving value-added services from free-to-fee, but triggers customers' distrust with the provider instead. Accordingly, we find that prior price information raises customers' concerns that the provider is dishonest and will not keep his word. We know from previous literature that customers consequently tend to underestimate seller costs while overestimating seller profits when providing a product or service (e.g. Hüttel et al., 2018). Thus, we concluded that providing a price even without charging it, can serve as anchor and reference price so that prior price information can increase customers' awareness of supplier inputs. If one draws on the service typology from *Project I*, cueing customers' value salience by providing price information on value-added services prior to charging for them might possibly work for Front-runners that are characterized by low external and low internal challenges. This might be a relatively uncomplicated lever for *Front-runners*. In principle, this measure involves relatively little effort on the part of the provider. Interviews have shown that an invoice is often enough, which is then discounted by 100% to give the customer an insight into the actual cost of the services.

Type of Price Enhancement. Findings of *Project II* indicate that increasing the base product's price to which a service is linked rather than start charging for a value-added service is an effective strategy for providers when it comes to pricing free services. The finding that increasing the base product's price is considered more fair than introducing a separate service price further suggests that customers are still very product-centric. Thus, this strategy might be especially effective when trying to move *Dead Ends* from free-to-fee. *Dead Ends* are characterized by high external as well as internal challenges and therefore have the lowest potential for successful free-to-fee transformation. Therefore, to profit from these services one option might be to integrate the service price within the base product's price.

Both projects of this thesis primarily focus on global industry leaders and a premium provider setting. We know from extant literature that customers of premium service providers differ from those of low-cost providers in their psychological and behavioral responses (e.g. Moser, Schumann, von Wangenheim, Uhrich & Frank, 2018). Thus, investigating small and medium-sized companies might provide further interesting insights pertinent to those contexts.

In summary, this thesis provides extensive new insights and central answers to the question "how to move services from free-to-fee" for academics and practitioners alike. However, as with any research work, some limitations must be kept in mind when considering the results and implications. Thus, more scholarly research into the topic of free-to-fee transformations of industrial services is strongly recommended. Initial approaches for future research were highlighted in this chapter in the form of an integrative roadmap, but also in the respective future research sections of the research *Projects I* and *II*.

Appendix

Appendix A: Qualitative Study.

Table A.1: Description of company-internal expert sample.

Interview No.	Position of interview partner	Interview Format	Interview Duration
1	Key account sales manager	Face-to-face	61 min.
2	Head of channel management Member of the executive board	Face-to-face	51 min.
3	Key account sales manager	Face-to-face	63 min.
4	Area sales manager	Face-to-face	54 min.
5	Area sales manager	Face-to-face	35 min.
6	Area sales manager	Telephone	37 min.

Table A.2: Description of customer sample.

Interview No.	Position of interview partner	Interview Format	Interview Duration
1	Managing director Sanitary sector	Face-to-face	43 min.
2	Managing director, purchaser Sanitary, heating, plumbing sector	Face-to-face	23 min.
3	Managing director Sanitary sector	Face-to-face	34 min.

Appendix B: Questionnaire Project II – Study 1.

