Important Aspects when Taking Software as a Service to Market

A multi-case study in the ICT industry

LINA BEITE BÖRJESON
FRIDA ROGBERG

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Lina Beite Börjeson
Frida Rogberg

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KTH Industrial Engineering and Management
Industrial Management
SE-100 44 STOCKHOLM
Abstract
The information and communication technology industry is constantly affected by rapid changes and new development in technology. During the recent years there is an emerging trend within IT outsourcing where scalable and flexible IT enabled capabilities are delivered as a service over the Internet, called cloud computing. Software as a Service (SaaS) is one of the most adopted cloud service models, which is a software distribution model where applications are hosted by a SaaS provider and made available to the customer over a network.

Tieto is present in this fast changing industry and has recognized a need to move into the cloud in order to stay competitive and meet their customers' requests. Tieto's department Energy Utilities wants to transform their broad portfolio of different software solutions to a SaaS delivery model. This transition will affect Tieto's sales strategies, both in terms of pricing and marketing, and they will face challenges when changing to a SaaS delivery model. Hence, this master thesis aimed to determine important aspects when a company is changing software to a SaaS delivery model, where focus was on pricing and marketing strategies for SaaS.

The objective was accomplished by conducting a case study that involved a qualitative data collecting method. Interviews were conducted from three different perspectives: from external SaaS providers, internally at Tieto as well as from a customer point of view.

Conclusions from this thesis, was that important aspects when marketing SaaS involved: managing the customers' preconceptions, handling the impact of irrational factors, understanding customer need and have the capability to guide and advise customers when purchasing a SaaS solution. The empirical findings showed that a value-based pricing approach was the most common strategy, using a user-based charging method and a model with different levels of subscriptions. The customers expressed that the price level was not the determining factor; instead the difference between the price level and the potential revenue generated from the SaaS solution was of importance. Furthermore, transparency and clearness are desirable conditions in a SaaS pricing model. Several challenges have been identified when transforming software to a SaaS delivery model, where multi-tenancy, security, pricing and standardization were the most common ones.

Key-words: Software as a Service, cloud computing, marketing, pricing, SaaS challenges, transformation
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List of Abbreviations

B2B – Business-to-business
B2C – Business-to-consumer
CEO – Chief Executive Officer
C.# – Customer interview number #
IaaS – Infrastructure as a Service
ICT – Information and Communication Technology
IT – Information Technology
NIST – National Institute of Standards and Technology
PaaS – Platform as a Service
PUL – Personal Data Act
SaaS – Software as a Service
SLA – Service Level Agreement
S.# – SaaS provider interview number #
T.# – Tieto interview number #
VP – Vice President
1 Introduction

The introductory chapter presents a brief background to the study, including a problematization found in the case company. Furthermore, the objective, research questions, delimitations and limitations of this master thesis will be provided.

1.1 Background

The Information and Communication Technology (ICT) industry is a highly international and globalized market, which is continuously affected by rapid changes and new development in the technology (European Commission, 2012). In order to stay competitive with the constantly increasing number of players, it is of utmost importance to keep up with the abrupt turns in the business (Chouseinoglou, Iren, Karagöz, & Bilgren, 2013).

The global economy of today has enabled outsourcing to become a common phenomenon, where a big share of the larger companies have outsourced some or all of their IT functions. In the IT outsourcing industry there is an emerging trend, where resources and services are offered over the Internet, called cloud computing. (Dhar & Balakrishnan, 2006)

Cloud computing is where scalable and flexible IT-enabled capabilities are delivered as a service using Internet technologies (Gartner, 2013). There exist three different layers of cloud computing: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS). IaaS is the hosted delivery of infrastructure services such as networks, servers and other hardware. PaaS builds on the infrastructure layer, offering a complete platform and the tools to develop and deploy applications on the platform. SaaS is the highest level in cloud computing that rests on the platform layer, and is the hosted delivery of software that users can access over the Internet. (Mell & Grance, 2011)

Software-as-a-Service (SaaS) is both a delivery and a business model, where commonly known characteristics include reusability, scalability, availability and multi-tenancy. An example of a SaaS solution is business application such as CRM, invoicing and accounting, but SaaS can also be solutions such as Google Drive. One significant difference separating SaaS from traditional software is the way it is priced, where traditional software products can be priced after the product is finalized. The pricing of SaaS on the other hand has to be present from an early state, since it is closely linked to its architecture. (Laatikainen & Ojala, 2014)

Tieto was founded in Finland in 1968 and is currently the largest IT service company in the Nordic region. The rapid changes in the ICT industry is an aspect Tieto is greatly affected by, indicating the importance to constantly review and transform their portfolio and competencies in order to find innovative ways to create value for their customers. Tieto have identified cloud services as one key aspect to create benefits for their customers. It is currently the fastest growing area in the organization, where the revenues from cloud services increased with 150 percent during 2014. (Tieto, 2014)
Tieto have established that their customers are getting ready to migrate into the cloud, however they are requesting guidance from Tieto in order to make the transformation (Sarri, 2014). This leaves Tieto with the importance to ease their customers’ journey as well as transforming their portfolio, including creating new marketing and pricing strategies.

1.2 Problematization

As a result of the fast changes in the ICT industry, Tieto have acknowledged a need to move into the cloud in order to stay competitive. This change has been triggered both by requests from current and expected customers, as well as a reduced cost of maintenance due to more standardized products made possible by the transition to cloud computing.

Energy Utilities is a department at Tieto that offer IT solutions to the energy sector. They have a wide range of products and services, where some are in the beginning of its lifecycle and others are declining. A movement into the cloud and a change of their portfolio from products to services, or more specifically from software to software as a service, are of interest. This will enable a possibility to bundle similar products in order to reduce their legacy costs as well as offering more holistic solutions.

The transition to a software as a service (SaaS) delivery model will challenge Energy Utilities’ current way of doing business in several aspects. They are currently experiencing the complexity in pricing their future SaaS where there are no existing guidelines or directions how to move from a licensed to a SaaS pricing model. Another challenge is how they should change their marketing and sales strategies in order to ease their customers’ transition into the cloud.

Consequently, there is a lack of knowledge when transforming traditional on-premise software solutions to a SaaS delivery model, both in regard to pricing models as well as marketing and sales strategies.

1.3 Research Objective

The objective of this master thesis is to determine important aspects when changing software to a software as a service delivery model, where focus will be how to determine suitable pricing and marketing strategies for SaaS. The aim is to support the subdivision Energy Utilities at Tieto through the transition of offering their software as a service.

1.4 Research Questions

In order for this master thesis to accomplish its objective the following research questions needs to be answered. Where the first two research questions address the most crucial factors to consider when creating, marketing and pricing SaaS solutions.

RQ 1. What are important aspects for SaaS providers to consider when marketing SaaS solutions?
RQ 2. What are the most commonly used pricing methods in the current SaaS market and what are crucial factors to consider when pricing SaaS?

Except potential marketing and pricing strategies for SaaS solutions, this master thesis should give a recommendation on important aspects to consider when transforming software. Hence the last research question examines the challenges associated with SaaS.

RQ 3. What challenges are associated with SaaS as well as when software is transformed from a traditionally on-premises solution to SaaS?

1.5 Delimitations

The scope of this master thesis is constrained to the viewpoint of customers and service providers in the business-to-business (B2B) industry perspective. Furthermore, due to the interested of Tieto Energy Utilities, purely a SaaS cloud-computing model is investigated, hence excluding infrastructure as a service and platform as a service. When transforming a software to a SaaS delivery model there are multiple important areas to consider, this thesis is however limited to pricing and marketing strategies as well as challenges when offering SaaS. The focus of this master thesis is to investigate what a company should attain and aim for with their SaaS pricing and marketing. However, how this is practically achieved has not received as much attention. Finally, the master thesis stretch over a period of 20 weeks, which is why only a concept is developed and not a fully working SaaS pricing and marketing strategy for Tieto Energy Utilities.
2 Literature Review

This chapter will present existing research and literature in order to understand the theoretical background the thesis is built upon as well as aid the answering of the research questions. This chapter is divided in three sections providing background to the following areas: Cloud Computing, Business-to-Business Marketing, Pricing Strategies and The Energy Sector.

2.1 Cloud Computing

The following section gives an overview of the literature of cloud computing, where the definition and different characteristics will be presented. As well as three service models and four different deployment models, which will be examined. This master thesis will focus on the service model software as a service (SaaS), therefore this section will present a more extensive view of software as a services’ different characteristics, features and challenges.

2.1.1 From IT Outsourcing to Cloud Computing

The global economy has made outsourcing become a common phenomenon, where many larger companies have outsourced some or all of their IT functions. IT outsourcing can be defined as the action of delegating or transferring IT related decision-making rights, internal activities, business processes, and services to an external provider. This external provider develops, manages and administrates the activities in accordance to a contractual agreement. The driving factors for companies outsourcing IT functions are lower costs, higher quality, higher customer satisfactions, improved productivity and the ability to focus on the core area of the business. (Dhar & Balakrishnan, 2006)

However, during the last years there is an emerging trend in the IT outsourcing industry consisting of a set of resources and services offered through the Internet, cloud computing (Dhar & Balakrishnan, 2006).

2.1.2 Definition of Cloud Computing

Cloud computing is a technology that has developed rapidly during the recent years. Due to the attractive features of cloud computing the technology has been widely utilized in industry community, businesses as well as consumers and government organizations. (Zhao, Peng, Xie, & Dai, 2012) There exist many definitions of cloud computing in both the industry and academy. In 2011, National Institute of Standards and Technology (NIST) proposed a definition of cloud computing as (Mell & Grance, 2011, p. 2):

“… a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”

The cloud model is further composed of three service models that are infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS), as well as four different
deployment models that are private cloud, public cloud, community cloud, and hybrid cloud (Mell & Grance, 2011). These concepts will be discussed in more depth in later sections. Figure 1 shows an illustration of NIST’s definition of cloud computing.

Figure 1 – Cloud computing (Mell & Grance, 2011)

2.1.3 Characteristics of Cloud Computing

There are five essential characteristics of NIST’s definition of cloud computing (Mell & Grance, 2011).

- **On-demand self-service**: Allows the consumer to use any computing capabilities, e.g. network storage and server time, as needed automatically without the need for human interaction with the service provider.

- **Broad network access**: The consumer can get access to capabilities over the network through standard tools that promote use by heterogeneous thin or thick client platforms. Examples of these platforms are tablets, mobile phones, workstations and laptops.

- **Resource pooling**: A multi-tenant model is used to pool together the provider’s computing resources in order to serve multiple consumers, using different physical and virtual resources dynamically assigned and reassigned according to the demand of the customer. In general the customer do not have any control or knowledge over the
location of the provider’s resource (such as storage, processing and memory), but may be able to specify the location at a higher level, e.g. country, state or datacenter.

- **Rapid elasticity:** The capabilities can be elastically provisioned and released, sometimes even automatically, in order to scale rapidly inward and outward proportionate to the consumer demands. The capabilities that are available from provisioning often appear to be unlimited and can be appropriated at any time in any quantity.

- **Measured service:** Leveraging a metering capability at some level of abstraction appropriate to the type of service, e.g. processing, storage, bandwidth, allows the cloud systems to automatically control and optimize resource use. Resource usage can be monitored, controlled, and reported, enabling transparency for both the consumer and provider of the utilized service.

### 2.1.4 Deployment models

There are four common deployment models in cloud computing, which indicate the security and accessibility of the service models.

#### 2.1.4.1 Public Cloud

One of the deployment models is the public cloud, where the infrastructure of the cloud is provisioned for open use by the general public and all stakeholders. The public cloud exists on premises and may be operated, managed and owned by a business, government, or academic organization or a combination of them. (Mell & Grance, 2011) According to Yadav and Bandyopadhayay (2014), this type of deployment model allows the service provider to have the property of the resources. A public cloud is a standard model of cloud services where the services are free over an Internet infrastructure, either with or without a subscription. The application data and other information are stored on distant servers, regardless of location and services and are accessed through a client, i.e. a browser such as Safari and Google Chrome. (Yadav & Bandyopadhayay, 2014)

#### 2.1.4.2 Private Cloud

A private cloud model is an infrastructure provisioned for exclusive use for one single organization with multiple consumers. It can exist on- or off-premises and may be operated, managed and owned by the organization, a third party or a combination of them both. (Mell & Grance, 2011) The private cloud is hosted in the data center of the company and only users inside that company or its partners are allowed to use the services. This deployment model has the potential to give the company greater control over the infrastructure and computational resources, thus providing more security compared to public clouds. However, a private cloud faces higher costs due to the cost of purchasing equipment, and cost related to the software and staffing. (Goyal, 2014)
2.1.4.3 Community Cloud

A community cloud is an infrastructure provisioned for a limited community of consumers from organizations with shared concerns. It may exist as on- or off-premises and can be operated, managed and owned by one or more of the organizations in the community, a third part or a combination of them. (Mell & Grance, 2011)

2.1.4.4 Hybrid Cloud

A hybrid cloud’s infrastructure is a composition of two or more distinct cloud infrastructures (public, private or community) that remain like distinctive units, but are bundled together by a standardized technology that facilitates data and application portability. (Mell & Grance, 2011) An organization using a hybrid cloud provides and manages some resources in-house and some out-house. The hybrid cloud solution allows an organization to take advantage of the scalability and cost-effectiveness that a public cloud offers without the need to expose sensitive data and information to a third party. (Goyal, 2014)

2.1.5 Service Models

There are mainly three different layers of cloud computing based on their delivery model: Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Figure 2 illustrates the three layers of cloud computing. Each of them will be presented in the following section, where SaaS will be studied to a greater extent due to the objective of this thesis.

