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CUSTOMER RETENTION IN SOFTWARE-AS-A-SERVICE BUSINESS

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Software-as-a-Service (SaaS) liiketoimintamallit yleistyvät kiihtyvää vauhtia, kun pilvipohjaisten palvelujen kysyntä kasvaa digitalisoituvissa organisaatioissa. SaaS liiketoiminnalle haasteita aiheuttaa sen tyypillinen käyttöön perustuva hinnoittelumalli, joka antaa asiakkaalle mahdollisuuden päättää palvelusuhde milloin vain, luoden näin uhan SaaS-liiketoiminnan kannattavuudelle. Asiakassuhteen säilyttäminen on siis keskeistä SaaS toimittajan kilpailukyvyn ylläpitämiseksi ja kasvun mahdollistamiseksi. Tässä tutkimuksessa tunnistettiin kolme olemassa olevaa SaaS-liiketoimintamallia (Enterprise, Pure-play ja Self-Service) sekä seitsemän SaaS-asiakassuhteen säilyttämiseen myötävaikuttavaa tekijää (kokonaisvaltainen kokemus, saadut hyödyt, teknologian suorituskyky, sosiaaliset vaikuttimet, taloudelliset tekijät, passiivinen käytös ja vaihtamisen esteet). Lisäksi havaittiin, että palveluntarjoajakohtaisesti kustomoitu asiakassuhteen säilyttämisen malli auttaa SaaS-palveluntarjoajia suunnittelemaan toimenpiteitä asiakkaiden säilyttämiseksi.

Asiasanat: asiakassuhteen säilyttäminen, software-as-a-service, SaaS liiketoimintamallit

ABSTRACT

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Software-as-a-Service (SaaS) business models are becoming increasingly common, as the demand for cloud-based services increases among digitalizing organizations. A challenge regarding a SaaS business is its typical usage-based revenue model, which allows the customers to discontinue the service consumption at any given time, which in turn causes a threat for the profitability of the SaaS business. Therefore, customer retention is vital for SaaS firms in order to remain competitive and enabling business growth. As a result of this study, three existing SaaS business models (Enterprise, Pure-play and Self-Service) were distinguished and seven drivers for SaaS customer retention (overall experience, net benefits, technology performance, social influence, economic factors, passive behaviour and switching barriers) were identified. It was concluded that a provider-specifically customized customer retention model can help SaaS providers in the planning of customer retention activities.

Keywords: customer retention, software-as-a-service, SaaS business models

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1 INTRODUCTION

According to Gartner's (2019) prediction, worldwide Software-as-a-Service (SaaS) revenue will reach 151.1 billion U.S. dollars by the year 2022, rising 52 % from the year 2019. SaaS remains as the largest market segment of the worldwide public cloud services due to the scalability of subscription-based software. "By 2022, up to 60% of organizations will use an external service provider's cloud managed service offering" (Gartner, 2019), suggesting that organizations increasingly rely on cloud technologies to achieve desired business outcomes. Considering this growing demand, it can be argued that also IT providers will increasingly shift to offer cloud-based solutions, and the competition in this domain will inflate. As the Gartner study (2019) states: "The cloud managed service landscape is becoming increasingly sophisticated and competitive".

As the SaaS market matures, SaaS providers need to differentiate from their competitors and refine their business models as well as implement new strategies to acquire and retain customers. In SaaS context, this is especially important because the typical usage-based consumption model of the offerings allows customers to easily discontinue the usage of the service, and possibly churn to competing service providers with low switching costs (Ojala, 2013), which highly threatens the provider's profitability and business growth. According to Lah and Wood (2016), replacing churning customers increases customer acquisition costs (e.g. marketing and sales), and delays the break-even point of costs and profits. Lah and Wood (2016) estimate that yearly churning of over 20 % of the customers will prove fatal for a subscription-based business. According to recent studies, reasons for customers' churning or discontinuance might be operative problems such as data breaches or technical issues, poor service quality, lack of technology adoption or negatively perceived usefulness or price (Lah & Wood, 2016; Benlian et al., 2011; Ranaweera & Neely, 2003). In large enough scale, these issues can also threaten the provider's brand through negative word-of-mouth, in addition to the decrease of profitability (Lah & Wood, 2016). Thus, investing in customer retention can be argued to be vital for SaaS providers.

Customer retention is already a matured research branch for example in the marketing domain, and in IS literature, related topics such as technology

adoption and continuance are also widely studied. However, the extent of the research is much more limited in the context of SaaS. Some classic models of technology acceptance, adoption, and continuance (e.g. Davis, 1989; Bhattacharjee, 2001) have been tested and extended considering the unique SaaS business circumstances, but an extensive research on customer retention in the context of SaaS business remains undone. Moreover, SaaS business model literature almost completely lacks the customer retention viewpoint, despite its importance to the success of the business and the significant impact on a SaaS firm's profitability.

SaaS business models are still emerging as units of analysis in academic literature. Some SaaS business model analysis and categorization has been made in the fields of information systems (IS) and computer science, e.g. by Satyanarayana (2011), Luoma, Rönkkö and Tyrväinen (2012), Tyrväinen and Selin (2011) and Luoma (2013). Distinguishing the differences between the existing SaaS business model types might be important to consider when selecting the customer retention strategy to be implemented. For example, whereas some SaaS providers offer supportive office applications in large scale with highly automated sales process, others might provide strategically important ERP systems for larger but fewer B2B customers, and with more personal sales approach. In this research, it is hypothesized that a provider's SaaS business model will have an impact on the customer retention strategy and the operative activities.

This research is two-fold: the first part consists of a literature review, in which the theoretical concepts of SaaS business models and customer retention are investigated, and a theoretical base is formed for the empirical part of the study. The second part of the paper describes the empirical study, in which a customer retention model is developed by utilizing a design science research methodology. The empirical research is conducted as a case study in a Finnish B2B software company SoulCore Oy, which is soon initiating its new SaaS offering and is now searching for new possibilities to better serve and retain its customers. Thus, the research is motivated by the existing gap in the prior research, contributing to the research areas of SaaS business models and SaaS customer retention. Another motivational aspect of this research is its practical utility for SaaS providers: the aim is to design a practical tool which helps strategic and operative planning of customer retention activities in a specific SaaS business model context, therefore also retaining and growing the profitability of the business.

To address the afore described research gap and to initiate the study, the following research question was formulated:

- *How can a SaaS provider enhance customer retention?*

To better understand the concepts of SaaS business models as well as customer retention, the following supportive sub-questions were formed:

- *What types of Software-as-a-Service business models currently exist?*
- *What are the drivers for customer retention in context of Software-as-a-Service business?*

The remainder of this paper is structured as follows: The section 2 consist of the literature review, including its methodology description. The section 2.1 is introducing the concept of Software-as-a-Service as well as business model. A review of prior literature is made to explore the current SaaS business models and to compare them to other related IT business models. Furthermore, a taxonomy is constructed regarding the distinguished SaaS business models and their distinctive characteristics. Section 2.3 introduces the concept of customer retention. The relating concepts such as adoption and continuance are explored by reviewing prior SaaS and other relevant literature. In addition, a LAER customer retention model as well as prior literature concerning customer churn are investigated. Based on these findings, a taxonomy of the identified SaaS retention drivers is formulated.

The section 3 described the empirical part of the research. In chapter 3.1, the design science research methodology used in this research is introduced, along with other supportive methods. In chapter 3.2, the design process of the customer retention model is described, including the case introduction, interview process and results as well as the iterations and evaluations of the customer retention model design. Section 4 concludes the study: in chapter 4.1, a summary is made, and the research questions are answered. In chapter 4.2, the customer retention model is critically evaluated, as the limitations and contributions of this research are discussed in chapter 4.3. Lastly, chapter 4.4. provides suggestions for future research.

2 LITERATURE REVIEW

An unstructured literature review was chosen as research method for the first part of the study in order to conduct a comprehensive overview to the selected units of analysis, to synthesize accumulative knowledge from prior studies, and to formulate objective conclusions based on the existing body of knowledge (BoK). According to Levy and Ellis (2006, pp. 183), "knowing the current status of the BoK in the given research field is an essential first step for any research project". The authors argue that an effective literature review accomplishes this by helping a researcher to understand the existing body of knowledge, to recognize where further research is needed, to provide a theoretical foundation for the proposed study, to establish the research problem, to justify the need for the proposed study, and to frame relevant research methodologies, approaches, goals and research questions for the proposed study (Levy & Ellis, 2006).

The literature review of this paper was conducted by searching academic articles containing focal keywords such as "Software-as-a-Service" and "customer retention" from available sources, such as the "basket of eight" information systems journals and other publications, for instance from management and marketing domains. The search was made straight from the journals' online archives, by using Google Scholar, Elsevier, JSTOR, JYKDOK or other relevant scientific literature data bases. In addition, backward search was made from the read articles to find additional relevant sources.

The articles were previewed by reading the abstract and the conclusion sections of the papers and included if the research provided relevant information about the research topics and problems addressed in this paper. Exclusion criteria included e.g. unavailability of the paper (requiring payment), language other than English, or perceived lack of academic reliability (e.g. self-published, incomplete papers). After the included papers were selected, they were completely read. During the read-through, the information, results, and conclusions containing relevant contribution to this research were highlighted by utilizing PDF-editor tools. Finally, the gathered knowledge was synthetized into a narrative text describing the phenomenon under investigation and to support or oppose the presented viewpoints.

2.1 Software-as-a-Service business models

Information technology is a special industry due to fast technological development facilitating new business models (Vanhala & Saarikallio, 2016). Software-as-a-Service (SaaS) business model exhibits major differences compared to traditional software business models (Luoma et al., 2012) and can be viewed as a business model innovation due to its disruptive value proposition and reconfiguration of the revenue logic (Luoma, 2013). The research of SaaS business models

has been rather scarce, but there have been some attempts to distinguish SaaS from other IT business models and categorize common business model elements unique to SaaS business. This chapter presents the characteristics of SaaS as well as business model, SaaS business model categorizations and discusses the differences of SaaS and other common IT business models based on prior literature.

2.1.1 Software-as-a-Service

According to Mäkilä, Järvi, Rönkkö and Nissilä (2010, pp. 115), "SaaS refers to a software deployment model, where the software is provisioned over the Internet as a service". Despite academics are still lacking a generally accepted definition of SaaS, Mäkilä et al. (2010) distinguish five characteristics commonly associated with SaaS definitions:

1. Product is used through a web browser.
2. Product is not tailor made for each customer.
3. The product does not include software that needs to be installed at the customer's location.
4. The product does not require special integration and installation work.
5. The pricing of the product is based on actual usage of the software.

(Mäkilä et al., 2010, pp. 117.)

Benlian and Hess (2011) view SaaS as part of the cloud computing phenomenon. Cloud computing can be seen as five-layer stack consisting of the cloud software applications (such as SaaS) on top, cloud software environment, cloud software infrastructure, software kernel, and the hardware at the bottom (Benlian & Hess, 2011). According to the authors, "each layer represents a level of abstraction that hides all the underlying components from the users, thus providing easy access to this layer's functionality and resources" (Benlian & Hess, 2011, pp. 232). Cloud technology is an enabler for multi-tenant architecture typical for SaaS provisioning. It allows providers to offer the same software as a service to many customers without incremental costs, thus enabling large scaling of the business (Sääksjärvi, Lassila & Nordström, 2005). Multitenancy allows the software to be used as if it was a separate instance of the software (Zhang et al., 2009).

For a provider, SaaS enables cost savings by decreasing the need for customized software development and reducing traditional marketing channels and operating costs (Benlian, Hess & Bauxmann, 2009). Other advantages include possible expansion of the potential customer base and shortened sales cycle (Sääksjärvi et al., 2005). However, the initial investment to the SaaS in the beginning of the business, as well as managing complex network of suppliers, reduced software application turnover and possible performance and scalability problems, can be considered as disadvantages of SaaS business (Sääksjärvi et al., 2005). From the customer point-of-view, SaaS can be conceived as information technology (IT) outsourcing, enabling the customer to avoid the complexity of installation, maintenance, support and high initial costs among other things associated with traditional software projects (Satyanarayana, 2011). Additionally, SaaS can

be "rapidly provisioned and released with minimal management effort or service provider interaction" (Satyanarayana, 2011, pp. 76). Also, an advantage of SaaS is the pay-per-usage model often offered by the provider, which enables on-demand access to the software resources (Satyanarayana, 2011). Other customer benefits include avoiding sunk costs of traditional software development project, focusing more on the customer's core business and enjoying better service (Liao, 2010). Commonly recognized disadvantages include decreased tailoring possibilities, possibility to lose business-critical data, information security and privacy concerns, process dependence and vulnerabilities in the service availability (Rostami, Mohammad, & Javan, 2014; Sääksjärvi et al., 2005).