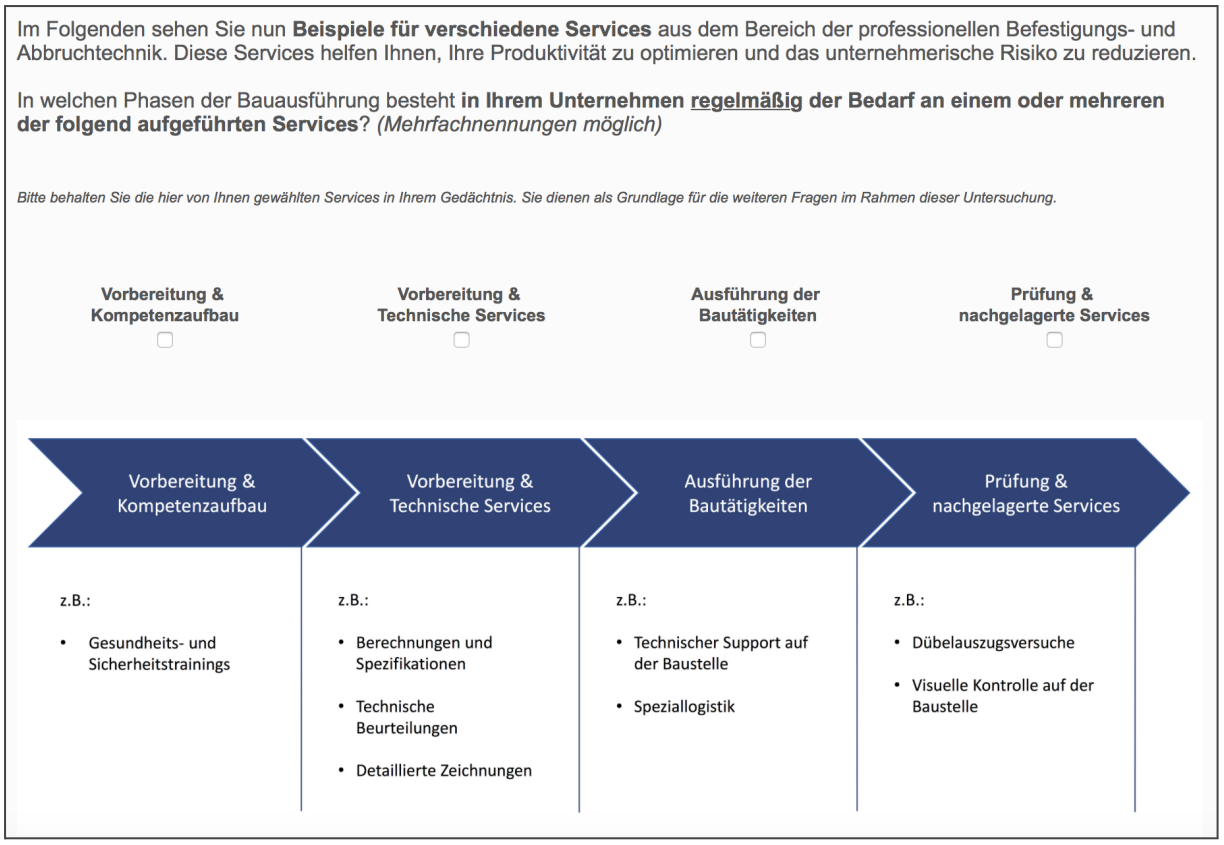


Figure B.1: Service examples questionnaire Project II – Study 1.

Table B.1: Scenarios Project II – Study 1 (German original wording).