![Figure 2 – Three layers of Cloud Computing](image)

2.1.5.1 Infrastructure as a Service (IaaS)

IaaS is the base layer in cloud computing. The value that IaaS delivers to the consumer is to provide processing, networks, storage and other essential computing resources allowing the consumer to deploy and run arbitrary software, including for example operating systems and applications. (Mell & Grance, 2011) Services that can be offered as an IaaS are for example remote delivery and support of a full computer infrastructure, e.g. virtual servers and storage devices. (Dhar, 2012)
2.1.5.2 **Platform as a Service (PaaS)**

Platform as a service is the intermediate layer in cloud computing. The capability that this model provides to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, services, libraries, and tools supported by the supplier. In this model the consumer has control over the arranged applications and possibly configuration settings for the application-hosting environment, but do not manage or control the underlying cloud infrastructure. (Mell & Grance, 2011)

2.1.5.3 **Software as a Service (SaaS)**

Software as a service is the highest level in the cloud computing model. SaaS gives the customer the capability to use the supplier’s applications running on a cloud infrastructure. These applications can be accessed from several client devices through either a thin client interface, like a web browser, or a program interface. The consumers do not have anything to do with the underlying cloud infrastructure including servers, operating systems, network, storage or even individual application capabilities. However, one possible exception exists of limited user specific application configuration settings. (Mell & Grance, 2011) This layer of the model offers a wide range of applications like productivity applications to enterprise applications, such as e-mail hosting, enterprise resource planning and supply chain management. (Dhar, 2012)

The economical and powerful processors bundled together with the SaaS architecture enable high end computing. Consumers are able to enjoy subscription based high quality service from data and software, thanks to the broadening network bandwidth and more flexible and reliable network connections. In the SaaS layer the underlying applications are running in the cloud. Typical characteristics of the SaaS model are systematic support, sharing of access, latest technological features and no hidden costs. (Yadav & Bandyopadhayay, 2014)

2.1.6 **Definitions and Key Features of SaaS**

Software as a service (SaaS) is a newly developed software delivery model, and there exist several definitions of the concept. Some definitions of SaaS are shown below.

Kittlaus and Clough (2009, p. 20) define SaaS as:

“Business and delivery model that allows customers to use software over the Internet without having to install it on their own computers.”

Gartner (2013) adds on to this definition by highlighting the importance of multi-tenancy and a consumption-based pricing method:

“… The provider delivers software based on one set of common code and data definitions that is consumed in a one-to-many model by all contracted customers at anytime on a pay-for-use basis or as a subscription based on use metrics.”

The third definition by Salesforce (2015) further broadens the classification of SaaS by stating the full responsibility of a SaaS provider:
“… SaaS applications run on a SaaS provider’s servers. The provider manages access to the application, including security, availability, and performance.”

Reviewing the literature of different definitions of SaaS, the above-mentioned definitions are just a few examples. In order to investigate pricing and marketing of SaaS, it is therefore a prerequisite to identify key features of software as a service. These features will function as the foundation in this thesis’ definition of SaaS. Following key characteristics should be included in a SaaS solution in order to be a “true SaaS” (Lee, Lee, & Cheun, 2009):

- **Reusability**: Is the ability of software elements to function for the construction of many different applications. In other words, one-to-many relationships are frequently used when delivering SaaS services.

- **Data managed by provider**: The delivery model of SaaS results in service providers licensing applications to customers for use as a service on demand. Meaning that service providers are responsible for data management and service installation on their own server. Consequently, most of the data that consumers produce is stored and managed on the provider’s data center.

- **Service Customizability**: Due to the typical characteristics of cloud services, it is impossible for service providers to customize their SaaS for all service customers. Thus, the consumers need to customize their services for their own purposes.

- **Availability**: Consumers are capable to access the SaaS service through the Internet. Furthermore, the service consumers do not own the SaaS that is deployed and runs on the provider’s servers. Thus, many SaaS vendors put a lot of effort into achieving a high availability of their services.

- **Scalability**: In software engineering scalability is crucial in order to handle growing amounts of work or to be readily enlarged. A SaaS provider is responsible for rescaling the resource in accordance to their consumers’ request without notifying the consumer in detail.

- **Pay per Use**: Service consumers connect and use the SaaS whenever they want, and only pay for the amount of usage. Consequently, the consumer takes an activity for using the service. However there are several pricing methods for SaaS, these are further explained in section 2.3.4.

Recent literature furthermore describes multi-tenancy as a key characteristic in order for SaaS vendors to become successful. In a multitenant architecture a single instance of common code and data is shared between multiple tenants (customers). Multi-tenancy improves the utilization rate of hardware resources and simplifies the maintenance and deployment of the software. (Laatikainen & Ojala, 2014)
2.1.7 Comparison between SaaS and On-premise Solutions

Opposed to SaaS, on-premise is a concept that is used to describe the purchased or licensed software, where the consuming company holds ownership and the software is usually operated on their own IT infrastructure. (Visma, 2014) In on-premise business models the consumer owns the assets, in SaaS the user rent the assets based on for example a monthly fee. Consequently, SaaS brings along many differences to the traditional way of incorporating software into a company’s IT portfolio. Table 1 point out some of the differences between SaaS and on-premise solutions. (Weston & Kaviani, 2009)

<table>
<thead>
<tr>
<th>Point of difference</th>
<th>On-premise</th>
<th>SaaS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Software and hardware reside at the location of the customer</td>
<td>Software and Hardware reside at the premises of the vendor</td>
</tr>
<tr>
<td>In House Staff</td>
<td>Typical complex software implementation and maintenance requirements necessitate hiring of in house IT experts</td>
<td>End user oriented. Non experts can implement and manage the solution with assistance of the vendor</td>
</tr>
<tr>
<td>On-going Maintenance</td>
<td>Customer's responsibility</td>
<td>Vendor's responsibility</td>
</tr>
<tr>
<td>Implementation Time</td>
<td>Possibly months</td>
<td>Days</td>
</tr>
<tr>
<td>Costs</td>
<td>High upfront capital costs</td>
<td>Pay as you go fee structure. Per user per month fees</td>
</tr>
<tr>
<td>Upgrades</td>
<td>Paid/Sporadic</td>
<td>Free/On-going</td>
</tr>
<tr>
<td>Customizable</td>
<td>Highly Customizable</td>
<td>Point to click customization for SMBs</td>
</tr>
<tr>
<td>Remote Access</td>
<td>Works best inside company network</td>
<td>Accessible via the internet on all internet browsers</td>
</tr>
</tbody>
</table>

Table 1 - On-premise vs. SaaS Software (Weston & Kaviani, 2009)

2.2 Business-to-Business Marketing

This section will provide literature on characteristics in business-to-business (B2B) marketing as well as introduce and define important B2B concepts such as customer segmentation, demand drivers and purchasing process. The importance of brand communication in B2B markets will be examined together with rational and irrational factors that can influence companies in their purchasing process. The thesis is limited to focus on software as a service solutions directed to B2B markets. In order to identify important aspects when marketing a service to a B2B market, this section will also provide literature on differences between product and service marketing.
2.2.1 Characteristics in Business-to-Business Marketing

B2B markets, that consists of “all kinds of businesses that sell products or services to other businesses”, differ from business-to-consumer (B2C) markets, which includes “all kinds of businesses that sell products or provide services to end-user consumers” (Pfoertsch & Scheel, 2012). There are several aspects that separate these markets, generally including the number of customers, the length of the decision cycles as well as most useful channels of communication, all of which are all illustrated in Table 2 (Tanner & Raymond, 2010).

<table>
<thead>
<tr>
<th></th>
<th>Consumer Market</th>
<th>Business Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers</td>
<td>Many customers geographically dispersed.</td>
<td>Fewer customers, often geographically concentrated, with a small number accounting for most of the company’s sales.</td>
</tr>
<tr>
<td>Total Dollar Amount</td>
<td>Smaller total dollar amounts due to fewer transactions.</td>
<td>Larger dollar amounts due to more transactions.</td>
</tr>
<tr>
<td>Decision Cycle</td>
<td>Shorter decision cycles.</td>
<td>Longer decision cycles.</td>
</tr>
<tr>
<td>Communication Channels</td>
<td>More reliance on mass marketing via advertising, Web sites and retailing.</td>
<td>More reliance on personal selling.</td>
</tr>
</tbody>
</table>

Table 2 - Comparison between B2B and B2C markets (Tanner & Raymond, 2010).

The difference between the two markets, showed in Table 2 indicates that companies that focus their sales to B2B markets requires a different marketing strategy compared to B2C companies (Pfoertsch & Scheel, 2012).

2.2.2 B2B buying process

One of the most significant differences between the B2B and B2C markets is the complexity of the buying process within the customer’s organization. Figuring out the decision cycle within each company can be a complicated matter, where a lot of people from different divisions can have a say in what and how much is ultimately purchased, but most important from whom the product or service is purchased. (Tanner & Raymond, 2010)

Webster was one of the earliest to map the B2B buying process in 1965 when he divided it into four segments (Webster, 1965):

1. **Problem Recognition**: The buying process starts with the recognition of a problem that can be solved by the purchase of a product or a service.
2. **Buying Responsibility**: The second phase includes the assignment of buying responsibility in order to ease the buying decision.

3. **The Search Process**: The third phase consists of the procedure where employees gather information and alternative problem solutions in order to make an evaluation of the buying alternatives.

4. **The Choice Process**: The final phase ends the B2B buying process with the selection of one or more suppliers. This stage has close connection to the search process due to the fact that the order in which the different alternatives where processed can influence the final choice.

According to Harrison-Walker and Neeley (2004) Webster’s segmentation has served as a foundation to several newer and more detailed breakdowns of the business-to-business buying process. The more detailed segmentations are often divided into seven or eight steps, where examples of more recent and detailed models includes Robinson, Farris and Wind’s eight-phased model from 1967 called BUYGRJD, as well as 2100-century models from authors including Weitz, Castleberry & Tanner and Bingham & Gomes (Harrison-Walker & Neeley, 2004). These multi-phased models generally include the following stages (Tanner & Raymond, 2010):

1. The recognition of a need
2. A description and quantification of the need
3. Identification of potential suppliers
4. Gathering of proposals from qualified suppliers
5. Assessment of proposals and selection of supplier(s)
6. Establishment of order routine
7. Post-purchase evaluation of vendor including feedback

Large organizations often have their own group of people responsible for all the purchases made by the company, mostly know as the buying center. These employees are professional buyers with the duty to not only purchase products and/or services but also to identify and consider the economic factors beyond the initial price, such as transportation/delivery charges, maintenance, disposal costs, etc. (Giambattista, 2005). Due to the fact that companies profitability can stand and loose with the decisions that the buying center makes, professional buyers are less likely to make purchases “on a whim” than consumers (Tanner & Raymond, 2010).

The number of involved employees depends on the buying situation, which is divided in a new-buy or a rebuy. Meaning if it is the first or the twentieth time the company buys the product/service. In the latter case the company is more likely to skip a few of the above stated stages in the buying process, it is for example common to simply go with the traditional supplier when doing a rebuy. In the case of a new buy however, the purchasing firm is likely to go through all of the stages in a B2B buying process involving more employees, which indicates a much more time consuming procedure for both the supplier and the company performing the purchase. (Tanner & Raymond, 2010) The significant characteristics for each of the two purchasing situations are illustrated in Table 3.
2.2.3 Communication and Marketing in B2B Markets

As stated by Lynch & De Chernatony (2004), Tanner & Raymond (2010) and Tyrväinen & Selin (2011), one of the most important and effective tools of communication in the business-to-business market is personal selling. This is mostly due to the fact that the B2B suppliers have a limited number of potential business customers that they are all eager to have as their customers. Hence, it is crucial for the B2B suppliers to promote their brand and have a strong marketing and communication channel with current and future customers. The most commonly used methods of communication include traditional face-to-face meetings but also using a sales force, trade magazines, sales material, public relations and lobbying (Pfoertsch & Scheel, 2012).