2.1.2 Business model characteristics

Although its emergence as a unit of analysis among scholars in the past decades, business model does not have a commonly agreed definition. Moreover, Zott, Amit and Massa (2011) argue that business model literature is being developed in silos and the researchers tend to select the varying definitions by fittingness to their own purposes. According to the authors, this multitude of conceptualization has slowed down cumulative research. Despite the lack of uniformity, some common characteristics have been found in prior business model literature. Zott et al. (2011, pp. 1019) describe business model as "a holistic approach to explaining how firms do business", where firm activities play an important role and which not only explain how value is captured, but also how it is created. (Zott et al., 2011.)

The purpose of business models has also been discussed in prior literature. According to Vanhala and Saarikallio (2016) and Luoma et al. (2012), business models can be used in designing new ventures, further developing an existing business, describing a firm's business logic and classifying companies. Zott et al. (2011) portray the purpose of a business model as describing new gestalts and ways of "doing business", explaining value creation mechanisms and sources of competitive advantage and understanding how technology can be converted into market outcomes (Zott et al., 2011).

Many authors have also adopted the view of business model as an arrangement of different business model elements. For example, Osterwalder, Pigneur and Tucci (2005, pp. 17) describe business model as a "a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm". The authors present nine business model building blocks including value proposition, target customer, distribution channel, relationship, value configuration, core competency, partner network, cost structure and revenue model (Osterwalder et al., 2005). In SaaS context, business model elements have been analysed e.g. by Luoma et al. (2012), who argue that central business model elements of SaaS include customer segments (customer size and buyer role), value proposition (online delivery, customer specificity and complexity), revenue streams (sales case size, usage-based pricing) and channels and customer relationship (on-demand model, self-service purchasing).

2.1.3 Categorization of Software-as-a-Service business models

Two SaaS business models, "Pure-play SaaS" and "Enterprise SaaS", have been identified and discussed by Luoma and Rönkkö (2011), Luoma, Rönkkö and Tyrväinen (2012) and Luoma (2013). The following characteristics have been noted by these authors: typically, Pure-play SaaS's value proposition "includes a horizontal, standardized web-native application" (Luoma et al., 2012). The providers tend to target smaller customers, and consequently conduct smaller transactions. The providers often perform very limited amount of customer-specific activities, and they have fewer employees dedicated to customer-specific work. Instead, resources are invested on efficient marketing and sales activities requiring minimal customer contact. Enterprise SaaS providers also offer standardized or mass-customizable SaaS applications (or a bundle of applications) but target larger enterprise customers or selected key customers. The revenue typically consists of an entry fee, recurring fees and service fees and is based on service-level agreements. The business is more relied on direct, personal sales, and it may include consultative sales and channel partners. Partners are also utilized for delivering value-adding services or applications. (Luoma & Rönkkö, 2011; Luoma et al., 2012; Luoma, 2013.)

Luoma et al. (2012) also note the existence of another alternative SaaS business model referred as "Self-Service SaaS". According to the authors, this business model "exhibits software offering simplified and standardized to the extent that customers can themselves find, evaluate and deploy the software" (Luoma et al., 2012, pp. 192). Self-Service SaaS typically consist of a very simple and easily adoptable application, and the revenue model is based on freemium pricing, advertisement, or small recurring fees. The service is often fist adopted by end-users and individual consumers, then small- and medium-size businesses. The business is heavily based on outbound and viral marketing and exploits fully automated self-service in order to keep customer interaction minimal. (Luoma et al., 2012.)

Similar SaaS business model categorization provided by Luoma et al. (2012) is presented by Liao (2010), who classifies SaaS business models in two categories: Enterprise-oriented services and Consumer-oriented services. According to the author, the Enterprise-oriented services are typically charged yearly, monthly or per user and include customized business solutions "to help E-commerce, financial, SCM and CRM, human resources management and other business and office work etc, such as EOS and EBS" (Liao, 2010). The Consumer-oriented services in turn are usually provided to the public for free, and the revenues emerge from advertising or e.g. customers purchasing in-app virtual currency. The service often provides solutions for entertainment or communication (Liao, 2010).

Another perspective of SaaS business model is provided by Lah and Wood (2016). They distinguish three types of subscription-based SaaS business models based on their profit horizons, i.e. the length of time targeted to achieve significant profits (Lah & Wood, 2016). The authors define three profit-horizon-based business models: Future Value Aggregator (FVA), Mid-Term Wedge (MTW) and

Current Profit Maximizer (CPM). Future Value Aggregators expect the financial value and scaling of the business to be realized in distant future. They often invest aggressively in customer acquisition and capturing market share, e.g. by providing simple pricing models including free and freemium. The purpose is to "find levers to add visitors and translate them into reliable revenue" over time, on average more than five years from the start (Lah & Wood, 2016, pp. 23.) According to Lah and Wood (2016), Mid-Term Wedge is the most advocated SaaS business model. MTW's sell their core subscription and expect to achieve profitability in 3-5 years from the start. They typically balance the costs and profit by investing in the platform but pursuing economies of scale. Lastly, Current Profit Maximizers are focused on becoming profitable as soon as possible after the start. As Lah and Wood (2016, pp. 25) state, "instead of capturing market share at the expense of profitability, the companies are very focused on maximizing profitability per customer in the short term, this year or the next". CPM's are typically mature IT providers, possibly traditional software companies expanding to SaaS offerings. They typically have multiple additionally charged product and service offerings, premium offers and many consumption models. (Lah & Wood, 2016.)

Comparing the SaaS business models categorizations presented above, it can be argued that some of the business model characteristics overlap and therefore are not exclusive to each other. For instance, the Enterprise SaaS model presented e.g. by Luoma et al. (2012) shares many characteristics with the Liao's (2010) Enterprise-oriented service category, but also with the CPM model (Lah & Wood, 2016), considering for example the larger target customers, larger transactions and the wider range of the offered customer-specific service. On the other extreme stands the Self-Service SaaS (Luoma et al., 2012), Consumer-oriented service (Liao, 2010) and FVA (Lah & Wood, 2016), which share the characteristics of smaller customer size, free or small transactions, full self-service and a minimal amount of customer-specific service. On the other hand, the MTW-category (Lah & Wood, 2016) as well as the Pure-play SaaS (Luoma et al., 2012) can be viewed as in-between types of these extremities; they may not offer freemium options, but still aim for scalability and lesser customer-specificity than the enterprise-oriented business models.

2.1.4 Comparison of SaaS and other IT-business models

A common distinction in IT business models is made between "product" and "service" firms, where product firm refers to a company selling a standardized software product for many customers while investing relatively more on marketing and support services, whereas service firm refers to a more traditional software companies conducting customer-specific projects with higher investment on long-term customer-relationships (Luoma, 2013). By this categorization, SaaS appears more as product business (assuming that the SaaS offering is standardized). However, the fundamental difference between SaaS and product business is the aspect of economies of scale achieved with multi-tenancy and decreasing costs enabled by that.

Discussing the transition from traditional to SaaS business model, Satyanarayana (2011) presents two radical paradigm shifts. First, the providers need to adopt service-based mentality, where the provider not only is accountable for the software development, but runs the entire service supporting the software, including hosting, maintenance, implementation, support, training, upgrades, security and so on (Satyanarayana, 2011). Mäkilä et al. (2010, pp. 115) also argue that many SaaS providers are "turning products into tools for vendors to sell services". This phenomenon of manufacturing firms shifting into service business has been discussed in the servitization literature (e.g. Kinnunen & Turunen, 2012; Ulaga & Reinartz, 2011), but exceeds the scope of this research. The second radical change (Satyanarayana, 2011) concerns the SaaS revenue model, which is depended on the customer's success. In SaaS, customers are free from traditional up-front payment of the software development and implementation, and SaaS subscription allows the unsatisfied customer to unsubscribe at any given time. Therefore, the satisfaction and continuance of the subscription is vital to the SaaS providers (Satyanarayana, 2011). This statement is also supported by Lah and Wood (2016), who point out that in SaaS, the provider has many more customer touch points per year compared to traditional software sales, in which the responsibility of leveraging the software asset is often on the customer's side after the purchase, and the transaction is guaranteed to the provider, no matter whether the customer gets any value out of the software or not (Lah & Wood, 2016). Therefore, customer success also plays a critical role in SaaS business.

In the attempts of classifying SaaS business models, scholars often compare and distinguish it with the preceding concept of application service provisioning (ASP). SaaS and ASP providers both offer software as provider-hosted service delivered over internet (Benlian, Koufaris, & Hess, 2011). However, the fundamental difference of ASP model compared to SaaS is the customer-specific hosting and integration, whereas SaaS is seen to aim at high scalability with multitenant architecture and to offer the same functionalities across the whole customer base (Luoma et al., 2012; Luoma, 2013). Therefore, the business models of SaaS and ASP can be distinguished by the amount of customer-specific activities and value propositions of the providers (Luoma, 2013). The advantages of SaaS offerings compared to ASP are more inexpensive, technologically mature, modularized and scalable service packages, whereas the downsides include limited customization possibilities and possible traffic bottlenecks concerning the shared IT-infrastructure (Benlian et al., 2011). Zhang et al. (2009) point out the differences between each SaaS customers, noting that SaaS applications should be customizable to meet the customers' individual needs. Benlian et al. (2011) note that customers' service quality expectations vary between SaaS and ASP models. For instance, SaaS customers might expect higher reliability and responsiveness due to higher network bandwidth and processing power. SaaS customers may also expect more regular software updates, whereas ASP customers may be responsible for that themselves. ASP customers on the other hand may hold higher expectations for customizability of the software (Benlian et al., 2011).

In practice, SaaS and other business models might coexist in a single company. Luoma (2013) points out the possibility for a firm to receive a part of its revenue from e.g. software licence sales and part from customer-specific services (Luoma, 2013). Zhang et al. (2009) state that often SaaS applications are only a minor part of the end-user company's IT landscape, creating demand for integrability with on-premise legacy applications which e.g. ASP is often able to provide. This intermingling of different business models is also noted by Mäkilä et. al (2010), who found that in Finland, SaaS revenues cover just a minor part of SaaS firm revenues. The authors also point out that SaaS is often used as a marketing term for products and services that do not fulfil the SaaS criteria, which complicates the business model categorization even more (Mäkilä et al, 2010). Nevertheless, it is notable that for many firms, SaaS is a side-business and part of a larger business model, which might include traditional service and product offerings as well as ASP along with SaaS offerings.

2.1.5 Summary of SaaS business models

The identified SaaS business models from the prior literature include Pure-play SaaS, Enterprise SaaS and Self-Service SaaS (Luoma et al., 2012), Enterprise-oriented service (EOS) and Customer-oriented service (COS) (Liao, 2010), Future Value Aggregator (FVA), Mid-Term Wedge (MTW) and Current Profit Maximizer (CPM) (Lah & Wood, 2016). In this analysis, the SaaS business models are categorized based on the level of standardizations, customer size, transaction size, the level of customer-specific service and the time-to-profit speed of the business. All these factors were presented in the prior literature as differentiating features of the existing business models, and they could be expressed as measurable variables ranging from low to high level. The comparison between different SaaS business models based on these characteristics is presented in Table 1.

Following prior literature, the categorizing factors are marked as high, intermediate (imd) or low in order to create a taxonomy of the distinguished (SaaS) business models. In addition, some factors are marked as not applicable (n/a) if the reviewed study did not consider the given factor in its analysis. For example, the customer size factor is marked as "low" under the Pure-play SaaS category, because according to the prior literature, Pure-play providers tend to have smaller customers. Accordingly, customer size in the Enterprise SaaS category was marked as "high", because the literature review revealed that Enterprise SaaS providers tend to have larger B2B-customers.