	fee/constant service level	free-to-fee/constant service level	fee/enhanced service level	free-to-fee/enhanced service level
pay-per-use	Stellen Sie sich nun vor, **Sie beziehen regelmäßig diese von Ihnen benötigten Services.** Diese werden Ihnen auch künftig **in gewohnter Art und gewohntem Umfang** angeboten. Sie haben die Möglichkeit diese Services beim Anbieter **bedarfsgerecht** zu ordern, das heißt, wenn Sie einen konkreten Service benötigen, können Sie diesen **individuell und separat anfordern.** Die **Bezahlung erfolgt jeweils einzeln**, dabei fallen lediglich Kosten an, falls Sie einen Service beauftragen.	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** in Anspruch nehmen. **In Zukunft wird der Anbieter diese Services jedoch bepreisen.** **Art und Umfang** der dargebotenen Services bleiben **wie gewohnt.** Sie haben die Möglichkeit diese Services beim Anbieter **bedarfsgerecht** zu ordern, das heißt, wenn Sie einen konkreten Service benötigen, können Sie diesen **individuell und separat anfordern.** Die **Bezahlung erfolgt jeweils einzeln**, dabei fallen lediglich Kosten an, falls Sie einen Service beauftragen.	Stellen Sie sich nun vor, **Sie beziehen regelmäßig diese von Ihnen benötigten Services.** In Zukunft wird der Anbieter nun die **dargebotenen Services aufwerten**. Sie können beispielsweise künftig umfangreichere und speziell auf Sie zugeschnittene Schulungen beziehen, für die Sie am Ende ein offizielles Zertifikat erhalten. Oder Sie profitieren von detaillierten Zeichnungen und Berechnungen, einem aktiven Lagermanagement und ausführlicher Beratung telefonisch und auf der Baustelle durch Spezialisten. Sie haben die Möglichkeit diese Services beim Anbieter **bedarfsgerecht** zu ordern, das heißt, wenn Sie einen konkreten Service benötigen, können Sie diesen **individuell und separat anfordern.** Die **Bezahlung erfolgt jeweils einzeln**, dabei fallen lediglich Kosten an, falls Sie einen Service beauftragen.	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** in Anspruch nehmen. **In Zukunft wird der Anbieter diese Services jedoch bepreisen** und im gleichen Zuge die **dargebotenen Services aufwerten**. Sie können beispielsweise künftig umfangreichere und speziell auf Sie zugeschnittene Schulungen beziehen, für die Sie am Ende ein offizielles Zertifikat erhalten. Oder Sie profitieren von detaillierten Zeichnungen und Berechnungen, einem aktiven Lagermanagement und ausführlicher Beratung telefonisch und auf der Baustelle durch Spezialisten. Sie haben die Möglichkeit diese Services beim Anbieter **bedarfsgerecht** zu ordern, das heißt, wenn Sie einen konkreten Service benötigen, können Sie diesen **individuell und separat anfordern.** Die **Bezahlung erfolgt jeweils einzeln**, dabei fallen lediglich Kosten an, falls Sie einen Service beauftragen.
flat-rate	Stellen Sie sich nun vor, **Sie beziehen regelmäßig diese von Ihnen benötigten Services.** Diese werden Ihnen auch künftig **in gewohnter Art und gewohntem Umfang** angeboten. Sie haben die Möglichkeit diese Services im Rahmen eines **übergreifenden Service Paketes** zu ordern, das heißt, Ihnen stehen **sämtliche Services aus dem Portfolio des Anbieters** zur Verfügung und Sie erhalten Unterstützung in allen Phasen der Bauausführung. Die **Bezahlung erfolgt über eine wiederkehrende monatliche Pauschale**, das heißt, für einen fixen Betrag steht Ihnen die gesamte Bandbreite an Leistungen zur Verfügung, wann immer Sie diese benötigen, so oft Sie diese benötigen.	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** in Anspruch nehmen. **In Zukunft wird der Anbieter diese Services jedoch bepreisen.** **Art und Umfang** der dargebotenen Services bleiben **wie gewohnt.** Sie haben die Möglichkeit diese Services im Rahmen eines **übergreifenden Service Paketes** zu ordern, das heißt, Ihnen stehen **sämtliche Services aus dem Portfolio des Anbieters** zur Verfügung und Sie erhalten Unterstützung in allen Phasen der Bauausführung. Die **Bezahlung erfolgt über eine wiederkehrende monatliche Pauschale**, das heißt, für einen fixen Betrag steht Ihnen die gesamte Bandbreite an Leistungen zur Verfügung, wann immer Sie diese benötigen, so oft Sie diese benötigen.	Stellen Sie sich nun vor, **Sie beziehen regelmäßig diese von Ihnen benötigten Services.** In Zukunft wird der Anbieter nun die **dargebotenen Services** aufwerten. Sie können beispielsweise künftig umfangreichere und speziell auf Sie zugeschnittene Schulungen beziehen, für die Sie am Ende ein offizielles Zertifikat erhalten. Oder Sie profitieren von detaillierten Zeichnungen und Berechnungen, einem aktiven Lagermanagement und ausführlicher Beratung telefonisch und auf der Baustelle durch Spezialisten. Sie haben die Möglichkeit diese Services im Rahmen eines **übergreifenden Service Paketes** zu ordern, das heißt, Ihnen stehen **sämtliche Services aus dem Portfolio des Anbieters** zur Verfügung und Sie erhalten Unterstützung in allen Phasen der Bauausführung. Die **Bezahlung erfolgt über eine wiederkehrende monatliche Pauschale**, das heißt, für einen fixen Betrag steht Ihnen die gesamte Bandbreite an Leistungen zur Verfügung, wann immer Sie diese benötigen, so oft Sie diese benötigen.	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** in Anspruch nehmen. **In Zukunft wird der Anbieter diese Services jedoch bepreisen** und im gleichen Zuge die **dargebotenen Services aufwerten**. Sie können beispielsweise künftig umfangreichere und speziell auf Sie zugeschnittene Schulungen beziehen, für die Sie am Ende ein offizielles Zertifikat erhalten. Oder Sie profitieren von detaillierten Zeichnungen und Berechnungen, einem aktiven Lagermanagement und ausführlicher Beratung telefonisch und auf der Baustelle durch Spezialisten. Sie haben die Möglichkeit diese Services im Rahmen eines **übergreifenden Service Paketes** zu ordern, das heißt, Ihnen stehen **sämtliche Services aus dem Portfolio des Anbieters** zur Verfügung und Sie erhalten Unterstützung in allen Phasen der Bauausführung. Die **Bezahlung erfolgt über eine wiederkehrende monatliche Pauschale**, das heißt, für einen fixen Betrag steht Ihnen die gesamte Bandbreite an Leistungen zur Verfügung, wann immer Sie diese benötigen, so oft Sie diese benötigen.