2.2.3.1 Rational and Irrational Factors

Pfoertsch & Scheel (2012) claim that even though the business buying process, as described in chapter 2.2.2, is a very important aspect within the business-to-business market, there are however often factors connected with buying patterns for consumer products that are influencing the professional decision makers. B2B purchasing agents and buying centers have a great number of suppliers overwhelming them with features, choices, information and data. No matter how well these professional buyers are at their job, personal factors will play a part. It can both be other employees that influences the purchase or the buyer him-/herself who, when deciding upon several equally good vendors, simply chooses the supplier whose sales representative is the most likeable. (Tanner & Raymond, 2010) Hence, B2B marketing has shifted from the somewhat more traditional and rational economical approach to a more behavioral-based approach where factors like emotions, motivation and irrationality affects the purchasing process (Hadjikhani & LaPlaca, 2013). This indicates that B2B suppliers can take advantage of the fact that nobody solely acts professional and rational, by pushing on more than

<table>
<thead>
<tr>
<th>Buying Center Dimensions</th>
<th>New Buy</th>
<th>Rebuy</th>
</tr>
</thead>
<tbody>
<tr>
<td>People involved</td>
<td>Many</td>
<td>Few</td>
</tr>
<tr>
<td>Decision time</td>
<td>Long</td>
<td>Short</td>
</tr>
<tr>
<td>Problem definition</td>
<td>Uncertain</td>
<td>Well-defined</td>
</tr>
<tr>
<td>Buying objective</td>
<td>Good solution</td>
<td>Low-price suppliers</td>
</tr>
<tr>
<td>Suppliers consideration</td>
<td>New/present</td>
<td>Present</td>
</tr>
<tr>
<td>Buying influence</td>
<td>Technical/operating personnel</td>
<td>Purchasing agents</td>
</tr>
</tbody>
</table>

Table 3 - Differences between new buy and rebuy (Giambattista, 2005)
only rational and economical factors in their marketing and sales strategies (Pfoertsch & Scheel, 2012).

However, these irrational factors such as the sales representatives likeability can be a difficult task for companies to keep track on. One thing that can bring a certain degree of control over the somewhat fuzzy area of irrational aspects of B2B marketing is creating a strong and reliable brand. Sales representatives can use a company’s brand to their advantage, by advocating the brand image the purchaser can come to the conclusion that the products from just that brand is the best choice for them, even though there are far better products. An example of a company with a strong brand image is IBM, who had such an outstanding reputation that purchasing agents often used the phrase “Nobody ever got fired for buying IBM”. (Tanner & Raymond, 2010)

Both Tanner & Raymond (2010) and Wiersema (2013) conclude that business-to-business marketing has progressed into a more strategic matter than before. Where the selling firms are trying to gather as much knowledge as possible about their business customers in order to use the information to their advantage, while the purchasing firms are better informed and more perceptive as well as having a larger selection of viable alternative suppliers (Tanner & Raymond, 2010; Wiersema, 2013).

2.2.3.2 Business Brand Communication

As mentioned above, B2B selling firms have the ability to gain a certain level of control over the irrational aspects influencing the purchasing process in B2B markets by creating a strong brand (Lynch & De Chernatony, 2004; Tanner & Raymond, 2010). The most important functions that a business brand generates in B2B markets are: increased information efficiency, risk reduction and value added/image benefit creation (Kotler & Pfoertsch, 2007).

Nonetheless, business branding has gained far less attention and recognition in the academic world than B2C brands. There are however significant amounts of research conducted in the area, which indicate a positive outcome for B2B sellers who acknowledge the power of business brand and communicate the organization’s functional (rational) and emotional (irrational) brand values (Lynch & De Chernatony, 2004; Tanner & Raymond, 2010; Hadjikhani & LaPlaca, 2013).

Furthermore, Lynch & De Chernatony (2004) highlights the importance to first communicate the organization’s emotional brand values internally, in order for the brand values to more efficiently be transferred to the customers. This is mainly due to the high share of personal selling in the B2B market. Thus, the successfullness of the buyer-seller relationship is often dependent on the salesperson’s behavior and if he or she manages to behave aligned with the company’s stated brand values. (Lynch & De Chernatony, 2004)

2.2.4 Difference between product and service marketing

In early marketing literature and research the concept of service and service marketing have been absent, it was not until the 1970’s that the interest increased significantly. This led to a variety of
new research within the discipline, which challenged the traditional marketing theories, which are based on mass-produced and mass-distributed consumer goods. (Gummesson & Grönroos, 2012) Authors and researchers began swiftly to identify the differences between services and products, this was however not the easiest of tasks, but the general opinion was that a difference existed. Rushton & Carson (1989) claims that the main difference was that products or goods are produced while services are performed, the characteristics of the latter includes:

- Services are intangible, meaning it is not of a physical nature and cannot be touched hence it is not as easy for these to be evaluated.
- Services cannot be performed/produced before it is required, nor be stored in order to meet demand.
- Services are generally consumed whilst they are performed.

These characteristics led the service firms and governments to understand the necessity to define and explore the concept of service marketing, where identified main difference between product and service marketing are the difficulty to develop “…a concrete, tangible service offering” (Grönroos, 1978) together with the fact that the attitudes and capabilities of a firm’s staff are of high importance when a service is performed (Rushton & Carson, 1989).

Several authors have recognized that the services’ intangibility is a key concept that contributes to the need to separate this type of marketing with traditional product marketing (Grönroos, 1978; Rushton & Carson, 1989). However, Gordon et al. (1993) have acknowledged that whether or not a company is selling products or services, it all comes down to the ability to provide their business customers with what they want to buy. In order for both a product and service to be successful, the selling company needs to be aware of and understand how the customers evaluate the product/service. (Gordon, Calantone, & di Benedetto, 1993) Figure 3 shows how the intangibility and the ability to evaluate differ between goods and services, which indicates a higher degree of difficulty to physically evaluate services in comparison to traditional goods.

![Figure 3 - Comparison Goods and Services (Rushton & Carson, 1989)](image-url)
2.2.5 Important factors in IT marketing

The constant development of the technology behind cloud computing and SaaS, together with an increasing global competition made available by the Internet, have increased the importance of effective marketing strategies (Latussek, 2010). Companies operating in the SaaS industry must acknowledge this to better tackle competition and to ease the customers’ transition into the cloud. The latter is identified by Sarri (2014) to be an important factor and sometimes a demand from the customers in order to approve the transition to a SaaS solution.

Sarin (2012) claims that marketing of IT service, such as cloud computing & SaaS, is an uncovered topic in marketing literature and research, however there is more material on marketing of IT as a concept, thus not specified to products or services. Keyes (2010) has identified a critical aspect of marketing IT to be the ability to understand the unique features that exist in the market, such as the high degree of market uncertainty that is a result of the abrupt technological shifts that is significant for the ICT industry. Furthermore, she claims that no matter the type of product/service a company is selling, the fundamentals of marketing will remain the same. Figure 4 shows the activities that Keyes has acknowledged as important in order to create and communicate value to customers.

![Diagram of the fundamental activities of IT marketing](image)

**Figure 4 - The fundamental activities of IT marketing (Keyes, 2010)**

Due to the fact that the ICT industry is highly globalized and in constant change, the number of active players is enormous. A key marketing aspect, that could help firms to capture customers
and directed them away from competitors, is differentiation. Keyes (2010) have listed the three most common sources of product/service differentiation to be:

- **Product innovation** implies that a firm should create new products/services in order to stay ahead of the competition.
- **Customer intimacy** seeks to create a competitive advantage by develop intimate knowledge about customer needs in order to find out what satisfy them.
- **Operational excellence** is when companies are delivering their products/services with acceptable quality and product characteristics at the lowest possible cost.

### 2.3 Pricing Strategies

This section will provide literature and earlier research on pricing strategies as well as introduce and define important concepts, such as the most common pricing strategies and the pricing decision cycle. In addition, this section will provide literature on traditional ways to price software as well as shed light on earlier attempts to create guidelines used in order to price SaaS solutions.

#### 2.3.1 Characteristics of Pricing Strategies

Effective pricing is of high importance when it comes to the profitability and long-term success of a company (Calabrese & De Francesco, 2014). However, the underlying strategies to efficient pricing vary a great deal across industries, countries and customers. The most common method is to categorize them into the following groups (Hinterhuber, 2008):

- Cost-based pricing
- Competition-based pricing
- Customer value-based pricing

These three pricing strategies were, according to a research performed by Hinterhuber (2008), the most commonly used pricing strategies in practice.

#### 2.3.1.1 Cost-based pricing

The cost-based pricing approach is by far the historically most common pricing strategy, where each product or service is priced to yield a fair return after covering all costs. Indicating that it will, in theory, result in a stable profitability for the company. However there is a fundamental problem with this strategy that prevents it from being used in certain markets, the cost-based pricing assumes that costs are fixed for all products. “Economies of scale” is a common expression where the cost of the products is determined by the volume of the production, which is the reason why cost-based pricing is difficult to use in most industries. Industries that nevertheless use this pricing strategy are forced to estimate the production volume in order to set a price on their products, indicating that there is a great possibility that weak markets are overpricing while strong markets are underpricing their products. (Nagle & Holden, 2002)
2.3.1.2 Competition-based pricing

A competition-based pricing strategy is when a company is letting its competitors dictate the prices they set on their products and/or services. Many managers believe the act of cutting prices to align with competitors to be a strategic move. According to Nagle and Holden (2002) companies conducting their pricing along this strategy are simply getting their priorities confused, since they reduce profitability just in order to gain more market shares. However, this method is one of the most efficient ways to achieve larger sales objectives, but nothing comes for free in this world and the price to pay will be lower margins for companies following this pricing strategy (Nagle & Holden, 2002).

2.3.1.3 Value-based pricing

Hallberg and Andersson (2013) claims that value-based pricing is the most profitable strategy for pricing a product or service, where companies gives the pricing authority to sales and product managers, who are best positioned to understand the value a certain product or service generates for the customers. This can be compared with the traditional cost-based pricing, where financial managers possess the power of pricing the organization’s products and/or services, see Figure 5 for a comparison between the two different pricing strategies. (Nagle & Holden, 2002)

![Comparison cost- versus value-based pricing strategy](image)

However, value-based pricing will fail if the customer does not perceive the value that he or she is paying for. One misconception among marketers is that the customers, after using a product, know what it is worth to them without being told. Where Hallberg and Andersson (2013, p. 48) defines customer value as following:

"A customer's perceived preference for and evaluation of those product attributes, attribute performance, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations."

Another challenge with this method of pricing is that professional purchasing agents are rarely honest with what they are actually willing to pay for a certain product or service, and are very good at hiding the true value that product or service bring to their organization. (Nagle & Holden, 2002)
2.3.1.4 Comparison Cost-, Competition- and Value-Based Pricing

Table 4 summarizes the most important characteristics of these three above mentioned pricing strategies as well as provide main strengths and weaknesses to each strategy in order to conclude in an overall evaluation (Hinterhuber, 2008).

<table>
<thead>
<tr>
<th></th>
<th>Cost-Based Pricing</th>
<th>Competition-Based Pricing</th>
<th>Customer Value-Based Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Cost-based pricing approaches determine prices primarily with data from cost accounting.</td>
<td>Competition-based pricing approaches use anticipated or observed price levels of competitors as primary source for setting prices.</td>
<td>Customer value-based pricing approaches use the value a product or service delivers to a predefined segment of customers as the main factor for setting prices.</td>
</tr>
<tr>
<td><strong>Main Strengths</strong></td>
<td>Data readily available.</td>
<td>Data readily available.</td>
<td>Does take customers perspective into account.</td>
</tr>
<tr>
<td><strong>Main Weaknesses</strong></td>
<td>Does not take competition or customer willingness to pay into account.</td>
<td>Does not take customers and customer willingness to pay into account.</td>
<td>Data are difficult to obtain and to interpret, this pricing strategy may lead to relatively high prices, where long-term profitability needs to be taken into account and customer value is not given, it needs to be communicated.</td>
</tr>
<tr>
<td><strong>Overall Evaluation</strong></td>
<td>Overall weakest approach.</td>
<td>Sub-optimal approach for setting prices: appropriate for commodities (if – and only if – products/services in question cannot be differentiated).</td>
<td>Overall best approach, direct link to customer needs.</td>
</tr>
</tbody>
</table>

Table 4 - Comparison between the different pricing strategies (Hinterhuber, 2008)

2.3.2 Pricing decision

No matter of the chosen pricing strategy, Keyes (2010) states that the process each firm goes through when deciding upon a price for their product or service can be divided in eight different
aspects. These so-called generic factors are an essential part of the price determination and includes:

- **Costs**: It is an important aspect to establish the lowest possible price for a product/service, where costs include R&D, distribution and marketing.

- **Pricing objectives**: Does the firm aim to receive its investment with this product/service or does it is purpose to undermine competitors?

- **Organization and marketing objectives**: The company’s mission, vision, strategy and goals are important aspects when pricing the products/services.