Table 1 A taxonomy of current SaaS business models

	Pure-play	Enter-prise	Self-Service	EOS	COS	FVA	MTW	CPM
Standardiza-tion of ap-plication	High	High/ Imd	High	Imd	High	High	High	High
Customer size	Low	High	Low	High	Low	n/a	n/a	n/a
Transaction size	Low	High	Low	n/a	Low	Low	Imd	High
Customer-specific ser-vice	Low	Imd/ High	Low	n/a	Low	Low	Low/ Imd	Imd/ High
Fast profits	n/a	n/a	n/a	n/a	n/a	Low	Imd	High

As noted earlier, some of the SaaS business categories share many characteristics. Thus, these business models can be presented as overlapping categories based on the presented categorizing factors ranging from high to low (Figure 1). The first categorizing factor, the standardization level, is left out due to its constancy between the different business model categories. However, comparing the rest of the factors (customer size, transaction size, customer-specific service and fast profits), it can be noticed that the Self-Service, COS and FVA, Pure Play SaaS and MTW as well as Enterprise SaaS, EOS and CPM models are very similar in their characteristics and can be therefore perceived as single categories. Therefore, following the categorization of Luoma et al. (2012), Self-Service, Pure-play and Enterprise are considered as the main categories of SaaS business models in this research.

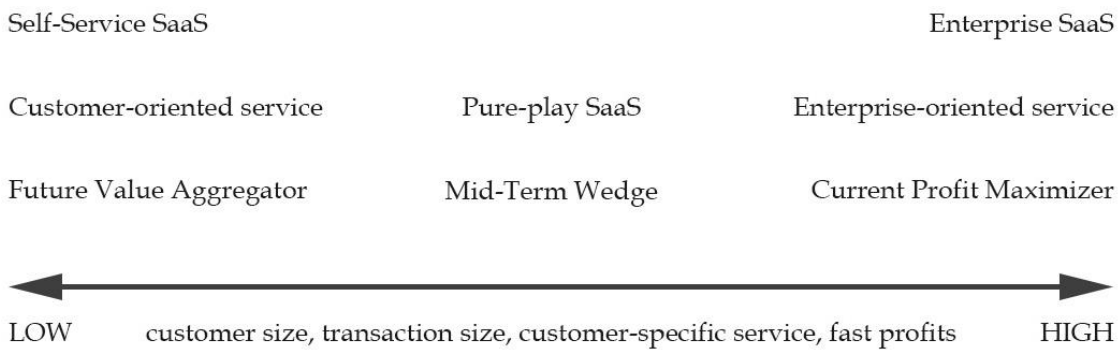

Figure 1 SaaS business model categorization

2.2 Customer retention in Software-as-a-Service business

Whereas many have studied customer retention from marketing point of view, hardly any have researched it specifically in SaaS or any other subscription business context. This observation is somewhat surprising, given the fact that the crucialness of customer retention is continuously noted in SaaS literature. As earlier mentioned, the on-demand subscription models of SaaS allow customers to enter and exit the service effortlessly, creating a need for effective customer retention practices for SaaS providers. In this chapter, customer retention is studied based on prior literature, with a focus to SaaS business. Related concepts such as SaaS adoption, continuance and churn are reviewed, in addition to LAER customer retention model introduced by Lah and Wood (2016).

2.2.1 Defining customer retention

Customer retention refers to the phenomenon where a long-lasting relationship is maintained between a provider and a customer (Bó, Milan & Toni, 2018). Bó et al. (2018) see customer retention as an outcome of true value in use, which is enabled by the provider's value proposition and available operand (physical entities, e.g. raw materials and equipment) and operant (people, e.g. employees and clients and their knowledge and skills) resources. The value in use contributes to the customer's perception of fulfilment of promises, therefore affecting the intention of staying in the relationship (Bó et al., 2018). Customer retention is commonly seen as part of relationship marketing, which according to Tyrväinen and Selin (2011, pp. 3), "builds, maintains and develops relationships, which comply with the goals of the participants". The authors view relationship development as mean for generating new sales as well as relationship maintenance as mean for after sales. This two-dimensional approach contributes to continuous cashflow and churn avoidance. Tyrväinen and Selin (2011) name churn and customer lifetime value as the key performance metrics for SaaS customer relationship management.

Similar concepts of customer retention are loyalty and customer engagement, and sometimes in literature they are used as synonyms (e.g. Gustafsson, 2005). Despite the lack of consensus of the concept definitions in question, some differentiating factors can be found. Customer loyalty can be seen as more conscious decision of consuming goods from a specific provider or brand, whereas retention can be also driven by inertia, which is more unconscious or passive way of repurchasing (Ranaweera & Neely, 2003). Retention can be also driven by indifference, in which factors such as customer's wealth or the homogeneity of the market offerings makes it ineffectual to switch the provider (Ranaweera & Neely, 2003). Furthermore, retention can be also driven by switching barriers, which cause customers to lock into the service (Tsai & Huang, 2007). In turn, customer engagement "involves the connection that individuals form with organizations, based on their experiences with the offerings and activities of the organization"

(Vivek, Beatty & Morgan, 2012, pp. 133), and can manifest among current or potential customers, therefore separating it from retention, which concerns only the existing customers. In this research, retention is considered as an outcome of both active and passive influencers driving the maintenance of the relationship.

Ang and Buttle (2006) describe the customer retention benefits in following way:

> As customer tenure lengthens, the volumes purchased grow and customer referrals increase. Simultaneously, relationship maintenance costs fall as both customer and supplier learn more about each other. Because fewer customers churn, customer replacement costs fall. Finally, retained customers may pay higher prices than newly customers, and are less likely to receive discounted offers that are often made to acquire new customers. All of these conditions combine to increase the net present value of retained customers. (Ang & Buttle, 2006, pp. 85.)

Thus, customer retention can be considered as strategically meaningful way of increasing the profitability of the current customer base. Providers can adopt different customer retention metrics, such as raw (retaining given number or percentage of customers regardless of their value) or sales- or profit-adjusted metrics (focusing retention activities on customers which generate higher sales of profits) (Ang & Buttle, 2006). However, Ang and Buttle (2006) found that companies do not pay much attention on implementing customer retention objectives or prioritize more profitable customers when establishing them, despite its positive effect on business profitability. On the other hand, the authors found that excellence in customer retention performance was strongly associated with only documented complaints-handling process, whereas management practices such as planning, budgeting and assigning accountability of customer retention did not have any impact on the performance (Ang & Buttle, 2006).

Ranaweera and Neely (2003, pp. 235) describe customer retention as "multidimensional construct consisting of both behavioural and affective dimensions" where service quality, price perception, customer indifference and inertia are found to be drivers for customer retention. Tsai and Huang (2007) found that overall satisfaction, community building, switching barriers and perceived service quality were significantly influencing customer retention in an e-purchase platform context. Community building also had a significant impact on customization (e.g. personalized offers), which in turn positively impacted the switching barriers construct. Furthermore, community building also impacted overall satisfaction, which in turn also positively influenced switching barriers (Tsai & Huang, 2007). Gustafsson, Johnson and Roos (2005) presented affective commitment (more emotional) and calculative commitment (more rational) as retention drivers, as well as situational and reactional triggers (changes in personal conditions or relationship with the provider, which affect retention). While the authors find that triggers did not have significant effect on retention and affective commitment was questionably evaluated, customer satisfaction as well as calculative commitment had positive influence on retention (Gustafsson et al., 2005). Nitzan and Libai (2011) studied social effects on customer retention, concluding that

exposure to defecting customers increased a customer's probability to defect as well, but on the other hand, loyal customers were less affected by the exposure. Some organizations try to drive customer retention with loyalty programs (studied e.g. by Rese, Hundertmark, Schimmelpfennig & Schons, 2013), but the effects of loyalty programs exceed the scope of this research.

Switching barriers are defined as "the degree to which customers experience a sense of being ''locked into'' a relationship based on the economic, social, or psychological costs associated with leaving a particular service provider" (Tsai & Huang, 2007, pp. 233). By switching a service provider, customer must invest effort, time and resources to build a relationship with a new provider as well as learn the new features of the new offering. Furthermore, the utility of the existing relationship would be sacrificed. Thus, switching barriers is a key determinant of customer retention (Tsai & Huang, 2007). This proposition is also supported by Lah and Wood (2016), describing switching barriers as "economic moats" which enable a firm to consistently generate above-average profits and complicate competitors' attempts to win over the customers. They list low cost of sales, diverse revenue streams (e.g. services added to software products), network effects (e.g. users or retailers), economies of scale, unique capabilities and high switching costs as common switching barriers, which technology providers are implementing to retain customers (Lah & Wood, 2016).

2.2.2 SaaS adoption and continuance

Whereas very few have studied customer retention in the context of SaaS, some relating concepts such as adoption and continuance have gotten some attention from the researchers. Prior information systems (IS) literature consider the continued IS use as post-adoption behaviour, linked to topics such as technology acceptance (Davis, 1989), user acceptance (Venkatesh et al. 2003) and IS success (DeLone & McLean, 2003). Research on IT adoption has been conducted e.g. by Bhattacharjee (2001) and Karahanna, Straub and Chervanyand (1999). Most of the SaaS adoption studies are based on the theories presented in this prior technology adoption and continuance literature. In this paper, the drivers for SaaS adoption and continuance has been derived explicitly from SaaS and other relevant literature addressing e.g. other subscription-based businesses such as teleoperations. The drivers for SaaS adoption and continuance according to prior SaaS literature are listed in Table 2.

Drawing from the theories of Transaction-cost theory, Recource-based view and Theory of planned behaviour, Benlian et al. (2009, pp. 357) conclude that "social influence, the pre-existing attitude toward SaaS-adoption, adoption uncertainty, and strategic value are the most consistent drivers". The authors also find significant differences in the adoption rates of different SaaS types, concluding that less specific, less strategically important and less uncertainly adopted office and collaboration applications had the highest adoption rates, whereas more specific, strategically relevant and uncertainly adopted (i.e. with higher risk) ERP offerings ranked with the lowest adoption. The authors argue that ERP user

companies are still sceptical about the SaaS provider storing their critical business data and being unable to access it in the case of network breakdown (Benlian et al., 2009).

Benlian et al. (2009) also find that expert opinions and peer pressure influence customer's SaaS adoption. They suggest engaging opinion-leaders and other influential third parties in the assessment of the new SaaS offerings. Furthermore, the authors emphasize the mitigation of technical and economic risks associated with SaaS relationships and increasing trust for example through strategic partnerships or on a contractual level. Additionally, Benlian et al. (2011) state that security and privacy issues, technical integration problems and low-quality customer support were the most common reasons for SaaS discontinuance.

Oliveira, Martina, Sarker, Thomas and Popovič (2019) study determinants for SaaS adoption through the lens of technology-organization-environment (TOE) framework, finding that technology competence and top management support positively influence SaaS-adoption at firm-level. Furthermore, the authors conclude that environmental context, such as coercive, normative, and mimetic pressure also influence a firm's SaaS adoption. As the authors explain: "the effect of technology competence as a predictor for SaaS adoption will be stronger among firms with a higher level of environmental participation" (Oliveira et al., 2019, pp. 9). Adoption drivers of SaaS were also studied by Heart (2010), who concludes that certain trust-related (i.e. trust in the SaaS vendor community, perceived capabilities, and perceived reputation of the SaaS vendor community) and risk-related (i.e. perceived risk of SaaS, systems unavailability and data insecurity) constructs also influence organizational intention to adopt SaaS.

Walther, Sarker, Urbach, Sedera, Eymann and Otto (2015) studied the organizational level continuance of cloud-based enterprise systems, identifying system quality, information quality and net benefits as the most significant continuance forces, and technical integration and system investment as drivers for strongest continuance inertia. While system quality, net benefits and system investment positively impacted cloud service continuance, information quality had no significant influence, and against the hypothecation of the authors, system integration had a negative effect on continuance (Walther et al., 2015). In turn, Wangenheim, Wünderlich, and Schumann (2017) study IT-based contract renewal by building on Davis' (1989) Technology Acceptance Model (TAM) and Bolton, Lemon, and Verhoef's Customer Asset Management of Services (CUSAMS) framework, suggesting perceived usefulness, perceived ease of use, usage breadth (using broad range of services), usage depth (increased usage or updates) and relationship length as drivers for contract renewal decision. The authors conclude that while usage depth and perceived ease of use were less significant predictors, the length of the relationship, perceived usefulness as well as using broad range of services had a positive impact on contract renewal, and therefore customer retention (Wangenheim et al., 2017).