	constant service level	enhanced service level
free	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** in Anspruch nehmen und auch **in Zukunft wird der Anbieter diese Services nicht bepreisen.** **Art und Umfang** der dargebotenen Services bleiben **wie gewohnt.**	Stellen Sie sich nun vor, Sie konnten diese **Services bisher kostenfrei** im Rahmen eines Produkteinkaufes in Anspruch nehmen. Auch **in Zukunft wird der Anbieter diese Services nicht bepreisen,** jedoch die **dargebotenen Services aufwerten**. Sie können beispielsweise künftig umfangreichere und speziell auf Sie zugeschnittene Schulungen beziehen, für die Sie am Ende ein offizielles Zertifikat erhalten. Oder Sie profitieren von detaillierten Zeichnungen und Berechnungen, einem aktiven Lagermanagement und ausführlicher Beratung telefonisch und auf der Baustelle durch Spezialisten.

Appendix C: Questionnaire Project II – Study 2.

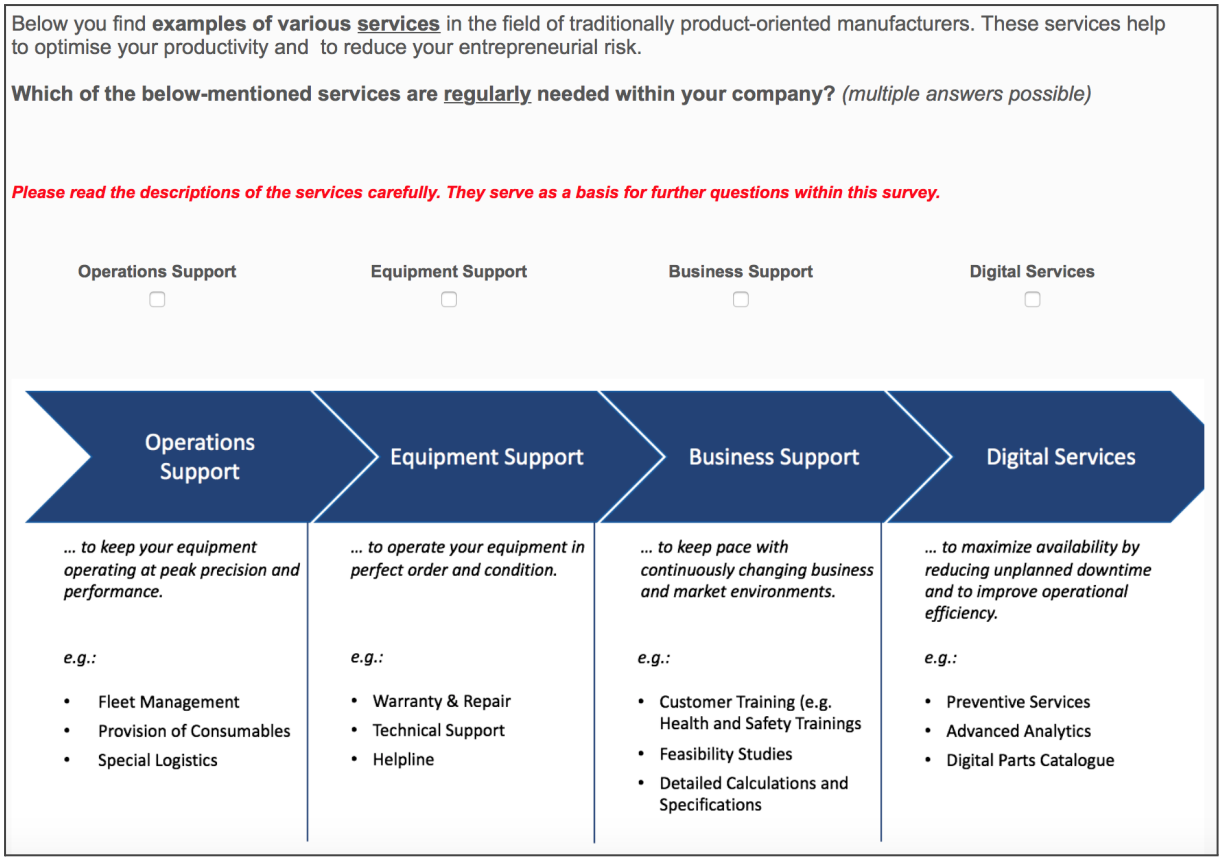
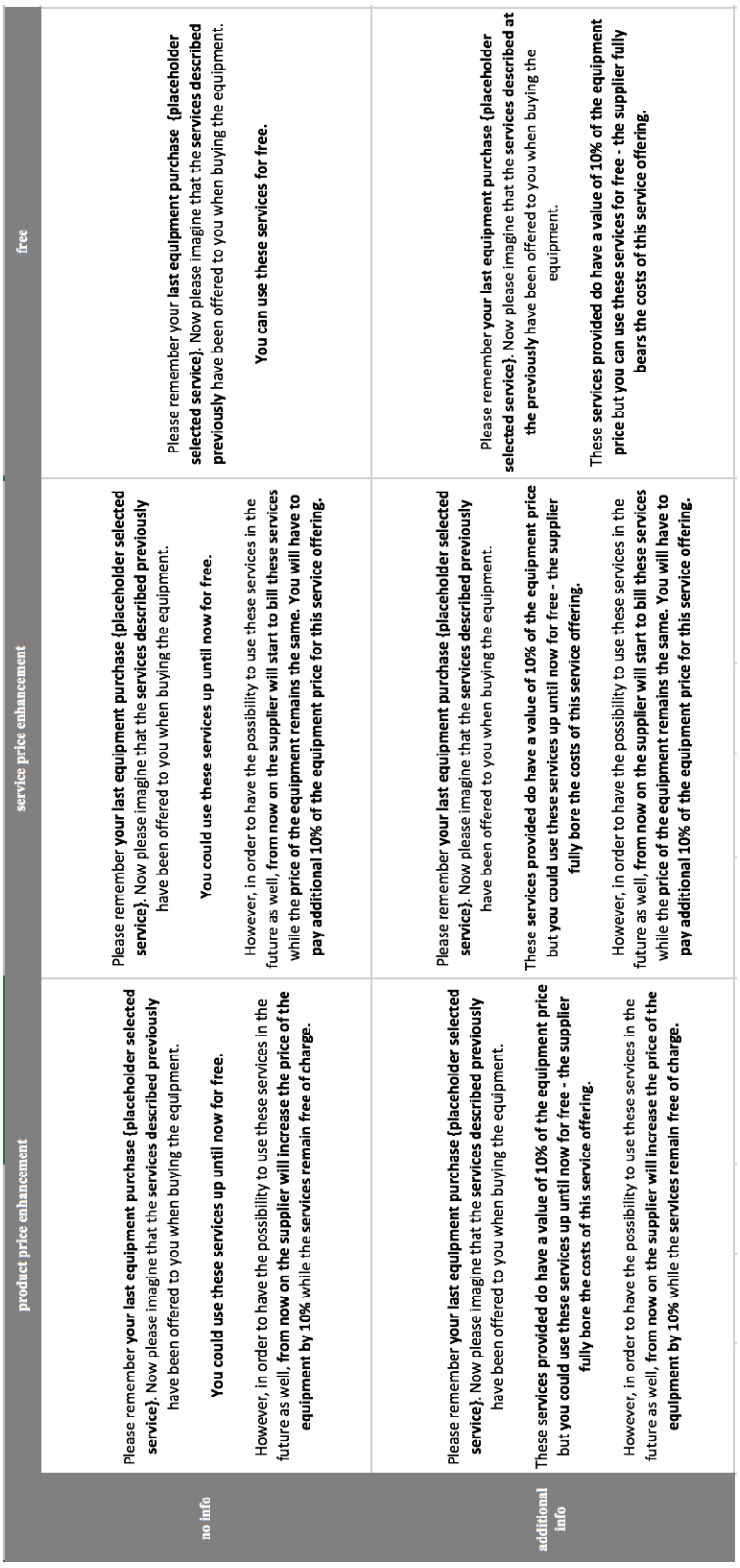