- **Other marketing mix variables**: The price of a product/service is furthermore reliant on factors such as production, promotion and distribution, i.e. economy- and premium-priced products are not marketed through the same channels.

- **Buyers’ perceptions**: The buyers’ perception is an important aspect, since a firm have the ability to adjust its prices depending on what customer segment it is directing their products. For example, price-conscious buyers are attracted by low prices while value-conscious buyers take both price and quality into consideration.

- **Competitors**: Unless a firm holds a monopoly, competitors’ pricing models is a valuable aspect to be aware of.

- **Legal and regulatory issues**: Companies cannot rule out the role that governments can play in pricing decisions. For example, price controls can be invoked in order to limit inflation.

- **Channel member perceptions**: Channel members such as distributors, resellers, etc. all expect to buy a product for a discounted price in order for them to resell it with a reasonable profit. Hence, this is an important factor that affects the pricing of a product.

Furthermore, Kittlaus & Clough (2009) argues that a pricing decision contains several layers that create a stable foundation for price setting with the aim of maximizing the profit over time. Together, these layers generate the strategic pricing pyramid, Figure 6. Value creating forms the foundation, where a key input to determine the price structure is to gain a deep understanding of how products and services create value for customers. Before a price can be establish, communication tools need to be created as well as well-defined pricing procedures in order to be able to face aggressive customers and competitors. (Kittlaus & Clough, 2009)
### 2.3.3 Different Ways to Price Traditional Software

It is important to be aware of the characteristics of the offered product/service when designing the pricing model, as well as the market condition in the intended industry. The fundamental characteristics of digital goods, such as software, are according to Lehmann & Buxmann (2009):

- **Indestructability**: There is no loss of quality as a result of using the software.
- **Transmutability**: The software can be modified with little effort, which indicates a cost-effective generation of variants.
- **Reproducibility**: There is a possibility to copy the software at a low cost without losing quality.

In addition to these three fundamental characteristics, software products belong to the type of goods called “experience goods”, which indicates that the customer only can ascertain the value after the software is purchased and usage has begun. This fact can create an issue when software is starting to be priced according to a value-based pricing strategy. (Lehmann & Buxmann, 2009)

The most used charging method for traditional software is commonly known as “One Time Charge” or “Paid up License”. An advantage with this model is that it is a closed transaction; once it is paid for, the vendor only needs to keep track of maintenance entitlement. However in recent years, software vendors have tried to make products, priced with this method, better long-term producers of revenue by adding an option of a service/maintenance agreement. (Kittlaus & Clough, 2009) The revenue streams that a traditional software vendor has, can therefore be divided into three categories, where it is not uncommon to have one third of the revenue coming from each category (Cusumano, 2007):
• **Upfront License Fee:** A perpetual cost giving the customer the right to use that version
  of the software.

• **Maintenance Agreement:** This is normally an annual fee that provides the customer
  with software updates as well as some technical support.

• **Other Services:** This category consists of services required to install and integrate the
  software, to train users or customize the product.

However, more recent and up-to-date literature in this area claims that the vendors collect their
revenue from a significantly higher number of different revenue streams. These are (Laatikainen
& Ojala, 2014):

• Monthly or annual subscription fees
• Advertising based revenue
• Transaction based revenue (customers are charged based on the number of transactions
  they perform)
• Premium based revenue (revenue is generated from charging for premium versions
  besides the free versions)
• Revenue from implementation and maintenance services
• Software licensing

A majority of the literature agrees that a shift in revenue from license fee to services has affected
the software industry. This is partly due to a decline in prices for enterprise software. Where the
most radical price decline has occurred when products have become free of charge, like Google.
A reason that some vendors can offer their products free of charge is due to the characteristic
reproducibility, i.e. the marginal cost of copying software is next to nothing. (Cusumano, 2007)
Nowadays, software vendors hope to increase profit by offering their software with a
consumption-based pricing model, which would generate a steady flow of income (Lehmann
& Buxmann, 2009; Kittlaus & Clough, 2009).

### 2.3.4 Pricing SaaS

Cloud computing and software as a service (SaaS), further described in Section 2.1, has changed
the way that software is priced & sold (Ojala, 2013; Kittlaus & Clough, 2009) and comes with a
wide range of different pricing models. Some vendors have stayed with the more traditional
software pricing with a fixed monthly or annual license fee. Others have joined the newer
consumption-based method, while a few SaaS vendors have decided to offer their product free
of charge but embedded with advertisements. (Kittlaus & Clough, 2009) Gohad, Narendra, &
Ramachandran (2013) have however listed the most common methods to price cloud services
such as SaaS:

• **Perpetual Pricing:** This is similar to the traditional software license fee, where the
  customers pay an up-front cost and get in return a perpetual right to use the offering.
• **Renting:** The customer pays a negotiated cost over a period of time, whether or not the resource is used.

• **Subscription Based Pricing:** This is the most commonly used pricing model for SaaS according to Gohad, Narendra, & Ramachandran (2013), which allows users to predict their expenses. However, it is not a consumption-based pricing method.

• **Pay-as-you-go:** This model involves metering usage and charge based on actual use.

• **Tiered Pricing:** This is how Amazon prices their cloud services, where different tiers offer different specifications as well as Service Level Agreements (SLA) at specific prices per unit time.

• **Reserved Instances:** Another Amazon model, which give customers the option to make a small one-time payment for every reserved instance while they receive a discount on the hourly charge for that instance.

• **Spot Instances:** This model gives customers the ability to bid for unused cloud capacity; this model generates a periodically fluctuating price.

• **On Demand Instances:** This model allows customers to pay by the hour with no long-term commitments.

• **Per-Unit Pricing:** This model is normally applied to memory usage or data transfers, and is very similar to Tiered pricing but is denoted as more flexible.

• **Variable Pricing Models:** This method is based on the level of demand, regardless if it is the demand for a specific resource type, daytime vs. nighttime or spot prices.

• **Cloud Option Pricing Model:** This method is influenced by option pricing strategy, where the buyers can speculate and have a potential to earn a lot of money.

• **Agreements Based Billing:** This model allows businesses to adjust rates, promotions, discounts, etc. and due to the enhanced payment accuracy the customer satisfaction is high.

Even though the methods of pricing SaaS are very diverse and sometimes also very complex, some key conditions are clearness and transparency of pricing for customers and providers as well as the importance to determine the pricing metrics since they drive both revenue and perceived value (Laatikainen & Ojala, 2014; PwC, 2013). Another aspect that affects the pricing of SaaS is whether or not the offered solution is multi-tenant, since this generates a significantly lower maintenance cost for the service provider (Laatikainen & Ojala, 2014).
2.4 The Energy Sector

This master thesis is conducted at Tieto Energy Utilities, which is a department that works with IT solutions for the energy sector. The following section will therefore give a brief overview of the energy market in the Nordic region as well as describe the structure of the market and different characteristics in this specific industry. This chapter will give insights to how the energy market operates and what features are of essence during their purchase process.

2.4.1 Characteristics of the Energy Sector

The energy market is a commodity market that deals specifically with the trade and supply of energy. An energy market may refer to the trade of electricity, gas, coal, oil and carbon credits. The importance of trading energy has grown rapidly in Europe due to increased energy consumption and that countries are becoming increasingly integrated. Today there is almost no country that can supply its energy demand with its own energy. Energy trading enables countries to supply the energy demand while countering energy shortages and price fluctuations. (Vattenfall, 2013)

In the electricity market there are several players with different functions. Naturally, the producers are the players that own and operate power plants, and the consumers are the players that are the end customers. Another player are the retailers, who serve as a link between the producer and consumer. Retailers buy electricity directly from producers or the power exchange and resell it to consumers. A system operator maintains safe operation of the power system and administrates the electricity trading, which is a crucial operator in a functioning electricity market. There are also companies that are responsible of the financial adjustments in the electricity trading, referred to as balance responsible players. There are also grid owners that operate and maintain the grid, and provide an adequate power quality. The market for grid owners is a natural monopoly due to the high investment costs necessary to enter the market. (Söder & Amelin, 2011)

The electricity market in the Nordic countries has undergone great and far-reaching changes since the middle of the 1990s. Sweden deregulated the power market in 1996 and introduced new rules in order to foster competition within trading and production of electricity. Similar reforms have taken place in all the Nordic countries except for Iceland. The purpose of the deregulation has been to increase the freedom of choice for consumers and create better conditions for competition as well as improved use of resources in production. After the deregulation, Nord Pool was formed as the power exchange for the Nordic countries. Nord Pool is a market place for electricity producers, traders and large consumers. The power exchange facilitates trading of electricity between countries, thereby increasing the competition. (Energimyndigheten, 2004) Around 74 percent of all electricity in the Nordic region is traded through Nord Pool (Vattenfall, 2012).

Since the beginning of the 21st century, the three largest electricity producers in the Nordic region have together had a market share of around 40 percent. In 2013, Vattenfall produced the greatest share of electricity, followed by Statkraft and Fortum. The five largest electricity
producers also include E.ON and Skellefteå Kraft. (Energimyndigheten, 2014) Since the deregulation of the power market in Sweden, many are of the opinion that the electricity market is not working optimally. There are a few actors possessing the power production and the distribution, which favors neither the industry nor the individual consumers. (Andersson, Ahlberg, & Löberg, 2013) It is often claimed that the big power companies have significant market power, consequently making the Swedish electricity market an oligopolistic market (Bergman, 2014).

2.5 Summary and Key Takeaways of the Literature Review

A summary of the literature review will be presented here in order to provide the reader with the most prominent features in this chapter. The key takeaways drawn by the authors from this chapter are also presented. The objective and research questions in this study address four major areas: Cloud Computing, Business-to-Business Marketing, Pricing Strategies and The Energy Sector. All of which are explored and reviewed in the literature chapter.

The ICT industry is under continuous changes, where a new form of delivering IT has emerged over the last decade: cloud computing. This thesis addresses one of three service models of cloud computing: software as a service. SaaS is a well-discussed issue in the literature, however are the definitions quite diverse. The key characteristics of SaaS include reusability, data managed by provider, service customization, availability, scalability, pay per use and multi-tenancy (Lee, Lee, & Cheun, 2009; Laatikainen & Ojala, 2014). The authors of this thesis will from now on use the following definition of a true SaaS: offered/accessed over the Internet, consumption-based pricing and multi-tenant architecture.

The solutions, which Tieto Energy Utilities aims to transform into SaaS, are going to be offered to customers in the energy sector. This indicates that when creating a marketing strategy for these services, areas within the business-to-business marketing such as buying process, methods of communication as well as rational versus irrational factors are important to acknowledge. When transforming traditional on-premise software to SaaS, companies are changing a product to service. One key takeaway is that services are significantly more difficult to physically evaluate for the customers due to the fact that they are more intangible than products (Rushton & Carson, 1989). Differentiation is another important factor to take into consideration when operating in a sector with many competitors. Especially can product innovation, customer intimacy and operational excellence, create a competitive advantage.

The pricing strategy is an important factor when creating and communicating value to customers. The authors of this thesis are aiming to aid Tieto with guidelines useful when pricing new SaaS solutions, both in regard to the underlying strategy as well as the method used when collecting the payment. Of the three main pricing strategies: cost-based, competition-based and customer value-based pricing, Hinterhuber (2008) claims that value-based pricing is by far the best approach. This section of the literature chapter also includes important factors in pricing decisions as well as traditional ways to price IT. A key takeaway is that cloud computing and software as a service have change the way software is priced, traditionally the companies had three revenue streams: an upfront license fee, maintenance and service agreements. SaaS has
multiple different pricing option, however another key takeaways is that multi-tenancy generates a significantly lower maintenance cost for the provider, thus affecting the pricing of the solution.

The master thesis is performed at Tieto Energy Utilities, who provide IT solutions to the energy sector. Key takeaways from the last section of the literature review are that the energy market has during the last decades experienced many substantial changes and it has a tendency to operate similar to an oligopolistic market (Energimyndigheten, 2004; Bergman, 2014).
3 Research Methodology

Following chapter presents the research design and process of the data analysis to conduct the study. A case study has been chosen as the main research method. The last section discusses the validity, reliability and ethical aspects of the master thesis.

3.1 Research Methodological Approach

Paradigms are considered to act as philosophical frameworks that can lead the way for researchers when deciding on how the scientific research should be conducted (Collis & Hussey, 2014). In this master thesis, the researchers have taken an approach in the interpretivist paradigm, since the aim of this study was to investigate perceptions and actions of individuals within a contextual setting. The interpretive approach was appropriate for this study since it proposes that reality is subjective and dependent on context. A positivist paradigm would not be suitable since it suggests that reality is objective and static. (Denzin & Yvonna, 2011)

A research can take on different approaches depending on the aim of the study. Researchers taking a deductive research approach use a conceptual and structural framework and test it with empirical observations in order to work their way down to a particular conclusion. Generally, this can be seen as a method of moving from a more general level of information to the more specific. Inductive research works the opposite way, where observations of empirical reality are developed into theories. Thus moving from the more specific to the general. (Collis & Hussey, 2014) Due to the scope of this master thesis, it was appropriate that it took on an inductive approach in order to construct a conceptual model for marketing and pricing SaaS.