Benlian et al. (2009) state that satisfaction is strongly associated with reuse intention and customer retention, and crucial to SaaS because the early

maintenance phase before routinization easily leads to discontinuance. According to the authors, also trust plays a central role in long-term customer-relationships and as an antecedent of satisfaction and can be enhanced by good service quality, characterised as rapport and flexibility. Benlian et al. (2009) suggest increasing trust by establishing strategic partnerships as well as mitigating technological and economic risks associated with SaaS relationships. Furthermore, Benlian et al. (2011) provide a SaaS quality measure (SaaS-Qual) building on Bhattacharjee's (2001) post-acceptance model of IS continuance, finding out that confirmation of SaaS service quality positively impacts the customer's satisfaction and therefore continuance intention, but is also fully mediated by perceived usefulness of the service (Benlian et al., 2011). Ranaweera and Neely (2003) found that also price perception moderates the relationship between service quality and repurchase intention in the context of mass services, concluding that when a service price is negatively perceived, good service quality alone is not enough to retain customers.

Finally, Walther, Plank, Eymann, Singh and Phadke (2012) study the success factors and value propositions of SaaS providers, classifying them as SaaS success metrics following the DeLone and McLean IS success categorization. The categories include System Quality (e.g. performance, availability, flexibility), Information Quality (e.g. security, privacy, compliancy), Service Quality (helpdesk quality) and Net Benefits (e.g. cost savings, financing, concentration on core competencies). They conclude cost reduction being the most important value proposition of SaaS. Furthermore, they find that most of the value propositions and success factors of SaaS can be found on the organizational level in the Net Benefits construct of the categorization (Walther et al., 2012).

Table 2 Drivers for SaaS adoption and continuance

	Factor	**Author**
Drivers for SaaS adoption	Low strategic significance (office / collaboration applications)	Benlian et al., 2009
	Low specificity (office/ collaboration applications)	Benlian et al., 2009
	Low adoption uncertainty (office/ collaboration applications)	Benlian et al., 2009
	Expert opinion	Benlian et al., 2009
	Peer pressure	Benlian et al., 2009
	Technology competence	Oliveira et al., 2019
	Top management support	Oliveira et al., 2019
	Low risk	Heart, 2010
	Trust in vendor community	Heart, 2010
Drivers for SaaS continuance	System quality	Walther et al., 2015; Walther et al., 2012
	System investment	Walther et al., 2015
	Net benefits	Walther et al., 2015; Walther et al., 2012

	Perceived usefulness	Wangenheim et al., 2017
	Usage length	Wangenheim et al., 2017
	Usage breadth	Wangenheim et al., 2017
	Service quality (rapport, flexibility)	Benlian et al., 2011; Ranaweera & Neely, 2003; Walther et al., 2012
	Satisfaction	Benlian et al., 2011
	Trust (strategic partnerships)	Benlian et al., 2009
	Risk mitigation	Benlian et al., 2009
	Information quality	Walther et al., 2012
Drivers for SaaS discontinuance	Security and privacy issues	Benlian et al., 2011
	Technical integration problems	Benlian et al., 2011
	Low quality customer support	Benlian et al., 2011
	Negative perceived usefulness	Benlian et al., 2011
	Negative price perception	Ranaweera & Neely, 2003

2.2.3 SaaS customer retention model and churn

Lah and Wood (2016) present a business oriented XaaS (Technology-as-a-Service, including SaaS) Customer Engagement Model (Figure 2), consisting of sequential phases called LAER. The LAER model consist of four processes: Land, Adopt, Expand and Renew. According to the authors: "these approaches are designed to move customers rapidly across the stages of technology adoption, resulting in high renewal and expansion likelihood" (Lah & Wood, 2016, pp. 194). The model is grounded on a revenue model in which customer churn and downsell decrease the revenue from existing subscribers, whereas up- and cross-sell increase it. According to Lah and Wood (2016), especially customer churn sets a fatal threat for the SaaS profitability. Every customer that stops subscribing to the service must be replaced with a new one just to keep the revenue flat. Additionally, the customer acquisition costs will grow if the customer churn percentage increases, delaying the firm's time to profit (Lah & Wood, 2016). This economical view of churn is also supported by Ge, He, Xiong and Brown (2017).

The LAER process starts from "Landing" the customers, meaning all the activities required to close the first sale with a new customer and implement the solution. "Adoption" refers to the activities which need to be taken to make the customer adopt the solution successfully and expanding its use. "Expanding" means all the actions required to help the customers increase their spending around the service, including up- and cross-selling. Finally, "Renew" refers to the actions required to ensure the continuance or renewal of the service contract. (Lah & Wood, 2016.)

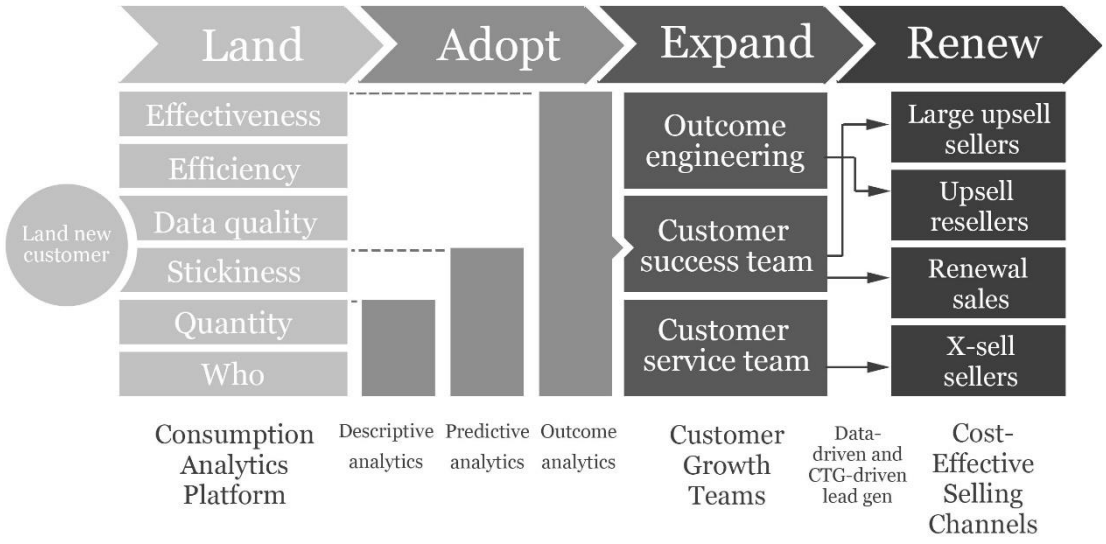

Figure 2 XaaS customer engagement model (Lah & Wood, 2016, pp. 195)

The LAER process (Lah and Wood, 2016) is based on the idea of "success science", in which the SaaS provider helps customers to achieve desired business outcomes successfully, thus driving increasing spending on the SaaS-service and eventually succeeding themselves (Lah & Wood, 2016). Therefore, the LAER model suggests a platform for consumption analytics, which enables the SaaS provider to determine the customer's SaaS adoption level and help them to effectively adopt the offering, which leads to larger business benefits for the customer. Furthermore, the collected historical data enables the provider to predict customer renewal and expansion over time, as well as to understand, whether the customer is on track of achieving the targeted outcomes. Different customer growth teams can be implemented to influence the customers' adoption and business outcomes, but also to recognize new sales opportunities for the provider (Lah & Wood, 2016). The idea of consumption analytics is also supported by Wangenheim et al. (2017), who argue that by implementing longitudinal data collection and analytical skills, customer retention can be predicted by measuring the breadth and depth of a customer's system usage as well as the length of the relationship

Considering the aim of the LAER process, it can be argued that Lah and Wood (2016) incorrectly use the term "customer engagement". Whereas Lah & Wood (2016) seem to use the term "engage" as a verb for getting customers to land in SaaS service and to continue and expand its usage, academic literature finds more complex definitions for the concept. For example, Brodie, Hollebeek, Juric and Ilic (2011, pp. 258) describe engagement as "a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional, and behavioral dimensions" and that customer engagement "reflects customers' interactive, cocreative experiences with other stakeholders in specific service relationships" (Brodie et al., 2011). Furthermore, Vivek et al. (2012) find that involvement and customer participation are precursors of engagement, whereas value, trust, affective commitment, word-of-mouth, loyalty, and brand

community involvement are its antecedents. As a comparison, LAER (Lah & Wood, 2016) addresses the customer acquisition as well as lengthened customership caused by a successful utilization and outcomes of SaaS usage, lacking the cognitive, affective, behavioural, or social aspects of customer engagement definition. However, it can be argued that LAER enhances SaaS customers' involvement and participation (customer engagement precursors according to Vivek et al. (2012)) for instance through adoption and expansion activities (interaction with the SaaS offering and provider), thus enabling customer engagement to emerge. This way, the two concepts are related in this context, but should be separated to avoid confusion. However, as the goal of the LAER process is to maximise the SaaS customer spending as well as lengthening their subscription time (Lah & Wood, 2016), it is considered as a retention-driving process in this research.

Predicting customer renewal has been studied in research regarding customer churn. For instance, Sukow and Grant (2013) state that due to highly predictable nature of subscriptions, future SaaS revenues can be projected based on few key metrics, but on the other hand, predicting churn rate is critical to achieve successful projections. A branch of this research concentrates on algorithmic methods or machine learning algorithms leveraged in predicting the likelihood of churning and identifying at-risk subscribers. Accurate predictions enable SaaS providers to develop communication to retain customers as well as improve future products. Sukow and Grant (2013) also find that churning happens most likely in the early phase of the subscription, whereas continued SaaS usage decreases the churn rate due to value derived from the service in a long run. This finding provides valuable information for SaaS providers, as it can be argued that the retention-enhancing actions are important to conduct in early phase of a customer's service consumption.

2.2.4 Summary of SaaS customer retention

Customer retention is a diverse phenomenon, in which many factors influence the customer's and provider's relationship continuance. From the prior retention literature, a taxonomy (Table 3) of retention drivers including overall experience, net benefits, technology performance, social influence, economic factors, passive behaviour and switching barriers, is formulated. In addition, examples of each retention factor are given, based on the reviewed literature. The *Overall experience* -category includes factors such as satisfaction towards the service as well as the perceived usefulness of it. Accordingly, positive retention influencers such as high service quality, low risk and feeling of trust was placed in this group. The *Net benefits* -section consists of beneficial outcomes of attending the service, which in turn help the provider to retain the customer. Examples of these are acquired strategic benefits and the overall improved success of the customer. The *Technology performance* -category more specifically describes the technology qualities which help the SaaS providers to retain customers. High system quality as

well as high security and privacy were mentioned as examples in the reviewed papers.

Continuing the retention drivers list, the category of *Social influence* describes the drivers which impact is rooted to social aspects such as trusting experts' opinion and following and imitating peers. *Economic factors* in turn represent the money-value relation of the service, including e.g. price perception and calculative commitment. *Passive behaviour* is a slightly different category since its lesser dependency on the provider's actions. For example, the

While most of the research didn't explicitly study retention in SaaS context, it can be still argued that the found factors still apply to SaaS customer retention, since the reviewed literature often investigated retention in areas such as telecommunication or online services, which both have common features in their subscription-based delivery models.

Table 3 A taxonomy of SaaS retention drivers

Driver	**Examples**
Overall experience	Satisfaction
	Service quality
	Perceived usefulness
	Risk
	Trust
Net benefits	Strategic benefits
	Success
Technology performance	System quality
	Security and privacy
Social influence	Expert opinion
	Peer pressure
	Exposure to defectors
Economic factors	Price perception
	Calculative commitment
Passive behaviour	Inertia
	Indifference
Switching barriers	Strategic importance
	Switching costs
	Usage length
	Usage breadth

By recognizing these retention drivers, a SaaS provider can develop actions regarding the different retention drivers. For instance, implementing consumption analytics offers an effective way to get deeper information about the individual customers, helping the provider to tailor and offer needed services for the key customers while predicting cash flow and at-risk churning customers. Aiming for customers' success and offering an overall satisfying experience of the service increase the chances of retaining the current customers for a long period of time.

Additionally, offering additional services and building up other strategic switching barriers might enhance the retention as well. Of course, retention is also bound to the satisfaction toward the product itself, making it important for the provider to develop high performing and reasonably priced SaaS products, offered along with high quality customer service and support. Finally, the social influence aspect of retention can be exploited for instance in marketing, e.g. by utilizing expert opinions and peer pressure in the marketing communication.