Figure C.1: Service examples questionnaire Project II – Study 2.

Table C.1: Scenarios Project II – Study 2 (English original wording).



	product price enhancement	service price enhancement	free
no info	Please remember **your last equipment purchase {placeholder selected service}**. Now please imagine that the **services described previously** have been offered to you when buying the equipment. **You could use these services up until now for free.** However, in order to have the possibility to use these services in the future as well, **from now on the supplier will increase the price of the equipment by 10%** while the **services remain free of charge.**	Please remember **your last equipment purchase {placeholder selected service}**. Now please imagine that the **services described previously** have been offered to you when buying the equipment. **You could use these services up until now for free.** However, in order to have the possibility to use these services in the future as well, **from now on the supplier will start to bill these services** while the **price of the equipment remains the same. You will have to pay additional 10% of the equipment price for this service offering.**	Please remember your **last equipment purchase {placeholder selected service}**. Now please imagine that the **services described previously** have been offered to you when buying the equipment. **You can use these services for free.**
additional info	Please remember **your last equipment purchase {placeholder selected service}**. Now please imagine that the **services described previously** have been offered to you when buying the equipment. These **services provided do have a value of 10% of the equipment price** but **you could use these services up until now for free - the supplier fully bore the costs of this service offering.** However, in order to have the possibility to use these services in the future as well, **from now on the supplier will increase the price of the equipment by 10%** while the **services remain free of charge.**	Please remember **your last equipment purchase {placeholder selected service}**. Now please imagine that the **services described previously** have been offered to you when buying the equipment. These **services provided do have a value of 10% of the equipment price** but **you could use these services up until now for free - the supplier fully bore the costs of this service offering.** However, in order to have the possibility to use these services in the future as well, **from now on the supplier will start to bill these services** while the **price of the equipment remains the same. You will have to pay additional 10% of the equipment price for this service offering.**	Please remember **your last equipment purchase {placeholder selected service}**. Now please imagine that the **services described at the previously** have been offered to you when buying the equipment. These **services provided do have a value of 10% of the equipment price** but **you can use these services for free - the supplier fully bears the costs of this service offering.**

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