The research questions’ aim was to understand and explain the current situation in both the case company, external SaaS providers and consumers, where the contextual condition was relevant to investigate. (Yin, 2003) Due to the nature of the research questions, the scope of this study fell within the exploratory research methodology. A recommended technique used in this kind of research is performing a case study, which will be used in this master thesis. (Runeson & Höst, 2009; Collis & Hussey, 2014) Yin (2003) also recommends alternative methodologies to explanatory studies, like histories and experiments. The research that was performed at Tieto and external companies analyzed the current situation; therefore the use of histories was not applicable to this master thesis, because they focus on earlier events. Furthermore, the setting that was investigated was not under control by the researchers, which is a prerequisite when conducting experiments. (Yin, 2003) Action research is another methodology, but it requires longer periods of research and implementation work, which is not feasible in this study (Collis & Hussey, 2014). Considering the alternative research methodologies just mentioned, it is discovered that performing a case study is an appropriate approach for this master thesis.

3.1.1 Case Study

A case study is a methodology to explore a phenomenon in a natural setting using various methods in order to gain deep knowledge in the desired field (Collis & Hussey, 2014). According to Yin (2003):
“A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident”.

This methodology further relies on numerous sources of evidence and manages the technical distinctive situation in which there will be many more variables of interest than data points.

Runeson and Höst (2009) discuss three main characteristics of a case study. First of all it is flexible and able to cope with the complex and dynamic characteristics of real world phenomena. Secondly, the stated conclusions are based on a strong chain of evidence, gathered from multiple sources in a planned and dependable manner. Lastly, a case study increases existing knowledge in the field by being based on previously established theory or by building new theory.

Runeson and Höst (2009) have put together five major steps when conducting a case study, summarized in Figure 7.

![Figure 7 – Process of a case study (Runeson & Höst, 2009)](image)

A case study was the most appropriate methodology in order to answer the stated research questions of this master thesis. This method enabled the use of several different data gathering methods, which provided a more flexible approach to the research.

### 3.2 Research Process

The research process of this master thesis followed the case study process that Runeson and Höst (2009) have compiled, visualized in Figure 7. This model gave a clear and concise overview of the master thesis’ process.

#### 3.2.1 Case Study Design

The plan for the case study should contain the objective, the case, theory, research questions, methods and selection strategy (Robson, 2002). The objective and research questions can be found in the introductory chapter, whereas the theory can be read in the previous chapter. These parts of the study design were decided in cooperation with the supervisors from Tieto and KTH.

The research questions of this thesis were derived from brainstorming sessions with the supervisor and employees from Tieto in combination with exploratory literature review. The literature was gathered from the KTH Royal Institute of Technology’s database, KTH’s library, Google Scholar as well as several academic journals.
This thesis used a multi-case design, which is considered by Yin (2003) to be within the same methodological framework as the classical single-case study. Compared to a single-case study, a multi-case study is regarded to be more robust (Yin, 2003). This approach also allowed the authors to investigate SaaS from both a provider and customer perspective. The multi-case design involved three different case studies. One case study was performed internally at Tieto, another one with external benchmarking companies that offer SaaS and lastly one case study with customers using SaaS or traditional software.

3.2.2 Preparation for Data Collection

A qualitative method was used for conducting this master thesis. Case studies tend mostly to be based on qualitative methods, since these methods provide a richer and deeper description of a certain case (Runeson & Höst, 2009). Examples of qualitative data are printed material like text, figures and diagrams, as well as in-depth interviews and direct observations (Collis & Hussey, 2014). A quantitative study was not applicable in this study since there is a risk in reducing the complexity of what is being studied (Blomkvist & Hallin, 2014). The collection of qualitative data created a deeper understanding in the fields of software as a service, business-to-business marketing, pricing strategies and the energy sector.

In qualitative research the most common method for gathering empirical data is conducting interviews, which was used as the data collection method for this research. Interviews are frequently used since it is possible to learn how individuals reason in different question formulations, using relatively simple means. Interviews enable the opportunity to make unexpected discoveries, which is an essential dimension of qualitative research. This is an appropriate method when there exists an interest in gaining a deeper understanding of a phenomenon, when there is an aspiration to learn new dimensions of what is being studied, and when there is an interest in multiplicity. (Blomkvist & Hallin, 2014) All these interests existed in this master thesis.

According to Randolph (2008), interviews are an ideal method for collecting deep knowledge over a limited area. The face-to-face contact enables the researcher to follow up directly after an unclear answer, and thereby gain access to additional information that would not have been revealed in a questionnaire. An interview approach furthermore gives the researcher the opportunity to adjust the interview according to the respondent’s specific needs or situation.

Semi-structured interviews were used to collect qualitative data for this research. A framework of a few open-ended questions was prepared in order to receive answers that were longer and more developed, which required the interviewee to think and reflect about the questions. In semi-structured interviews, a couple of questions are prepared to encourage the respondent to talk about the main subjects and then the researcher comes up with additional questions during the course of the interview (Collis & Hussey, 2014). In order to create valid questions for the interviews, they were constructed in close reference to the literature review. Moreover, as much literature as possible was reviewed to obtain an accurate connection between chosen literature areas and research questions. Three different interview guidelines were prepared, one for the internal interviews, one for SaaS providers and one for the SaaS/software customers.
3.2.3 Collecting Evidence

Three different sources of data were used to conduct this master thesis. Gathered data helped the researchers to find solutions and answers to the research questions and the stated objective.

3.2.3.1 Brainstorming Sessions

Brainstorming sessions were conducted together with the supervisor and employees from Tieto in order to define the scope for the master thesis in terms of formulating the problem area, objective and research questions. Six different brainstorming sessions were conducted with employees from Tieto Energy Utilities, where their diverse backgrounds and roles in the company gave the authors different perspectives of the SaaS transformation project. The final brainstorming meeting was held with three Tieto employees, which was helpful in order to come up with the final framework for this master thesis.

3.2.3.2 Semi-structured Interviews

Semi-structured interviews were held with employees from Tieto, benchmarking companies that offer software as a service and customers that use SaaS or traditional software. The interviewees will be presented in chapter 4.

Employees that were interviewed internally at Tieto were chosen together with our supervisor at the company and with guidance from other employees at the department. The aim was to interview persons that had been involved in transforming traditional software to a SaaS at Tieto. The ambition was to meet persons that came from the business side of the transformation, since they would be most likely to answer questions regarding pricing and marketing of SaaS. When the interviews were conducted, the interviewees were asked if they had any suggestions on other employees that had worked with SaaS, which gave us additional internal interviews. The interviews had the purpose to gain knowledge about already executed SaaS transformation projects within Tieto, in order to get their key takeaways of their SaaS transformations in terms of pricing strategy, important factors to take into account when marketing SaaS and what the challenges were with offering software as a service.

Tieto Energy Utilities offers a wide range of solutions for the energy sector. It was therefore desirable to interview SaaS companies in the Nordic region that was targeting this specific industry, however no such company could be found. Consequently, the interviewed benchmarking companies instead originated from different industries in order to get a broad perspective of marketing and pricing strategies for SaaS. The sampling frame for the research was decided to be LinkedIn’s professional social network, since that was a good source of getting in contact with persons working at enterprises offering SaaS. To get in contact with these persons, an advanced feature search was used at LinkedIn where keywords were used such as “SaaS”, “Software as a Service” and “Cloud Computing” and the search results were restricted to “Stockholm”. Contacted persons worked at companies of different sizes, in different industries and in different stages in the company life cycle. They were contacted through their E-mail
address, where the purpose and scope of the master thesis were described, why they were contacted as well as what the authors wanted to get out of a potential interview.

The third part of the interviews was conducted from the customer side of the case, to see what they value in SaaS solutions and what factors they take into account when buying SaaS or traditional software. The customer interviewees were both Tieto’s current customers and other companies that buy SaaS from an external vendor. Tieto Energy Utilities’ current customers were chosen together with a sales representative from the department. The ambition was to interview employees that came from the business side of the company, rather than software or technical experts, since they would probably be most familiar with the areas that the interview questions revolved around. Tieto’s larger and smaller customers were interviewed, in order to get opinions about SaaS from both the perspective of larger and smaller customers. Tieto’s own customers were relevant to interview since they will be a crucial part of the transition in providing their software as a service. Collected data from these interviews can be helpful for Tieto Energy Utilities’ in this transition.

All interviews were directed using a set of semi-structured questions that formed a guideline, these questions can be found in Appendix 1. During the interviews a mobile phone was used to record the conversations with the permission of the interviewee. Both researchers were present during the interviews, where one of the researchers was responsible for asking the questions while the other researcher took notes in parallel. The note taker was also responsible of making sure that all areas of interest were covered in the interview. The recordings were thereafter transcribed in order for the researchers to easily return to the interview and analyze the findings and key takeaways. The meetings were held in person, but exceptions were made with a few of the interviewees and a telephone interview was instead executed. All interviews had duration of 30-60 minutes and were held in either English or Swedish depending on the respondents’ preference.

3.2.3.3 Literature Review

An extensive literature review was executed as a complementary data collecting method, and was the basis for this study in order to better understand the context of the investigation as well as support the analysis of the findings. Reviewing the literature was an important part of the research methodology, in order to comprehend the empirical data that was collected and use it as a base in the analysis. The literature review gave a wide-ranging understanding of the existing knowledge within the area of software as a service, as well as pricing and marketing strategies in this particular field. Literature was collected throughout the course of the master thesis.

The KTH Library search tools and databases were used to find the majority of the literature. Following databases were used to collect articles, reports and books:

- ACM Digital Library
- Emerald Journals & Books
- Google Books
- Google Scholar
The initial searches were conducted using the following key words:

- Cloud Computing
- Software as a Service
- Transformation to SaaS
- Marketing strategies SaaS
- Business-to-business Marketing
- Buying Process B2B
- Service Marketing
- Marketing of IT services
- Pricing strategies SaaS

This was a wide approach of searching for literature since the first phase was only to get an understanding of what kind of literature that was sought for in this thesis. Later on in the work process, the search process was narrowed down. Overall, most of the literature was gathered through KTH’s library but some material was also received from Tieto. A thorough analysis of the frequently cited authors and researchers was executed, as well as an inspection of the reference lists in their articles.

3.2.4 Analysis of Collected Data

Seidel (1998) means that analyzing qualitative data is a simple process. His model of analyzing gathered data consists of three parts: noticing, collecting and thinking about interesting things. Figure 8 illustrates the process and the relationships among its different parts.

![Figure 8 - Qualitative data analysis process (Seidel, 1998)](image-url)
The suggested analyzing process is not a linear process; below a few of the characteristics of the process are summarized (Seidel, 1998). The analysis of the qualitative data will follow these characteristics.

- **Iterative and progressive**: because the process is a cycle that keeps repeating.
- **Recursive**: the process is recursive because one part can call you back to a previous part.
- **Holographic**: because each step in the process contains the entire process.

Seidel’s model of analyzing qualitative data was the basis for analyzing the data in this master thesis.

The interviews were first recorded and transcribed, then analyzed and categorized in topics and themes that were derived from the interview data. In this kind of data analysis researchers avoid using already defined categories, instead allowing the categories and themes to emerge from the collected data (Kondracki, Wellman, & Amundson, 2002). The analysis of the data begun with reading all data independently and repeatedly in order to obtain a sense of the whole. Next, the data was read word by word to derive codes, first by highlighting similar words that appeared to capture key takeaways. Thereafter, both researches independently read the transcripts, took notes of the first impressions, thoughts and initial analysis. As this procedure was repeated, the codes was labeled and developed into areas that reflected more than one key thought. Finally, these areas were categorized depending on how they were linked and related to each other. These areas, and quotes derived from them, were then coupled with the existing theory and earlier findings that had derived from the literature review, in order to answer each research question of this thesis.

### 3.2.5 Reporting

The last step in the case study was reporting the findings and results. According to Runeson and Höst (2009), a case study report should include the following characteristics:

- Tell what the study was about.
- Communicate a clear sense of the studied case.
- Provide a “history of the inquiry” so the reader can see what was done, by whom and how.
- Provide basic data in focused form, so the reader can make sure that the conclusions are reasonable.
- Articulate the researcher’s conclusions and set them into a context they affect.

The master thesis followed the structure and template that was provided by Royal Institute of Technology, which included all the characteristics just mentioned.
3.3 Validity & Reliability

Limitations of a research are defined as the weakness or deficiencies in the research (Collis & Hussey, 2014), and will in this master thesis be discussed in terms of validity and reliability for the literature review and the interviews.