3 EMPIRICAL RESEARCH

The empirical part of this research was conducted during autumn 2019 and spring 2020. The goal was to address the research question *"how can a SaaS provider enhance customer retention"* by designing a customer retention model especially for SaaS providers. A design science research methodology (DSRM) process was utilized in the model design, and a case study approach was selected to develop, test, and evaluate the model in a case setting. In the following chapters, the research methodology, case setting, data collection and analysis, and the study results are presented and discussed.

3.1 Methodology

A design science research methodology (DSMR) presented by Peffers, Tuunanen, Rothenberger and Chatterjee (2007) was chosen as a research method for this study. Design science (DS) is a methodology that aims to "create and evaluate IT artifacts intended to solve identified organizational problems" (Peffers et al., 2007, pp. 49). Furthermore, Hevner, March and Park (2004, pp. 75) state that "the design-science paradigm seeks to extend the boundaries of human and organizational capabilities by creating new and innovative artifacts", and designing and applying the artifact is considered as the outcome of understanding of a problem domain and its solution (Hevner et al., 2004). The resulting artifact might provide "intellectual as well as computational tools" (Hevner et al., 2004, pp. 76), and may be any designed object, such as construct, model, method, social innovation, technical property etc., which embeds a solution to a stated research problem (Peffers et al., 2007). The DSRM follows a six-phased process (Figure 3): "problem identification and motivation, definition of the objectives for a solution, design and development, demonstration, evaluation, and communication" (Peffers et al., 2007, pp. 46).

The DSRM was chosen for this research because of its applicability to the customer retention model design (the artifact). The method provides clear directions how the research process can be done. Moreover, the defined design process was perceived as well-fitting for the empirical case research setting, where the problem identification and motivation, design and development, iterations, demonstration, and evaluation of the model could be done in co-operation with the case-company. It was hypothesized that this way, the customer retention model could be comprehensively validated in an authentic SaaS business context, and in the end it would better serve the needs of the case company due to the active participation in the design process.

The DSMR process was executed in the research as follows: the *problem identification* was done in co-operation with the case company. Thus, the entry point for the research was problem-centered, as shown in the DSMR process model.

The research was *motivated* by the practical as well as theoretical value as described in the chapter 1 of this report: it contributes to the research domains of SaaS business models and customer retention as well as provides practical value for the case company.

As the research was conducted in a case-setting, a semi-structured interview (Myers & Newman, 2006) was used as a supportive method as a part of the *problem identification and motivation* -phase. As Myers and Newman (2006, pp. 3) describe: "the qualitative interview is the most common and one of the most important data gathering tools in qualitative research". Thus, a semi-structured approach was chosen due to its ability to gather rich data and deeper information about the studied topics but leaving room for improvisation and open dialogue as well. The aim of the interviews was to construct a base for the model development by investigating the current SaaS business model as well as customer retention activities of the case company.

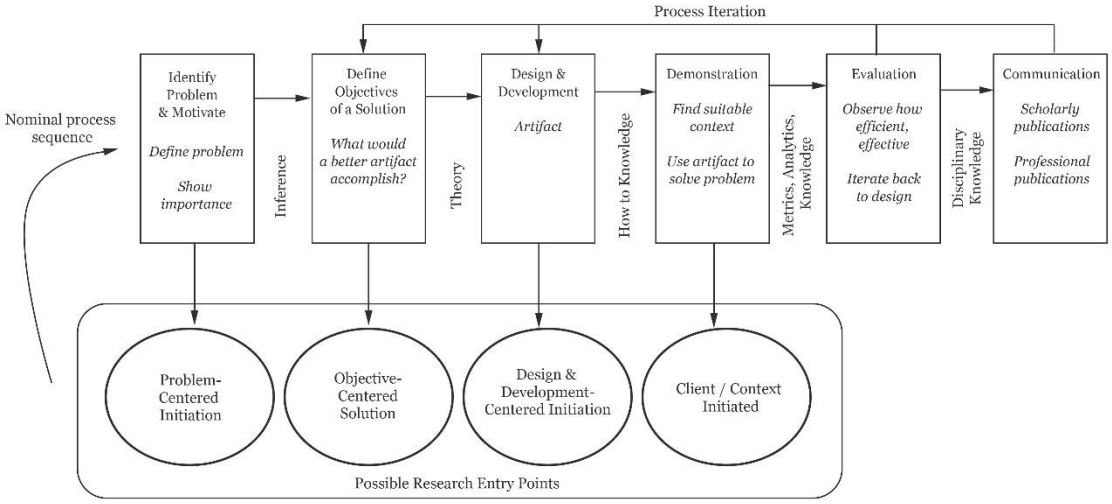

Figure 3 DSRM process model (Peffers et al., 2007, pp. 54)

The second phase, *defining objectives for a solution*, was done by listing the requirements for the customer retention model as described later in this chapter. The *design and development* initiated with the literature review, from which the prior research findings were used as a starting point for the model design. Furthermore, the results from the interviews also gave input for the design and development of the model.

The *demonstration* was conducted by utilizing the model in a planning of the case company's emerging SaaS business and its customer retention activities. The demonstration was done in the case firm's managers' meeting, in which the first *evaluation* was also made by the author by observing how the model works in action, i.e. how useful it is perceived, what kind of questions or comments it arises and most importantly, how it serves its purpose of helping in the planning

of customer retention activities in a SaaS business context. The results of the first evaluation were used as an input for the second design process *iteration*, in which the objectives of the solution were redefined, and the design of the artifact was improved according to the evaluation results. Finally, the *final evaluation* of the model was conducted by collecting questionnaire responds regarding the latest version of the developed customer retention model, and it was targeted for the case firm's management. The *final iteration* of the model was done based on these evaluations.

3.2 Customer retention model development

In this chapter, the design and development of the customer retention model will be described. First, the case description will introduce the case company and the initiation of the model development. Next, the case interview process and results are presented, followed by the design and development iteration of the model. Finally, the results from the final evaluation are presented.

3.2.1 Case description

SoulCore Oy is a Finnish software company that specializes in automated software development by utilizing No Code / Low Code technology based on model driven development and code generation. This way, SoulCore delivers high quality knowledge intensive business applications efficiently and with short delivery times to its B2B customers. SoulCore is already an experienced actor in software project business but aims to increase its growth by elevating its productization level.

Despite SoulCore's maturity in IT-project business, it is still a beginner in running SaaS business. SoulCore's first SaaS offering was released in 2018, and during the following years it has become a profitable source of revenue. However, SoulCore is now initiating its second SaaS offering, and further development of the SaaS business model becomes current again. To achieve growing profits with the new SaaS offering, the company wants to enhance their customer retention efforts, which were not thoroughly defined while starting the first SaaS business. Therefore, a new customer retention model is developed based on the findings from literature as well as the case company's requirements. The goal is to provide a framework with which the strategic and operative planning of customer retention activities could be done.

3.2.2 Preliminary interviews

As described afore, a qualitative approach with semi-structured interview method was chosen to gain deeper knowledge about the case company's current SaaS business model and activities regarding customer retention. Additional

data about the case company's current SaaS offering was gathered before the interviews from the provider's webpages and other organizational documents. This helped with analysing e.g. the value proposition, target customer segment and pricing models of the case firm's current SaaS offering.

Following the semi-structured interview method process, some directional questions were planned before the interviews, but the aim was to follow up the participants' responds and discover rich information about the selected themes. The preliminary planned questions regarding the SaaS business model included among all following examples: "why and how the SaaS business was initiated?", "what is your role in the SaaS organization?", "what is the current cost structure and revenue logic regarding the SaaS offering?", "how long does it take for a customer to become profitable?" and so forth. The questions about customer retention included for example: "what actions are taken to make the prospects land into the service?", "what actions are taken to make the customers adopt the service?", "is there a defined sales process for additional services?", "are the customers' consumption data utilized in some way?", "what actions are taken if a customer discontinues the service usage?", and so forth.

Before the interviews, the common interview pitfalls presented by Myers and Newman (2006) were addressed in order to avoid possible problems which might emerge due to the social setting or sensitive topics. The problem of *artificiality of the interview* was not applicable in this case, since the author is an employee of the case company and a colleague of the participants. Therefore, disclosing opinions to a stranger was not considered as threatening issue. Due to the engagement to the study, the invited participants willingly attended the interviews. The *lack of trust* -problem, like mentioned afore, was addressed by the familiarity of the interviewer. The participants also actively noted, if some emerging information was too sensitive and not suitable to be presented in the report. The *lack of time* -issue was also addressed as mentioned above: enough time was reserved for the interviews. However, since the participants were not prepared for the questions before the interview, some reliability issues might have emerged under the pressure of answering questions, which the participants did not know enough about, or if the questions turned out to be too wide. The *level of entry* -aspect was not a problem and any gate-keeping issues were not seen to exist between the administrative and operative levels. With reference to the previous point, the *elite bias* issue was considered avoided as well: each participant was given the same emphasis in the interview, and no differentiation between their statuses could be made. *Hawthorne effects* were attempted to be avoided by the author by acting only as a neutral observer during the interviews. *Knowledge constructing* could not be affected by the author, so this aspect was left out of consideration. The *ambiguity of language* problem was addressed by explaining the presented questions with other words and examples if needed. Lastly, the *interviews going wrong* aspect was not considered as an issue in this context because of the aforementioned reasons.

Since the firm's SaaS organization is relatively small, the only inclusion criteria for the participants was that they were involved in the SaaS business at some

point in history, either in the operative or administrative level. In the end, three employees were selected as participants for the interviews. The interviews were conducted face-to-face in December 2019 and January 2020 during office hours. The interviews lasted from 24 to 69 minutes, with an average duration of 47 minutes.

3.2.3 Data analysis and results from the interviews

The interviews were recorded with a computer application and transcribed word-for-word with a text-editing program. This text was then read through, and two data-categories were established: "SaaS business model" (including data describing the case company's current or upcoming SaaS business) and "customer retention" (including data regarding the current and future visions of customer retention activities). In the second read-through, these data were colour-coded depending on in which category they belong to, following the description of Miles, Huberman and Saldaña (2013):

> Codes are primarily, but not exclusively, used to retrieve and categorize similar data chunks so the researcher can quickly find, pull out, and cluster the segments relating to a particular research question, hypothesis, construct, or theme. Clustering and the display of condensed chunks then set the stage for further analysis and drawing conclusions. (Miles et al., 2013.)

At this point, no SaaS business model nor customer retention was strictly defined, so the author included all relevant data in these two categories. Later, some pruning was done regarding the coded data. For instance, data regarding the case company's ASP business were eliminated from the SaaS business model category, when the SaaS and ASP definitions became more exact during the research.

The data regarding SaaS business was analysed to identify the case company's business model, which was described in the interviews followingly:

> "…we make business systems…"
>
> "Everything [SaaS-offerings] by far has been sold following the old project-sales-model…"
>
> "…we have taken straight contact to certain parties … and then invested strongly in a few customerships."
>
> "…regarding the direction in which this whole product has been developing, we have had the capability to build features which support its usage in [enterprise] networks … and there the multipliers are so big that it is profitable to invest in traditional sales, as we have done."
>
> "We aim for the fast profit horizon … we must invest some money to develop [the new SaaS offering], but we will make the bottom of the S-curve less steep … Especially in the very start, our code generator helps us to develop applications fast, and this way the initial investment is significantly smaller."

To summarize the results of SaaS business model part of the analysis, the following observations were made: the case company's current SaaS offering is a standardized application meant for medium-sized and larger B2B customers which were reached with a personal sales approach. The value proposition of the offering includes simplifying a mandatory legislative process, while releasing time for the customer's main business. The provider also offers multiple consumption models for the offering, but the basic SaaS version is based on a monthly subscription fee. During the past two years after launching, this offering has turned into a profitable product offering, and creates stable revenue for the case company.

The value proposition of the soon-to-be initiated, new SaaS offering includes supporting a customer's core business process and can be described as ERP-like application for medium-sized and larger enterprise customers. Due to the nature of the offering as well as the relatively small initial investment needed for the development, the profit horizon of the business is expected to be fast. Considering these findings, the Enterprise SaaS (Luoma et al., 2012) was identified as the case company's SaaS business model.

The second theme of the interview considered the current customer retention activities regarding the SaaS business of the case company. For example, the following data was gathered during the interviews:

> "In the SaaS business, we do not have a clear process for what happens after a customer has bought the system."

> "We have technologically very good tools with which we can follow for example the user amount, the level of usage and what kind of errors are emerging, but at the moment we do not utilize that."

> "…if the information is once documented [in the SaaS system] … it is very hard to get rid of the solution."

> "One [potential customer retention driver] is the ongoing development of the product. Another one is that the product reaches a kind of position, from which it is very hard to abandon. Third is … that there needs to be a palette, from which the customers can easily consume additional services, and eventually notice that it is so strategic and significant combination that they cannot get by without it. Fourth is, that we are able to recur in a generic level, such as user experience etc., so that our customer satisfaction stays in high level."

As a summary of the results of the customer retention part of the data-analysis, it was concluded that the customer retention activities regarding the SaaS offering were not thoroughly defined and the possibilities not fully utilized in the case company. However, the strategically important nature of the offering served as a functioning switching barrier, and by far none of the customers had discontinued the service usage. Furthermore, the participants had many visions and ideas for the improvement of customer retention activities, which later contributed to the customer retention model design.

As a result of the analysis, five different processes, which included customer retention activities, were identified from the interview data. First was the *sales process*, including for example the sales-driven approach of selling the offering, providing demonstration of the application, forming contracts, establishing special deals and up- and cross selling services and other products. The second identified process was the *marketing process*, including communications, content creation, event organization and producing materials such as user manuals and instructional videos. The third process was the *service process*, including all the related services relating to landing (e.g. free trial period), adopting (e.g. training), and expanding and continuing the usage (e.g. support and consultancy services). The fourth process was *system development*, including the continuing updates and further developments of the application. Finally, the fifth process was identified as *analytics*, in which the retention can be analysed based on e.g. consumption of the offering, or general customer satisfaction levels. These five levels help to categorize the customer retention activities under the existing business processes of the case company, also giving directions for the delegation of responsibilities regarding the activities. Moreover, the categorization also serves as a building block for the customer retention model design.

3.2.4 The first iteration of model design

The aim of the customer retention model (Figure 4) is to serve as a practical tool for planning customer retention activities for a SaaS firm, so that the customers would stay longer as a user of the service, therefore increasing the SaaS profitability. To address these requirements, some preconditions were set before the initiation of the model design:

1) The model should be based on the findings from the literature review.
2) The model should be compatible with the case firm's Enterprise SaaS business model.
3) The model should be based on a chronological process timeline in order to present the customer's journey towards usage continuance concurrently with the proposed retention activities.
4) The model should be tailored for the case firm's use, considering the possibilities, capabilities, and limitations as well as future goals, which might impact the model design.

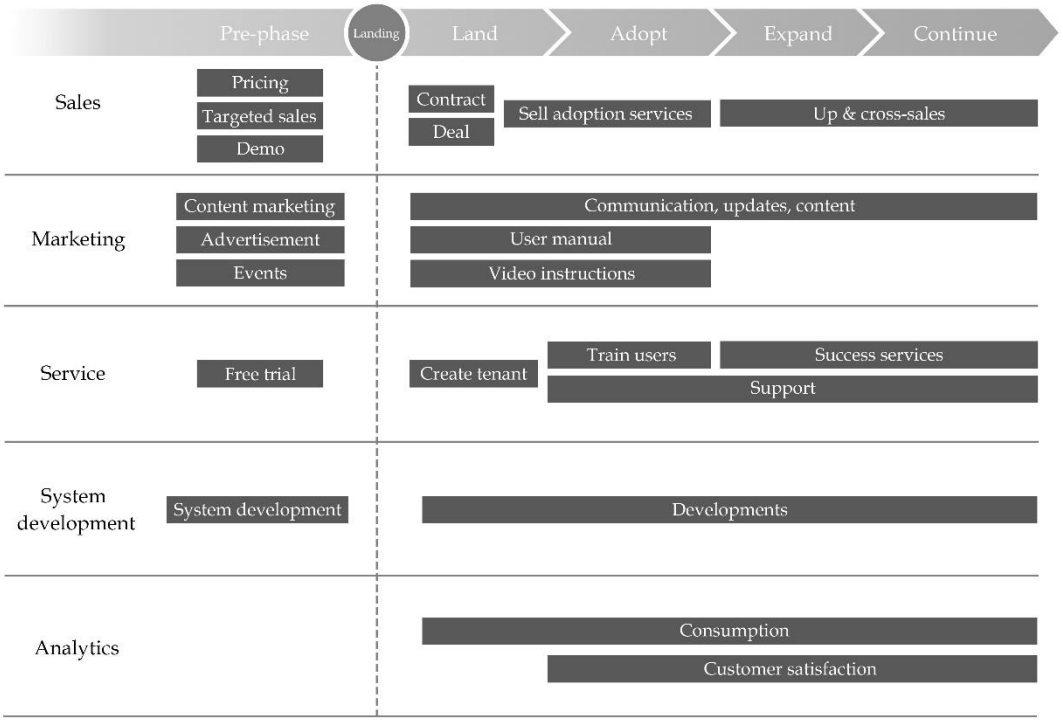

Figure 4 Customer retention model – the first iteration

Following these conditions, the model design was based on the combination of the literature findings and the insights from the preliminary interviews conducted at the case company. To address the first condition, the taxonomy of SaaS retention drivers (Table 3) was reviewed, and each driver was evaluated by its relevancy to the model design. It was decided that the drivers which could not be influenced by the SaaS provider would be left out from the model, since the model aims to suggest ways how the SaaS provider can actively enhance customer retention. Therefore, the passive behaviour -category was left out from the model. It was argued that passivity, such as a customer's perceived indifference or inertia (Ranaweera & Neely, 2003) could not be effectively enhanced by the provider. The included retention drivers on the other hand were compared with the case company's current customer retention activities, and the ones fitting to the criteria mentioned above were added to the model.

To address the second condition, the Enterprise SaaS business model description was reviewed and contrasted to the findings from the preliminary interviews. Since the new SaaS offering of the case firm is targeted to relatively large customers in B2B markets and aims to support their strategically important functions, it was argued that personal sales would be a suitable approach in the attempt of landing the customers. Furthermore, the relative complexity of the offering combined with hypothetically more expensive subscription pricing was considered to require more personal reassurance and trust building between the provider and a customer. Another feature in the Enterprise SaaS model is to offer more customer-specific services. In addition to the basic support service, training,

consulting, and success engineering were added to the model. It was argued that personal service strengthens trust and engagement, but also creates opportunities for discovering customer needs which create chances for up- and cross sales as well as serve as inputs for system development. Moreover, additional services grow the service breadth, therefore creating a switching barrier for the customers. Also, purchasing additional services increase the profitability of a customer, thus contributing to the fast profit goal.

The third precondition was implemented to help understanding the retention phases in the customer's point of view as well as to plan retention activities in respect to these phases. Therefore, the LAER model was adjusted to serve as a base for the process model. However, a "Pre-phase" was added to the model to include the customer retention activities, which might take place before the customer lands the service. "Landing" was marked as a point in which the customer first lands the service, e.g. with offer request or a trial period. "Land" was defined as the phase for closing the deal and implementing the solution. "Adopt" was defined as the phase for activities conducted to help the customer with adopting the service and expanding its use. "Expand" represents the phase for the activities aimed to increase the customer's spending around the service. The original LAER model's "Renew" phase was replaced here with "Continue" to better highlight the nature of the continuous service consumption of a SaaS customer. The Continue-phase was defined as the phase for the activities aimed to retain the customer in the service for a long period of time. Now, the planned customer retention activities were possible to place under a certain customer retention process phase in the model. As the process phases serve as a timeline, it is also visually easy to represent the duration of each activity: some might be continuous up from the landing phase, whereas some might occur in shorter periods, e.g. right after landing.

The fourth precondition was addressed by considering the insights collected from the preliminary interviews. Like described earlier, five existing processes in which the customer retention activities occur, i.e. sales, marketing, service, system development and analytics, were identified. These processes were included into the model to help placing the different customer retention activities under distinct processes, also visualising the concurrency of these processes and activities. Categorizing the activities under the different processes also give directions of the possible organizational responsibilities regarding the activities. The condition of taking the case firm capabilities into account in the model design was therefore addressed by including only processes what already exist in the firm (except of the separate analytics-process), and including only activities which were confirmed as executable by the firm management.

Lastly, the activities derived from the interviews and prior literature were added to the model. The proposed activities under each process were as follows:

Sales

Shifting from pre-phase towards the continuous usage, the sales process includes activities such as pricing (affects the price perception -retention driver

(Ranaweera & Neely, 2003)), targeted sales approach (typical for Enterprise SaaS (Luoma, 2013) and the case firm), demo (used already by the case firm to demonstrate the application), forming a contract and possibly making a deal with a new customer (addressing the fact that the highest churn occurs in the first year of the usage (Lah & Wood, 2016)), selling adoption services (enhancing the adoption impacts retention positively (Lah & Wood, 2016) and provides an additional source of income) as well as up- and cross-selling (increasing the breath of the customer's consumption, thus creating a switching barrier (Wangenheim et al., 2017)) and an additional revenue source.

Marketing

According to the interviews, content marketing ant event organization were seen as a way to influence potential customers with expert opinions (Benlian et al., 2009) and be perceived as an opinion leader in the industry domain. Advertising was added as a supportive function for the previously mentioned actions. User manual and video instruction providing were added in order to enhance the technology adoption and was done by the case company already. Communication, updates and content was intended for the purpose of engaging customers and providing them the latest information regarding the product, thus addressing the issue of "feeling forgotten" which was discussed in the interviews. It was argued that continuous communication would also increase trust towards the provider, and therefore positively impact retention (Benlian et al., 2009).

Service

The customer retention in service process starts with creating a free trial tenant, a service what the case company already provides, and which is theorized to give the customers their first touch to e.g. the system quality (Walther et al., 2015), usefulness (Benlian et al., 2011) and service quality (Benlian et al., 2011; Rana-weera & Neely, 2003). After the trial period, the tenancy is continued and further user training is provided in order to enhance adoption, after which the success-improving services are offered in order to widen the usage breadth and to build switching barriers (Wangenheim et al., 2017). Standard, continuous support is provided to help with possible problems, which potentially affects the customers' service quality perception and drives retention (Benlian et al., 2011; Rana-weera & Neely, 2003).

System development

The initial system development is made in the pre-phase, but the continuous development line was added to the model in order to address the issue of "staying relevant", as emerged in the interviews. It was argued that the customers want to see constant development of the application which they are paying for, whereas stopping development might feel like cashing out and abandoning the customers.

Analytics

The analytics layer was kept simple by adding only two actions: consumption analytics and customer satisfaction analytics. Consumption analytics were not separately categorized as was in the original LAER model (Lah & Wood, 2016), but instead left open for the case company to specify according to their needs. However, the intention of consumption analytics is to provide insights from the customers and help them to adopt and succeed better with the solution (Lah & Wood, 2016). The information could possibly also be used as an input for system development. The customer satisfaction analytics was argued to be a good way to measure and find out about customers' needs, thus providing inputs for system development as well as for the improvement of service quality (Walther et al., 2015) development.

3.2.5 The second iteration of model design

The second iteration of the customer retention model (Figure 5) was designed after the demonstration phase of the research. The demonstration was conducted at the case company by presenting the model to the firm's management at a meeting regarding the planning of the new SaaS offering in March 2020. In the meeting, the key findings from the literature review and interviews were discussed, after which the customer retention model was presented to the participants. The key observations from the discussion were as follows:

- The representation of the LAER-based customer's retention process was not immediately clear.
- In the sales process, making a deal offer for the first year was considered to ensure the adoption and preventing early churning.
- In the marketing process, continuous events and webinars were seen as a way to create active user communities, which can give input for the development of the offering.
- The service process was discussed in three levels: basic supportive services, additionally priced services, and success engineering-type of services, which all could contribute to the customer retention.
- Some ideas of up- and cross-sales emerged.
- The importance of how to organize the product team was emphasized.
- The new SaaS offering's strategic importance as a switching barrier was discussed.
- All the proposed actions were seen as possible for the case firm to implement, and not many new proposals emerged in the discussion.