Secondary sources used in the theoretical framework were collected from legitimate and established books, reports, conference proceedings and journals in the field of Cloud Computing, Marketing and Pricing. All literature was critically analyzed by evaluating the reliability and validity of the sources’ research methods.

Yin (2003) argues that multiple sources of evidence should be used in order to attain construct validity, which is another reason why a multi-case study is applicable in this thesis. Furthermore, a great number of interviews were conducted to prevent impact from individual opinions and instead identify more common opinions in the discussed areas. The constructed validity could be improved if a larger number of interviews could have been conducted outside of Sweden and also with SaaS providers operating in the energy sector. However, the construct validity in this master thesis is considered to be high.

According to Collis and Hussey (2014), studies with a qualitative approach tend to have a lower reliability since the interpretations and observations are highly dependent on how the researcher explain and understand the reality. To attain a high reliability of the interviews, the researchers of this thesis have written a thorough description of the data collection process and have attached the interview framework in Appendix 1. The conducted interviews were recorded and transcribed in order to be able to analyze the collected data several times. Furthermore, notes were continuously taken during the interviews to avoid skewed results. Investigator triangulation was used, which means using more than one investigator in the data collecting and analysis process in order to increase the reliability and validity of the interviews (Collis & Hussey, 2014). This is a way of reducing the interviewer bias and it also reduces the risk of unreliable results.

One must also take into consideration the “interview effect”, where the interviewer may consciously or unconsciously influence the respondent to answer a particular way (Bell, 2006). Therefore, open-ended questions were asked in the interviews as an attempt to minimize this. Moreover, the researchers made sure not to reveal any of the results from other interviews until the interview was finished. In this way, the interviewees could give their honest opinion without being influenced by other respondents’ answers.

The timeframe of 20 weeks for this master thesis had effects on the sample size for the interviews, resulting in 28 semi-structured interviews. This might have had an influence on the reliability and validity of the findings, since the respondents’ opinions might not coincide with the majority of the SaaS suppliers’ and customers’ opinions. However, the main themes that emerged from the interviews were confirmed by the literature. A content analysis was used to derive the different areas, where a common challenge in this kind of analysis is to identify the key categories. Consequently there was a risk that the researchers failed to accurately represent the collected data and therefore affecting the reliability of the results. In order to alleviate this risk,
the researchers conducted the content analysis independently first and thereafter concluded on the results.

3.4 Ethical Aspects

The master thesis was carried out on behalf of Tieto where one of the conditions that had to be fulfilled was to sign a non-disclosure agreement, which is a legal contract between the researchers and Tieto. It was agreed that sensitive information would not be disclosed to a third party. Interviewed employees from Tieto have been completely anonymous in this thesis.

Moreover, all SaaS providers and customer have been anonymous, where companies have been given names such as “S.1” or “C.1”. The non-disclosure of the interviewees’ names and company name were an important aspect for the researchers. Only the researchers of this thesis are aware of what a specific interviewee said, and third parties will not be able to track back any results to a specific person or company.
4 Results

Following chapter presents the results from the evaluation of the current state of pricing and marketing strategies for software as a service. This thesis has taken a qualitative data approach, where the results have been gathered from semi-structured interviews conducted with external SaaS providers, employees at Tieto and customers purchasing SaaS or software. Lastly, the chapter is concluded with a summary.

4.1 Results from Internal Interviews with Tieto Employees

In this section the results from the conducted interviews with employees from Tieto will be presented. Six interviews were performed with employees from three different departments, of which five were of value for the thesis, the other one was merely an inspirational interview with great suggestions to which employees we should contact. The purpose with the internal interviews was to investigate if other departments had undergone a transformation from on-premise to a more cloud based solution, and if so what their takeaways were. A couple of the interviews were selected together with our supervisor at Tieto, others were found searching through the intranet while some were suggested during the other interviews.

Table 5 provides information about the interviewed Tieto employees.

<table>
<thead>
<tr>
<th>Interviewee Name (T=Tieto)</th>
<th>Area of work</th>
<th>Department</th>
<th>Country*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T.1</strong></td>
<td>Business Development</td>
<td>Healthcare and Welfare</td>
<td>Finland</td>
</tr>
<tr>
<td><strong>T.2</strong></td>
<td>Project Manager</td>
<td>Financial Services</td>
<td>Finland</td>
</tr>
<tr>
<td><strong>T.3</strong></td>
<td>Delivery Manager</td>
<td>Financial Services</td>
<td>Norway</td>
</tr>
<tr>
<td><strong>T.4</strong></td>
<td>Sales</td>
<td>Energy Utilities</td>
<td>Finland</td>
</tr>
<tr>
<td><strong>T.5</strong></td>
<td>Sales</td>
<td>Energy Utilities</td>
<td>Sweden</td>
</tr>
</tbody>
</table>

*The country the employee is located.

The results presented in the following sections are based on a content analysis. The data is comprised from the transcribed interviews with Tieto employees from departments undergoing/have undergone a transition from an on-premise to SaaS solution. During the analysis of the data, different themes emerged that had occurrences across all interviews. These areas concern their pricing models, important factors when making a transition, issues regarding multi-tenancy as well as challenges connected to a transition towards the cloud. At the end of this section additional results from the interviews are brought up that are worth to acknowledge.

4.1.1 Important Factors when Transforming Software into SaaS Solutions

All of the interviewed departments had experienced a transformation from an on-premise to a SaaS solution. Thus, an aspect that was highly discussed during the interviews was important factors to consider when doing a transformation.
Two employees stress the importance of scalability.

“The more the customers can share the environments, the more do they share the fixed costs for the solution. Hence, the SaaS solution needs to be scalable.” - T.2

“In order for the SaaS solution to be beneficial for Tieto it needs to be scalable!” - T.3

Two of the employees (T.1 & T.5) discuss the importance of cost efficiency, where T.1 also brings up the issue that old legacy products can represent.

“From an infrastructure point of view: cost-efficiency is most important because it’s more expensive to organize the resources of the customers with separate installations. [...] getting the lower price means that you should utilize the technology with sharing the resources.” - T.1

He continues and shares that they still have quite a long way to go, since they are trying to renew the entire system, where old legacy parts are running in parallel.

“It is not an overnight switch.” - T.1

Employee T.4 have acknowledged a shift in sales focus from a technical to a business perspective, while employee T.5 highlights the security as an important factor to consider in the transformation.

“A solution that has secure availability, back-ups and recovery is what the customers are currently requesting.” – T.5

4.1.2 Pricing Models

The pricing model was an interesting area to discuss, especially how the pricing had changed during the transformation in each department. Two of the interviewees (T.1 & T.2) claim that their SaaS have a pricing that charge the customers per user and month. Where employee T.4 claims that the customers are expecting a pricing per point of delivery, in other words a more volume-based pricing.

“Changing the pricing model from traditional to a SaaS pricing is not an overnight change [...] many of our customers have been using Tieto’s systems for 10-20 years [...] if they are buying the licenses and paying for the support and maintenance, only one to two customers are willing to change to a one-price model.” - T.1

One employee has acknowledged that there is a change within the customer’s organization.

“No organization wants to make a huge investment up-front anymore, instead they want to pay in line with their consumption.” - T.3
Employee T.1 discusses how they came up with the price currently used for their SaaS solution, where they have bundled the costs for the software, services and maintenance over a period of three years and divided it into a monthly fee.

Employee T.5 stresses that smaller companies experience a significant increase in costs when changing from the traditional on-premise to a SaaS solution. The breakeven between investing in servers and paying the monthly fee for the SaaS is only after a couple of months, indicating that it is more cost-efficient for the smaller customers to have their own servers.

### 4.1.3 Multi-Tenancy and Other Challenges

The issue regarding multi-tenancy was a highly interesting area from an early stage of the thesis as well as frequently discussed by the interviewees. The results below show different opinions regarding this, where some departments had such difficulties with multi-tenancy that their solution is not a true SaaS.

> “The limitations in our product is that each customer is requiring their own hardware, leading to a non-scalable solution.” - T.2

> “Multi-tenancy has several dimensions. It means different things for different parties.” - T.3

> “Customers do not care if it (the SaaS solution) is multi-tenant or not, of course the multi-tenancy is trying to give the most efficient way to offer the solution. But that is not the most important thing in some cases.” - T.1

The employee (T.1) continues with the issue where the data is stored, since some of their customers have restrictions preventing them from storing data outside of the European Nation. Where another employee (T.4) is of the opinion that a hybrid solution is needed where some customers are multi- and others are single-tenant.

In addition to the multi-tenancy issue, the interviewees brought up other challenging aspects that are worth to consider.

> “There is a technical challenge with delivering a secure service that will be available and up and running 24/7 without interruptions.” - T.1

> “With SaaS you won’t get any money up-front anymore, how will you be able to pay for all of your employees’ salaries?” - T.3

> “The greatest challenge is to keep the costs associated with SaaS as low as possible, since on-premise is in the long run more cost-efficient for smaller customers.” – T.5

Employee T.4 has experienced that the adaption of SaaS solutions is slow due to the customers’ legacy IT as well as current investments made during the last couple of years.
4.1.4 Other Interesting Factors

Employee T.4 brings up a couple of interesting aspects that could be useful to consider when transforming Tieto Energy Utilities’ Software to a SaaS delivery model.

“Generally, the electricity price is a challenge to the retail companies [in the energy sector] leading to a high demand to cut their costs” – T.4

T.4 also believe that during the last year the customers have changed their opinions regarding SaaS to a more positive attitude, due to the current digitalization as well as the marketing of SaaS.

4.2 Results from the Interviews with External SaaS Providers

In this section the results from the conducted interviews with external SaaS providers will be presented. 17 interviews were performed, of which 15 were valuable in a SaaS provider’s perspective. The other two were not relevant since they were not able to disclose their strategies for pricing and marketing of SaaS due to confidentiality restrictions. The companies were selected in order to receive a wide range of different SaaS offerings, as well as company size and phases in the business life cycle. The reason why a wide range of different SaaS offerings were desirable, was due to Tieto’s future focus to transform their diverse portfolio into SaaS solutions. Hence, a wider range was selected in order to investigate if any differences (in price, marketing strategy etc.) were present between the offerings. Many of the companies that were found as potential external SaaS provider where in an early stage in the business life cycle and also fairly small with only a handful of employees. Tieto is as stated earlier; an international provider of IT services and can be classified as a mature company, which indicates that an overrepresentation of small start-ups was therefore not ideal. Thus the selection of the external SaaS providers were in the end of the data collection solely based on the company’s phase in the business life cycle.

Table 6 provides an overview of the different SaaS providers that were interviewed and used as benchmarking companies in this thesis.

<table>
<thead>
<tr>
<th>Company Name (S=SaaS Provider)</th>
<th>Interviewee's Position in Company</th>
<th>SaaS Offering</th>
<th>Phase in Business Life Cycle*</th>
<th>Size of the Company**</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.1</td>
<td>Executive Consultant</td>
<td>Wide range of offerings, e.g. within Analytics, Big Data, Sales and Marketing</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>S.2</td>
<td>Business Development Manager</td>
<td>Online Accounting</td>
<td>Growth</td>
<td>Medium</td>
</tr>
<tr>
<td>S.3</td>
<td>Country Manager Sweden</td>
<td>Nordic partner to a major SaaS provider</td>
<td>Growth</td>
<td>Medium</td>
</tr>
<tr>
<td>S.4</td>
<td>Sales Director</td>
<td>Workforce Management System</td>
<td>Start-up</td>
<td>Small</td>
</tr>
</tbody>
</table>
The results presented in the following sections are based on a content analysis of the data comprised from the transcribed interviews with the SaaS providers. During the analysis of the data, different themes emerged that had occurrences across all interviews. These areas dealt with marketing and pricing strategies for SaaS, challenges in supplying SaaS as well as other important factors to take into account when making a transition from an on-premise solution to a SaaS offering.

### 4.2.1 Important Factors when Marketing SaaS

When asking the interviewees about important factors in the marketing of SaaS, the answers were quite diverse. The authors have picked out the most common aspects that were brought up.

<table>
<thead>
<tr>
<th>S.5</th>
<th>Sales Man</th>
<th>School Administrative System</th>
<th>Maturity</th>
<th>Small</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.6a</td>
<td>Software Developer</td>
<td>Retail Management Service</td>
<td>Start-up</td>
<td>Small</td>
</tr>
<tr>
<td>S.6b</td>
<td>CEO</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>S.7</td>
<td>Sales Director</td>
<td>Optimized E-sourcing Service</td>
<td>Start-up</td>
<td>Small</td>
</tr>
<tr>
<td>S.8</td>
<td>Country Manager</td>
<td>Project Management</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
<tr>
<td>S.9</td>
<td>Product and Solution Manager</td>
<td>Network Security</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
<tr>
<td>S.10</td>
<td>Head of Product Marketing</td>
<td>Telecommunication System</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>S.11</td>
<td>Sales Area Manager Scandinavia</td>
<td>Data Analysis Tool</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>S.12</td>
<td>Head of Sales Development</td>
<td>Telecommunication system</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>S.13</td>
<td>Sales Director</td>
<td>Mobile Payment Service</td>
<td>Start-up</td>
<td>Small</td>
</tr>
<tr>
<td>S.14</td>
<td>Marketing Director</td>
<td>Procurement, Purchase &amp; Tendering Solution</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
<tr>
<td>S.15</td>
<td>Product Marketing Manager</td>
<td>Human Resource System</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
</tbody>
</table>

**Table 6 - List of interviews with external providers**

* Four different phases: Start-up, Growth, Maturity and Decline.
** Three categories based on number of employees: Small (up to 50 employees), Medium (51 - 1000 employees) and Large (Over 1001 employees).
**Simplicity/Easy On-Boarding**

A third of the interviewed SaaS providers stated that a key aspect to push when marketing SaaS is an easy on boarding, i.e. simplicity to use the system.

“We need to market that it is easy to use, otherwise the system will not be used by our customers” - S.8

“Easy on-boarding is a key in order to get our customers interested [...] we use words such as Smart, Simple and Easy when marketing our SaaS.” - S.15

However, some of the interviewees do not fully agree, since they have difficulties with the customers’ preconceptions that SaaS is a “plug and play” system.

“One of our biggest challenges is to clarify for our potential customers that our SaaS is not a turn key solution [...] it is not as simple to use our SaaS as starting an Instagram account.” - S.4

**Irrational Factors**

Aligned with the above-mentioned aspect, a majority of the interviewees agree that irrational factors play an important part when marketing SaaS. Rational factors such as price and security are of course vital and needs to be present. However, most of the providers claim that the irrational factors are the ones they are marketing the most.

“Price is important, but not as important as the provider-customer relationship and trust” - S.9

“You should never underestimate the irrational aspect of marketing, since it creates security for the customer” - S.5

“Trust is important!” - S.12

“It’s all about psychologically make the customers understand how the product works” - S.7

Some of the interviewees add that it is important to build good relationship with the customers as well as provide a personal contact.

“Our focus has not been on marketing our product, but to personally contact potential customers” - S.13

“Both rational and irrational factors are important [...] we focus however on taking care of our customers and give them great service.” - S.10

**Brand**

A handful of the external providers brought up the importance of a strong brand when marketing their SaaS offerings, both when entering new markets as well as a good foundation when building customer relationships.

“A strong brand is a great help when entering an immature market.” - S.1
Understand the Customer
The last aspect, discussed by some of the providers, was the importance to understand the customers and their industry in order to market the added values important for just that customer.

“We use experts in each industry we enter in order to gain information about how to create value for that specific industry” - S.6

“We need to understand our customers’ need” - S.14

4.2.2 Pricing Models
Pricing models was a highly discussed area during the interviews. The authors of this master thesis have divided these findings into two different categories, which are significant for how the companies price their SaaS offerings. The two parts are the pricing strategy and charging method. The pricing strategy consists of three different sub categories that are frequently used in the literature: value-based, cost-based and competition-based pricing. This pricing strategy is the foundation on which the companies develop their pricing model.

In Table 7 the results from the interviewed SaaS providers are shown in regard to the company’s pricing strategy. Value-based pricing was the most frequently used pricing strategy, whereas cost-based and competition-based pricing was used by a couple of the companies. Interviewee from company S.1 expressed that a trend can be identified in the SaaS industry within pricing.

“The world is going towards more value-based pricing.” - S.1

This view was further enhanced by company S.6 that expressed that they had started off their business with a cost-based pricing strategy, but after a while they realized that they wanted to move towards a value-based pricing strategy. The reason behind this was that they understood that they were underpricing their SaaS, and did not charge the customer for what value the service actually created. In order to price according to value, the company has now specialized in a couple of industries that they possess good knowledge in and really try to understand what value that is being created with their SaaS offering and set a price tag on this. Some of the companies described that they had the ambition to use a value-based pricing, but due to the complexity of understanding what value their SaaS created for the customers and what this was worth, they had chosen another pricing approach. Company S.13 explained that they could not use a value-based approach since their SaaS was operating in a commodity industry, therefore a cost-based strategy was more appropriate.
### Table 7: External SaaS providers' pricing strategies

<table>
<thead>
<tr>
<th>Pricing Strategy</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value-Based Pricing</td>
<td>S.6, S.7, S.8, S.10, S.14, S.15</td>
</tr>
<tr>
<td>Cost-Based Pricing</td>
<td>S.9, S.10, S.13</td>
</tr>
<tr>
<td>Competition-Based Pricing</td>
<td>S.4, S.11, S.14</td>
</tr>
<tr>
<td>No Information</td>
<td>S.1, S.2, S.3, S.5, S.12</td>
</tr>
</tbody>
</table>

The interviewees have also brought up the charging method, where six different methods have been identified that can be seen in Table 8. 42 percent of the SaaS providers were charging the customers by price per users, whilst two companies charged the price per volume. Two of the companies used a shared revenue model, meaning the supplier charges the customers a percentage of their sales. Another charging method used by company S.7 was charging a percentage of the customer’s savings generated by implementing their SaaS.

### Table 8: External SaaS providers' charging methods

<table>
<thead>
<tr>
<th>Charging Method</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price/Volume</td>
<td>S.2, S.9</td>
</tr>
<tr>
<td>Percentage of Customer’s Increased Revenue</td>
<td>S.12, S.13</td>
</tr>
<tr>
<td>Percentage of Customer’s Savings</td>
<td>S.7</td>
</tr>
<tr>
<td>No Information</td>
<td>S.1, S.14</td>
</tr>
</tbody>
</table>

Seven of the suppliers had solely one revenue stream for charging their SaaS and seven of the companies had multiple revenue streams. For example, company S.4 had three different revenue streams: an initial cost for implementing the SaaS, education and monthly fee for the SaaS solution. A similar breakdown was shown in company S.5’s charging model: a one-time license cost for getting access to the system, maintenance fee based on the size of the customer and a yearly fee for the SaaS.

Among the interview results it was also found that five of the SaaS providers offered different types of subscriptions depending on the customer’s usage (S.2, S.3, S.7, S.8, S.11). All these companies had divided the subscriptions in similar ways. For instance, company S.2 had three different forms based on the number of transactions made by the customer in the online accounting system per year, these subscriptions were “Start-up”, “Small Business” and “Professional”. The subscriptions also included different features and service levels.

A majority of the interviewed companies said that they charged their customers on a monthly basis. However, a couple of the suppliers used a yearly charging method.
“It is difficult to charge the customers per month, since it requires a stable customer base with […] instead we charge them per year” - S.11

Some of the suppliers explained that they very often deviated from the standardized pricing model and it all came down to a negotiating situation with the customer. So that an individual price was set for each customer, depending on the size of the company and number of users.

“One of our larger customers got a really cheap price because they will potentially help us get more customers and be a strong reference company.” - S.6

Company S.2 and S.9 have undergone the transition of transforming a software to a SaaS solution. They described that the price was based on adding the license and service fee for the traditional software and dividing it per month to get a price per user or volume per month. Suppliers S.6 and S.7 expressed that their pricing was very agile and that they used a lot of try and error in their development of a price structure.

“We set a price, show it to the customers and wait for a reaction.” - S.6

4.2.3 Challenges when Offering SaaS

During the interviews with the external SaaS providers the challenges when offering SaaS was a very discussed subject. The interviewees identified several areas where challenges existed. The authors of this master thesis have selected the most frequently acknowledged areas, which will be presented in this section.

Scalability

A third of the interviewed SaaS providers have acknowledge a difficulty to create and keep their solution scalable, which is one of the significant aspects of SaaS.

“Our solution is dependent on scalability […] we have worked with that since day one” - S.13

Most of the scalability issue originates from a financial aspect, where some of the providers allow their customers to scale up but not down, in order to guarantee a minimum amount of revenue.

“It is a challenge to make sure that the entire offer is scalable […] however we have a minimum commitment in order to guarantee some kind of revenue” - S.12

“We have a minimum fee in order to make sure we receive some revenue” - S.15

“A SaaS should be completely scalable, but it is impossible for a company to survive with an offering like that” - S.15

“Our solution is scalable in one direction, it is only possible to scale up the subscription” - S.15
Security
A handful of the interviewees brought up the security as a main challenge, and especially that this is an aspect that customers are very eager to discuss when considering a SaaS solution. Customers purchasing SaaS are questioning what happens to data stored in the cloud.

“The security is a challenge […] what happens to the data that is stored in the cloud?” - S.13

Another aspect is that laws and regulations restrict companies operating in the public sector, making it difficult for them to store data wherever they want.

“The security with SaaS is an issue […] public companies are not allowed to store any data outside of Sweden, which is not often fulfilled by cloud services” - S.15

“The combination of cloud services and the Swedish law PUL is a challenge.” - S.15

Pricing
Another issue discussed with the external SaaS providers where the difficulty to price the solution. Some had started with one model and quickly changed to another.

“We lost a potential customer due to the fact that our solution was too cheap, which made the customer skeptical to our ability to carry out the order” - S.6

While other providers identified a challenge to price their product, due to the free versions that companies like Google offers, this have created a preconception among customers that SaaS, as well as software for that reason, should be free.

“Some customer believe that a SaaS solution doesn’t cost anything to build or maintain, therefore they only want to pay a small price for the offering” - S.7

Commission and the Sales Force
A commonly brought up aspect when discussing challenges when offering SaaS with the external providers were the issue with the sales force and their commission.

“One challenge is that the salespeople expect to receive their commission after each sale, which is not possible with a SaaS pricing.” - S.9

“One of our greatest challenge is how the SaaS is sold […] selling SaaS requires competent salespeople” - S.10

Standardization
Some of the interviewees identified that the standardization of the SaaS offerings led to a quite significant challenge. Where several providers had customers wishing to customize the offerings, i.e. moving away from the standardized solutions.
“Standardization is a challenge since most customers have their own IT department with inputs and a wish to make the offering customized” - S.12

“In order to be able to have an agile development, the SaaS solution needs to be extremely standardized” - S.12

“The desire to customize the SaaS solution increase with the size of the customer’s organization” - S.14

4.2.4 Multi-Tenancy

In an early stage of conducting the interviews, multi-tenancy was an area that was frequently discussed by the interviewees. The results show different opinions regarding this, where some suppliers saw it as an issue whilst some did not.

Some of the suppliers described that multi-tenancy can be an issue for some customers. Especially for those customers who have a lot of knowledge within IT and for the public sector that handle a lot of sensitive data. Regulations and laws within different industries also affect the customer’s view on multi-tenancy.

“The technique and conditions have changed with SaaS, while rules and regulations are lacking behind. Marketing of SaaS is therefore about trying to convince the customers that current regulations and laws are followed.” - S.1

However, according to several of the SaaS providers, start-ups and smaller companies are more open to sharing instances with multiple customers.

“The majority of our customers are smaller businesses, and for them multi-tenancy is not an issue.” - S.2

“We work a lot with start-up companies and they are more open to this kind of technique.” - S.13

Two companies are of the opinion that the attitude to multi-tenancy is a generation issue.

“The older generation is more skeptical about this, while the younger generation do not question multi-tenancy.” - S.1

Moreover, two suppliers think that customers who are used to hosting their own software in house are more skeptical towards SaaS and also multi-tenancy.

“Customers that I have perceived as having issues with multi-tenancy, are often those companies that are used to having their own IT department and have their servers in the basement in the company building.” - S.13

Five suppliers think that multi-tenancy is a past issue and that the safety concern about multi-tenancy has disappeared during the last couple of years.
“The safety concerns about multi-tenantancy has started to grow away and disappear.” - S.4

“During the last couple of years the maturity, safety and knowledge has increased.” - S.5

“The customers have gotten used to multi-tenantancy and this is no longer an issue. They now see the advantages with multi-tenantancy.” - S.14

Concerns about multi-tenantancy put high demands on the suppliers, both that the safety can be assured and that the suppliers are able to convey to their customers that multi-tenantancy is not a problem. Several of the companies pointed out the importance for a SaaS provider to have a technical expert that can talk to the customers about their safety concerns. Furthermore, it is important to inform the customer that neither the SaaS provider nor other customers, who are on the same instance, can get access to their data.

### 4.2.5 Shift in Sales Force Focus?

A couple of the interviewees mentioned that the sales force focus has potentially changed with SaaS. Company S.1 explained that they are now selling their SaaS more directly towards the core business rather than the IT department. Mainly as a result of that the customer’s technical requirements are reduced in the purchase of SaaS. When they sold traditional software the buyers were often IT persons and they decided which software to buy. S.3 can also see this shift in sales focus, and explains that their buyers use the IT department as a support in the buying process and in the implementation of the SaaS.