Overall, the first demonstration did not evoke more detailed planning of the practical activities. Instead, the discussion concerned more strategic aspects of

the business, implying the model's possibilities to support informed decision-making in business model level. However, the scope of the model evoked slight confusion in the beginning, and it was hard to tell how useful it was perceived to be at this point. However, as the key observations show, some discussion and comments about the proposed activities emerged, based on which the second iteration of the model design could be conducted.

The second iteration of the model started by re-evaluating the complete model design, because based on the discussion, it was not immediately self-explanatory. However, the LAER process was possibly imprecisely explained during the presentation, and the pre-phase was too undefined to be included in the model. Thus, some changes were decided to be done for the retention process timeline, but the general design of the model including the LAER-based phases and the identified processes were still kept.

Next, the LAER-based customer retention process line was simplified by removing the pre-phase completely. It was argued that this supports the mental model of retention happening after the customer's landing, and therefore making the differentiation between customer retention and customer acquisition clearer. Due to this change, many activities were also re-evaluated and removed from the model. For example, all the activities in the pre-phase of the sales process were deleted, because they did not concern the existing customers, but were more directed to acquire new customers. The same removal was done under almost every process, and some activities were moved from pre-phase to the landing phase (e.g. offering free trial and organizing events).

Thirdly, the *System development* process was re-concepted as *Service Development*. This change was done due to the author's own decision to widen up the development to include other aspects of the services as well, in addition to the application itself. Including the system development process was originally based on the case interview result, which revealed that constant system development is an important signal about the relevancy of the offering, and an additional value for the paying customer. However, based on the literature review, the service quality is also a vital driver for customer retention in SaaS-business (Benlian et al., 2011; Ranaweera & Neely, 2003). Thus, it was argued that the "development" should not only cover the application, but also the service as a whole.

Fourthly, dividing the service-process into three different sections (supportive, additional- and success services) was considered. However, it was decided to keep the service process as a single layer to maintain the simple design and avoid confusion. It was argued that the single "service" function would give space to potential other service categories in addition to the three identifies ones. Moreover, the model still had enough expressive power to communicate all these activities under the single service process layer. Furthermore, the "success service" concept was later combined with the proposed "additional services" activity since success services would also belong to the separately charged services -category.

Lastly, all the proposed retention activities were revisited, and some of them were removed or combined, and some activities remained as they were in

the first model iteration. The idea was to generalize the activities even more not to define the content of the activities or their timing too narrowly. For example, the "sell adoption services" -activity was combined with the more general "up & cross-sales" -activity, because adoption serviced would most likely belong to the separately prices services offering, and therefore be already covered by the up- and cross-sales function. Similarly, "user manual" and "video instructions" were combined under a more general "instruction materials" -title, giving space to the inclusion of wider range of material forms.

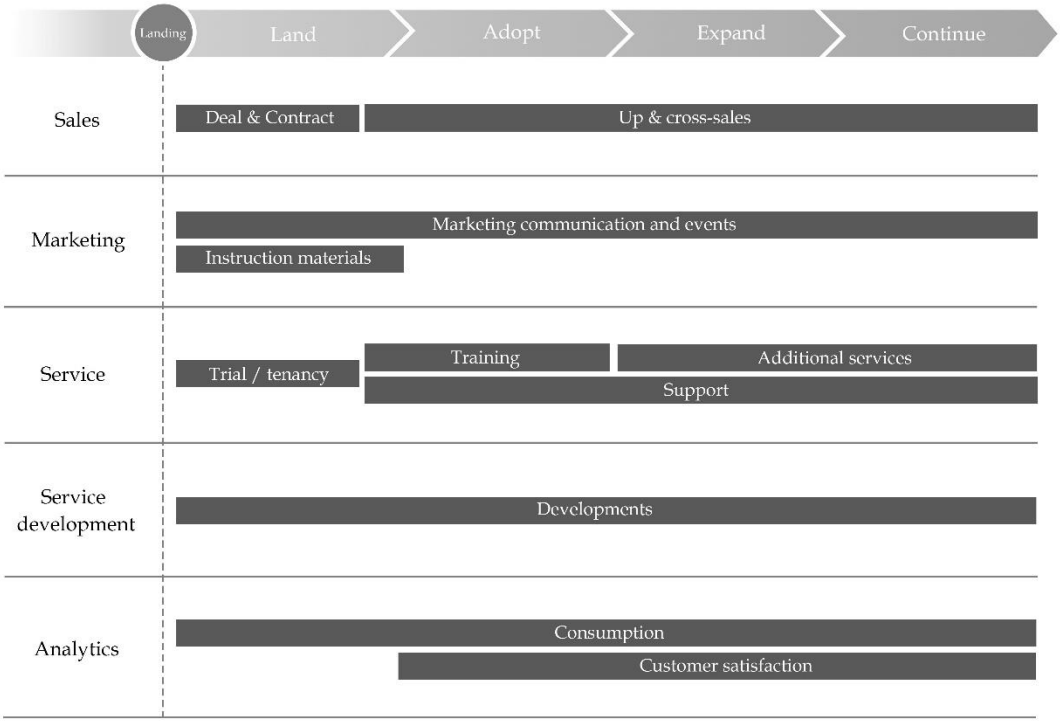

Figure 5 Customer retention model – the second iteration

3.2.6 Final evaluation and iteration of the model

The final evaluation of the model was done by the management of the case company, and it was conducted by filling a questionnaire regarding the latest version of the customer retention model. The aim of the questionnaire was to discover the final improvement aspects of the model, as well as to evaluate its usefulness and feasibility for its intended purpose. The answers were gathered in the beginning of April 2020, and all three invited respondents participated in the evaluation.

The questionnaire consisted of the presentation of the latest version of the model in addition of five evaluative questions, including:

1. In your opinion, is the presented model suitable for a planning of customer retention actions (in the context of SaaS business)?
2. Do you think that this model could enhance practical customer retention work and information collection for it (in the context of SaaS business)?
3. In your opinion, does the model lack some essential elements? If, what?
4. How do you think the model could be improved?
5. Would you use or recommend the use of this model in planning of customer retention activities (in the context of SaaS business)?

The results of the questionnaire are presented in Table 4.

Table 4 Model feasibility evaluation and comments

Infomant	**1**	**2**	**3**
1. Suitability?	+	+	+
2. Positive impact on customer retention work?	+	+	+
3. Lacking elements?	Instruction materials must update throughout the lifecycle.	Model does not bring much attention to the Land-phase.	Expertise offered by the provider, experts, matter-of-fact material, expert/user communities.
4. Improvements?	Need for improvement will appear through testing. Also, provider-specific improvement needs will appear depending on the offering and target customers.	By emphasizing different sections through concrete KPI's.	By producing checklist -type of material to support implementation.
5. Would use?	+	+	+

The results of the questionnaire show that 100 % of the participants considered the model to be useful for the planning of customer retention activities. In addition, 100 % of them think that the model will have a positive impact on the practical work regarding customer retention. 100 % of the participants also responded that they would use or recommend the usage of the model.

Some comments about lacking elements of the model also emerged: the instruction materials -activity in the Marketing -process section of the model was suggested to last throughout the retention lifecycle in order to take into account the possible new features and updated versions of the software. Also, the point

of landing in the retention process was seen as less emphasized. Furthermore, new considerable categories and/or customer retention activities were proposed.

All the participants also came up with improvement ideas regarding the model. It was hypothesised that the needs for improvement will most likely occur through testing the model in practice. Also, it was noted that the improvement needs might depend on the different provider's offerings and their target customers. Concreteness was also called for in the responses: performance indicators or measures and additional supportive materials were suggested to be added.

After analysing the collected evaluations and comments, the third and final iteration of customer retention model was done, as presented in Figure 6. First, considering the comment about low emphasis of the Land-phase in the model's evaluation, the phase was revisited more closely. Lah and Wood's (2016, pp. 186) definition for the Land phase is "all the sales and marketing activities required to land the first sale of a solution to a new customer, and the initial implementation of that solution". In the first iteration of the model design, the Land-phase was defined as the phase for the activities aimed to close the deal and implement the solution. The activities, including e.g. trust-building contractual agreements, deals for lengthening the first usage period (Wangenheim et al., 2017), offering special discounts for a positive price perception (Ranaweera & Neely, 2003) or offering trials to give an impression of the system- and service quality and usefulness (Benlian et al., 2011; Ranaweera & Neely, 2003; Walther et al., 2012; Wangenheim et al., 2017). Although these activities impact customer retention, it was concluded that they indeed aim more to the acquisition of new customers, not retaining the existing ones. Hence, the Land-phase was removed from the model, including the activities "Deal&Contract" and "Trial / tenancy". Now, the customer retention process "Adopt, Expand and Continue" was better highlighting the customer retention lifecycle, completely leaving out the acquisition phase.

From the lacking elements section, the "instruction materials" -activity was combined with the "support" in the service process section, since the instruction materials are meant to support the adoption, learning and usage of the solution. This way it was also stretched over the whole customer retention lifecycle like proposed in the managers' evaluation. Other proposed lacking elements were considered to be already included in the activities presented in the model. For example, expertise and matter-of-fact material were already embedded in the different processes. However, expert and user communities were further considered.

As Vivek et al. (2012) state, customer involvement and participation positively affect customer engagement, which in turn can be argued to enhance retention through its potential consequences, including value, trust, affective commitment, word-of-mouth, loyalty and brand community involvement. Vivek et al. (2012) argue that their conceptualization of customer engagement emphasizes the "importance of broadly understanding individuals' interactions and connections with the brand or product and with each other relative to the brand". Although being separate concepts, it can be argued that customer retention and engagement sometimes share common goals. As an instance of involvement and participation, community building is considered as a fitting activity to the

customer retention model. Moreover, the case company already engages its existing customers in its social media channels, but also by organising varying events. Therefore, community building is added to the customer retention model, and since belonging to the domain of relationship marketing (Vivek et al., 2012), it is placed under the marketing process in the model.

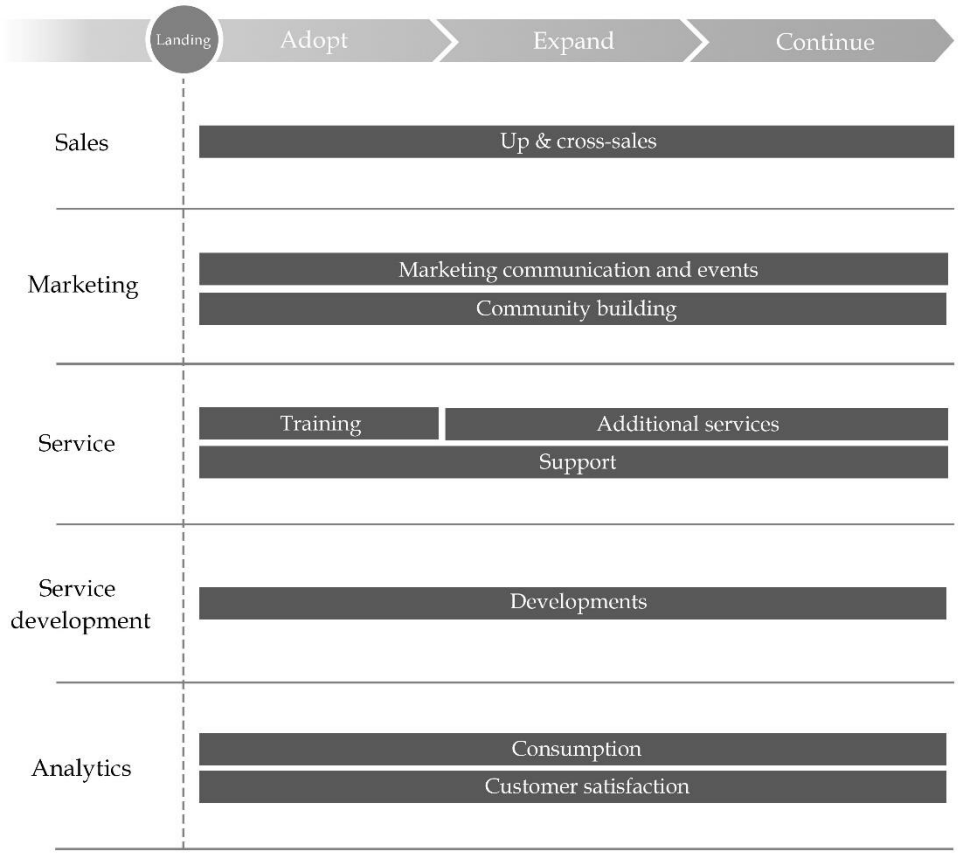

Figure 6 Customer retention model – the third iteration

As mentioned, the evaluation responses about the improvement of the model included KPI's for different sections, as well as supportive materials for the organizational implementation of the activities. These proposed additions were considered as separate annexes of the designed customer retention model and exceeding the scope of this research. Therefore, they were left for future consideration.

4 DISCUSSION

This research investigated customer retention in the context of SaaS business. In the literature review part of this study, the concepts of SaaS business models and customer retention were studied by reviewing prior academic literature. The purpose of the literature review was to synthetize prior knowledge, but also to build theoretical base for the customer retention model design, which was the main objective of the empirical part of this study. The main research question in this study was: "*how can a SaaS provider enhance customer retention*". In the next chapters, this study is summarized, and the key findings of the research will be discussed. In addition, a critical evaluation of the design of the customer retention model will be given. The limitations and contributions of this research are discussed, and lastly, suggestion for future research are given.

4.1 Summary and answers to the research questions

Despite the accelerating interest in SaaS from the IT providers' and clients' side, SaaS business models are still scarcely studied, and classifications of different SaaS business model types still wait for further examination. By far, categorizations between the different SaaS business model types have been made considering the different profit horizons, levels of customer-specific work, customer- and transaction sizes as well as standardization level of the offering. As a result of the literature review, a taxonomy of current SaaS business models including Pure-play, Enterprise and Self-Service SaaS (Luoma et al., 2012), Customer-oriented and Enterprise-oriented service (Liao, 2010) and Future Value Aggregator, Mid-term Wedge and Current Profit Maximizer (Lah & Wood, 2016) was formulated. However, the similarities and overlapping between the discovered SaaS business models led to a further categorization. Following the analysis made by Luoma et al. (2012), three main categories, including Self-Service, Pure-play, and Enterprise SaaS, were concluded as the currently existing SaaS business models. This result also serves as an answer to the supportive research question: *what types of Software-as-a-Service business models currently exist.* It seems that although SaaS business models are still scarcely studied, a common view of the main categories and their characteristics exist among the researchers. Therefore, this study does not make any novel findings regarding the existing SaaS business models.

Prior SaaS business model literature also reveals that despite many providers' interest of standardizing and scaling the SaaS offering according to the Pure-play SaaS criteria, the need for customer-specific customization still exists, especially among Enterprise SaaS customers. For instance, Sääksjärvi et al. (2005) argue that the benefits of the SaaS-delivered offerings are often overoptimistically presented, and that many times customization is required to provide instant value to the customer, thus making it possible to reach the critical economies of

scale (Sääksjärvi et al., 2005). Hence, Enterprise SaaS providers must keep searching for the balance in their business models, and research among the successful Enterprise SaaS firms could bring light to the success factors of this business model. It has also been noted that in Finland, Pure-play SaaS models are still in a minority among the SaaS business providers, and that often a provider's revenue consists of multiple offerings ranging from customer-specific projects to SaaS, ASP and other services (Mäkilä et al., 2010; Luoma, 2013), which also was the case in the case company of this study. Thus, further research on co-existing business models is still required to conduct to grasp the complexity of the IT-market and SaaS as a popular business model in it.

To answer the second supportive research question, "*what are the drivers for customer retention in context of Software-as-a-Service business*", the concept of customer retention was explored and the drivers for customer retention were drawn from prior IS and other relevant literature. As noted, customer retention is a widely studied phenomenon for example in the marketing field, yet the retention drivers specifically in SaaS business context remain less studied and the study viewpoints in the few existing papers vary largely. As a conclusion of the literature review of the topic, a taxonomy of SaaS customer retention drivers was formulated, including overall experience, net benefits, technology performance, social influence, economic factors, passive behaviour and switching barriers. Furthermore, the possibilities for utilization of this information for the advantage of a SaaS provider was discussed, and later demonstrated in the empirical part of this research. The findings imply that customer retention is as a wide and multifaceted concept, and therefore the categorization of the varying retention drivers could have been done in multiple ways. However, by combining the variety of the priorly discovered retention drivers, it can be argued that the formed taxonomy provides a broad view to the phenomenon.

Regarding the retention drivers, SaaS adoption was less emphasized in this research compared to SaaS continuance. In addition to the limited number of sources, it was noted that the viewpoint to adoption varies depending on the source. For example, the SaaS adoption study by Benlian (2009) referenced in this paper addresses adoption through the lens of IT outsourcing, considering adoption as a "decision" of whether to start the consumption of SaaS or not. In contrast, the Adoption-phase of LAER model (Lah & Wood, 2016) emphasize the rate of which the active users of a SaaS offering are utilizing the capabilities of the technology, and how efficient and effective the usage is. The latter view is more fitting to the context of customer retention, in which the technology is already chosen, but the adoption rate among the active users can vary. However, other reviewed literature did not consider this approach to adoption, and therefore retention drivers especially addressing the adoption-phase were difficult to find.

While some annotations regarding customer relationships exist in SaaS business model literature, customer retention is not by far considered as business model element of SaaS (with the exception made by Lah & Wood, 2016). Since customer retention is strategically valuable way to enhance SaaS profitability and possibly differentiate from competitors, actions taken to increase retention

should be considered as part of how a SaaS firm "does business", as described in many business model definitions. This paper takes the first step in doing so by contrasting a SaaS firm's customer retention activities to its specific SaaS business model.

In the empirical part of this research, following the Peffers et al. (2007) design science research methodology, a customer retention model was designed according to the literature findings as well as the requirements set by the case company. Each evaluative design iteration shaped the model to its final form, which includes an altered version of Lah and Wood's (2016) LAER customer retention timeline as well as the case company's work processes associated with the different customer retention activities. The activities themselves were derived from the literature review as well as the case company's existing practices. The model especially supports the operative approach to the planning, as the activities can be placed in the process timeline under certain retention process phase as well as under the different SaaS business processes of the firm. The strategic approach is more subtle and occurs in the choices of retention activities, which represent the particular SaaS business model context and the according target customers. For example, in the context of Enterprise SaaS offering, the activities might include more customer-specific services compared to e.g. Self-Service SaaS context. The results from the managers' evaluation in this case study indicate that the model is perceived as useful and feasible for its purpose of supporting the planning of the customer retention activities in the context of SaaS business. Therefore, a provider-specific customer retention model – combining scientifically validated customer retention drivers, the firm's SaaS business model as well as the fitting customer retention activities – is presented an answer to the main research question of this paper: "*how can a SaaS provider enhance customer retention*".

Surprisingly, the study also showed that the mapping of the customer retention drivers not only help with the planning of the retention activities, but also with the design of the business model itself. As noted in the demonstration phase, the model provides strategically valuable information about a customer's reasons for staying or leaving, therefore supporting the manager's decision-making regarding the arrangement of the value-creating, delivering and capturing business model aspects in the very beginning of the business. This finding supports the idea of considering customer retention as a relevant SaaS business model element.

4.2 Evaluation of the customer retention model design

Despite the managerial evaluation of the designed customer retention model resulted in positive outcome, the model design still leaves room for further improvements and alternative design choices. The most apparent problem throughout the design process was the role of the Land-phase of the customer retention timeline. Lah and Wood's (2016) LAER-model, to which the retention model presented in this paper was based on, originally addresses customer engagement

according to the authors. However, it was argued that the definition of engagement was wrongly interpreted, and that LAER more appropriately reflects the goal of customer retention. On the other hand, the Land-phase reflects customer acquisition, which concerns new customers instead of existing ones. In the last iteration of the model, the Land-phase was removed from the model, after which the model only considered adoption, expanding and usage continuance. This arrangement also better reflects the literature review results, which also only considered adoption- and continuance drivers. Although the final version of the model can now be perceived as better reflecting a retention process, the confusion between engagement, acquisition and retention were present in this research.

Another critique-deserving aspect of the model is its generality, which was also brought up in the manager's evaluation. Looking at the model, it can be noticed that the length of almost all of the proposed actions spread over the whole retention timeline, making not much difference between the retention phases of adoption, expanding and continuance. The reason for this issue manifests in the compromise of not using specified terms for every activity, but instead using wider umbrella terms to avoid too narrow interpretations of the possible activities and creating more room for other activities under the same title, simultaneously simplifying the layout of the model. For example, multiple adoption-enhancing retention activities, such as measuring adoption data, selling adoption-services, support, user-training and instruction materials were identified from the case-company's activities and prior literature, but the utilization of umbrella terms such as "up and cross-sell", "consumption" and "support" in the model fades the border between the specific activities and their placing in the process model. On the other hand, this issue could be tackled with additional, more detailed supportive material, which also was requested in the managers' evaluation.

Despite these identified shortages in the presented customer retention model, the overall potential of it is still high. The model corresponds with the set requirements: first, its layout is based on prior literature, considering the adoption, expansion, and continuance phases of SaaS customer retention. In addition, the retention drivers are drawn from the prior academic literature as well, providing strategically important information for SaaS providers. Secondly, the model is compatible with any of the identified SaaS business models, including Self-Service, Pure-Play and Enterprise models. In this case study, an Enterprise SaaS provider was the target user for the model, therefore activities typical to Enterprise-SaaS providers, such as personal sales approach and wider portfolio of customer-specific services were included to the model. However, the model can be easily adjusted to reflect another firm's or SaaS business model's context by altering the choices of customer retention activities and corresponding firm processes. Thirdly, the chronological process timeline towards usage continuance was executed by adjusting the Lah and Wood's (2016) LAER model. Because of the previously discussed issues, the process timeline configuration might still need reconsideration, but overall, it addresses the essential customer retention phases. Fourthly, the case-company was well involved in the design of the model: the interviews, observations in the demonstration meeting and the managers'

evaluation gave a holistic picture of the firm's current customer retention activities and the capabilities and visions for future actions an development. Since the managers' evaluation resulted in positive perception of the feasibility and usefulness of the model, it can be argued that the case company's specific requirements were met regarding the model design. Therefore, it can be argued that at least the direction of the model design is right.

4.3 Limitations and contributions of the research

There exist a few limitations in this research: first, the theoretical background constructed in this study was based on very limited number of sources, since SaaS business models and customer retention in SaaS context still remain as scarcely studied topics. For example, the SaaS business model type's impact on the customer retention strategies lacks prior academic attention, and therefore supported conclusions about the phenomenon could not be made. In addition, the present confusion among the definitions of some focal concepts such as customer retention and customer engagement placed a threat for the correct interpretations of the prior research results, also complicating the search process of the needed information.

Secondly, this study was conducted in a case-setting, thus the results only represent a single instance of the model's feasibility and usefulness. Testing the model in multiple cases – preferably involving companies with varying SaaS business models – would give more insights about the functionality of the model and provide additional input for the further development of it. In this case, the model was demonstrated in a phase in which the SaaS service was not yet established. The feasibility of the model could be maybe more reliably tested and evaluated after utilizing and the model continuously in an active case.

This study presents some academic as well as practical contributions. First, the literature review provides a contemporary view to the topics of SaaS business models and customer retention in this context by synthetizing prior research findings. Secondly, considering customer retention as an integral element of SaaS business models is a novel viewpoint and provides a base for further examination of the phenomenon. Thirdly, the empirical case research provided some insights from the context of an Enterprise SaaS business, suggesting that a firm-specifically customized customer retention model could be a functioning way to plan a firm's customer retention activities in strategic and operative levels, thus enhancing the customers' consumption continuance and therefore firm profits.

4.4 Suggestions for future research

As noted, the chosen research topic is still new and future research on SaaS business models and customer retention in SaaS context is still needed. Furthermore,

clarifications of some focal concepts such as SaaS, business model and customer retention would enable more accurate results regarding future research. Additionally, studying concurrent business models was noted as an interesting topic for future research in this paper.

As a follow-up on this research, it might be interesting to investigate the impacts of the different retention activities in a long run, and in specified SaaS business model circumstances or target customer groups, such as B2B vs. B2C or SME's vs. larger businesses customers. These results would provide further insights of the actions that SaaS providers should conduct in order to enhance customer retention in their own specific business domains.

Lastly, it was suggested that the retention model could be tested in an active SaaS business case. For future research, it could be an opportunity to utilize e.g. customer journey mapping to discover the service phases in which the possible discontinuance occurs. This would provide even more firm-specific information about the drivers of discontinuance and therefore help designing the retention activities accordingly.

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