“Selling SaaS gives us a new kind of buyer which demand a new kind of communication. [...] It is important for us to understand what drives these new buyers.” - S.1

SaaS provider S.14 has however not seen this shift in sales focus. However, they have noticed a change in customer behavior where their customers want to do the majority of the sales process online on their website. This requires a website which can give the customers the information they want about the SaaS offerings.

Some suppliers said that they did not see a shift in sales force focus. Provider S.15 did however already sell their SaaS to the core business.

### 4.3 Results from Interviews with Customers

In this section the results from the conducted interviews with customers (companies purchasing SaaS) will be presented. Seven interviews were performed of which two companies were originally intended to be interviewed as external SaaS providers, but had better input and knowledge from a customer’s point of view. The companies were mainly selected from Tieto’s current customer base, in order to receive first hand input on their thoughts about SaaS. The authors also interviewed companies operating in the same industry as Tieto, in order to illustrate if any differences exist between selling and purchasing SaaS within the companies. Interviewee C.5 and C.6 come from the same company as interviewee S.12 and S.13 respectively.
Table 9 provides an overview of the interviewed customers purchasing SaaS.

<table>
<thead>
<tr>
<th>Company Name (C=Customer)</th>
<th>Interviewee’s Position in Company</th>
<th>Industry</th>
<th>Phase in Business Life Cycle*</th>
<th>Size of the Company**</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>VP Billing and Debt Collection</td>
<td>Energy sector</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>C.2</td>
<td>System Administrator</td>
<td>Energy sector</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
<tr>
<td>C.3</td>
<td>IT Strategist</td>
<td>Energy sector</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>C.4</td>
<td>CEO</td>
<td>Energy sector</td>
<td>Maturity</td>
<td>Medium</td>
</tr>
<tr>
<td>C.5</td>
<td>Head of IT Services Sourcing</td>
<td>ICT sector</td>
<td>Maturity</td>
<td>Large</td>
</tr>
<tr>
<td>C.6</td>
<td>Sales Director</td>
<td>Electronic Billing Industry</td>
<td>Start-up</td>
<td>Small</td>
</tr>
<tr>
<td>C.7</td>
<td>Category Manager Software</td>
<td>ICT sector</td>
<td>Maturity</td>
<td>Large</td>
</tr>
</tbody>
</table>

Table 9 - List of interviewed customers

* Four different phases: Start-up, Growth, Maturity and Decline
** Three categories based on number of employees: Small (up to 50 employees), Medium (51 - 1000 employees) and Large (Over 1001 employees).

The results presented in the following sections are based on a content analysis of the data comprised from the transcribed interviews with the customers purchasing SaaS or software. During the analysis of the data, different themes emerged that had occurrences across all interviews. These areas dealt with reasons why/why not SaaS is currently purchased, important aspects when purchasing SaaS/software and choosing a provider, preferences regarding pricing model for SaaS, expectations when purchasing SaaS as well as thoughts on marketing SaaS - rational vs. irrational factors.

### 4.3.1 Reasons Why/Why Not SaaS is Currently Purchased

During the interviews with the customers it became obvious that far from all companies were currently purchasing SaaS solutions. The authors of this thesis decided to investigate why or why not SaaS existed among the customers.

In Table 10 the results from the interviewed customers are presented in regard to that company’s current situation. The authors have identified three different answers to the question: “Do you currently purchase any SaaS solutions?” where the most common answer was that they did purchase SaaS, but only to cover smaller systems/assignments. The second most common was shared between companies whom purchases and the ones that do not purchase SaaS.
Of the interviewed companies, 28 percent of the customers purchase SaaS (C.6, C.7) while 43 percent only purchases smaller SaaS solutions (C.1, C.3, C.5). 29 percent of the customers (C.2, C.4) do not currently purchase any SaaS solutions at all. The underlying reasons why or why not they have decided to purchase SaaS were rather diverse.

The companies purchasing SaaS did so due to a handful of different reasons. The ones that were most frequently brought up were that cloud services are cheaper than having it as an on-premise solution and that SaaS generates certain flexibility.

“We are using SaaS solutions to lower our costs and to avoid maintenance of servers.” - C.6

“We are purchasing SaaS since it generates flexibility and has a good price […] With SaaS, you do not have to keep track of what you own or what license to pay, cloud solutions are much easier to deal with.” - C.7

Some customers have acknowledged that many software suppliers are moving into the cloud, which forces them to start to consider SaaS and other cloud solutions.

“We know that the majority of our suppliers are moving towards cloud solutions […] we will soon be forced to do the same.” - C.2

Among the companies that are avoiding SaaS solutions, the most common reason was that the company had invested a lot of money in server parks on-premise.

“We have invested a great deal of money in server parks, it has been our intention from the start to own and operate the systems ourselves.” - C.2

“We have a lot of money invested in our current systems and we need to get a payback on these investments before making any new ones” - C.3

One customer (C.3) claims that the most prominent reason why they are not purchasing larger and more business critical systems as a SaaS is due to the security issues around SaaS. Another aspect was due to national laws and regulations, preventing them from purchasing cloud services.

“There are several reasons why or why not one should purchase SaaS. The security and integrity are one aspect, where is my data located, which country? Availability and dependability are other issues as well as national laws and regulations.” - C.1
“It would be cheaper to have everything in the cloud, but we don’t since you lose control of important data and information” - C.4

In addition to the reasons why SaaS is currently purchased, a discussion around the disadvantages of this delivery model emerged. The factors that occurred most frequently across the customer interviews were the security, the handling and retrieval of data as well as the lack of customization.

“The biggest disadvantage with SaaS is the security […] the SaaS provider needs to be competent and know what they are doing.” - C.5

“Data retrieval is a great technical challenge.” - C.5

“A SaaS solution is not possible if you have a customized system.” - C.7

4.3.2 Expectations and Important Factors when purchasing SaaS/Software

The conducted interviews with customers resulted in many different opinions regarding important aspects when purchasing SaaS or software and when choosing a provider. However, all customers expressed that security was an important factor to take into consideration when purchasing SaaS.

“Security is an important question. In order for SaaS to be an attractive alternative the solution needs to feel stable. […] It is important that the suppliers have the correct knowledge and can convey the image of having control over the situation”. - C.2

“Overall, security is the most important requirement. We want the suppliers of our SaaS solutions to have a high level of understanding security. The suppliers need to know what happens to the data that we have in the SaaS solution and how this data can be handled in a secure manner. […] A lot of discussions with our SaaS providers deal with security assessments.” - C.5

“Internally we have split opinions about the security aspects of SaaS. The IT department are more concerned about this compared to employees coming from the business side. This is probably based on the fact that the IT department posses more knowledge in the field and feel a greater responsibility for the SaaS.” - C.2

A couple of the customers expressed that a high level of standardization could sometimes be an issue when buying SaaS. Some level of customization was therefore desirable in order for the solution to fit into the company’s requests.

“If we would purchase SaaS we would like to have a little customization and put a personal touch into the solution, for example that our IT staff can modify it according to our needs.” - C.4
“Standardization in the SaaS offering results in a good price- and cost level, but there should be some room for flexibility so we can insert our own codes, configurations and individualization. [...] Standardization of course lowers the cost for the SaaS, but is it good for the customer?” - C.1

“In the cloud our company and our competitors all look the same thanks to the standardization. This can be good or bad. Maybe the standardization makes it harder for the customer, because a certain customization of a solution might help us to differentiate us from our competitors?” - C.1

One of the customers had the experience of enabling customization in the SaaS offering.

“For a higher price, some suppliers can offer some customization of their SaaS.” - C.5

However, customer C.7 was not concerned with a standardized solution.

“The company strategy is to utilize standardized solutions in the cloud because that results in flexibility and a desirable pricing.” - C.7

Several of the customers agreed upon the fact that the reliability of the supplier is extremely important, both in terms of knowledge, competence, credibility and the financial condition of the company. Some also mentioned that they value companies that offer a wide range of solutions and services, because they want to avoid having too many suppliers to handle.

“We want a SaaS supplier that can provide us with different larger systems that can support a big share of our core processes. We have a strategy where we want fewer and larger systems, and therefore as few suppliers as possible.” - C.3

Five out of the seven interviewed customers described price as a crucial factor in the purchasing process of SaaS.

“When evaluating SaaS solutions, 50 percent the price and remaining 50 percent are other important factors.” - C.3

A couple of the companies pointed out that SaaS needs to be scalable.

“As a customer you should be able to scale the SaaS up and down depending on our demand and usage. If the SaaS is scalable it decreases the risk that we take.” - C.1

Three of the customers described the importance of the level of customer service that the SaaS supplier offers. Service level agreements (SLAs) were an important aspect in order to know which services the SaaS provider will furnish after the sale.

“The interaction with the SaaS provider after the sale is very important. We value personal connection and a provider that can offer geographically local support.” - C.1
Customer C.5 described an agreement that they had with one of their SaaS providers. The standardization of SaaS results in automatic updates of the software without any action from the customer.

“With our SaaS solutions that are used by a great number of our employees, we have an agreement with the provider that they have to inform us ahead of time before an update of the SaaS takes place. [...] One time, a provider updated one of our SaaS solutions, which caused problems for us, because the following morning our staff did not recognize the new interface. The following consequences was that we had to spend a lot of time and money on developing new manuals for the new version of the SaaS.” - C.5

4.3.3 Thoughts on Marketing SaaS - Rational vs. Irrational Factors
A highly discussed area during the interviews with the customers was if their decision and purchasing process were based on rational or irrational factors. Three out of seven customers (C.3, C.5, C.7) have a procurement process based on only rational factors. Some have even removed the suppliers name in order to evade any irrational factors influencing the decision-making.

“Price and functionality are the most important aspects to explore when making a purchasing decision [...] irrational factors do exist, but it is my job to make sure that they are ignored. [...] In every procurement, we make every supplier anonymous in order to remove any influence of irrational factors.” - C.7

“We are an organization, everything needs to be procured, our tendering process removes some of the gut feeling you can have towards some suppliers.” - C.3

However, a majority of the customers agree that irrational factor have a significant impact in the decision process.

“I believe that suppliers selling SaaS will shift focus from technical aspects to building relationships” - C.1

“We are often logical and rational to a certain extent [...] they are basic needs. However when you have your shortlist with three suppliers left other factor are more present such as how well prepared the salesperson is, references as well as the chemistry between us and the sales representative.” - C.1

“The SaaS provider’s competence are way more important than rational factors such as the price” - C.4

“It is easy to get an information overload, i.e. that you have too much information [...] that leads to a decision based on our gut feeling since we can not determine which one of the suppliers that is the best. This is when it becomes important to reflect on what kind of company it is and if they are similar to us” - C.6

“Irrational factors influences our decision process when we purchase SaaS” - C.6
"The rational factor are not that different between the SaaS providers [...] the gut feeling plays an important role in the decision making process.” - C.2

One of the customers discusses the importance that the supplier has a broad knowledge of the targeted industry, in order for the supplier to guide the customer and tell them how the SaaS solution is beneficial for the customer.

“I believe that the suppliers need to be a bit proactive in their marketing of SaaS and guide the customers by pointing out how a move into the cloud will change our everyday business [...] and how we can prepare ourselves and the company for a move into the cloud [...] another aspect is which factors that we need to consider when moving from on-premise to SaaS ” - C.2

4.3.4 Preferences Regarding Pricing Model for SaaS

Of the seven interviewed customers, six of them had the knowledge to give an opinion about pricing of SaaS. Four of the interviewees thought that SaaS in general had an attractive pricing approach in terms of the variability and flexibility. They described the importance for them to be able to scale upwards and downwards in terms of number of users or usage in the SaaS solution.

“SaaS enables a variable pricing, based on for example number of transactions we make or number of employees using the service. This charging method takes away high implementation costs that are often related to traditional on-premise solutions. A variable pricing is more optimal for us.” - C.3

Both company C.1 and C.3 mentioned that they want to pay for the value that the SaaS generates. Furthermore, that the actual price might not be the most important component when negotiating a price with their SaaS provider.

“In the end I do not think that the price level matter so much. Instead the difference between the price and potential revenue matters, this gap is what is important.” - C.1

Company C.1 further discusses the importance of handling risk.

“We want a pricing model where we can pay the SaaS supplier to take responsibility of the risk. If for examples regulatory requirements change, then the provider take responsibility for this and make sure that the SaaS can live up to the new requirements. [...] A pricing model that is similar to the pricing of insurances is interesting for us.” - C.1

“If we want to minimize the risk, a shared revenue model can sometimes be of interest.” - C.1

However, another interviewee did not have a positive attitude towards a shared revenue model.

“A shared revenue model is inapplicable. Only because our company makes more money, why should we pay more for the SaaS solution?” - C.7
4.4 Summary of Results

The following section provides a summary of the presented results from each interviewed category, internal and external SaaS providers as well as customers. The tables below provide the most interested findings respectively.

4.4.1 Internal Interviews

<table>
<thead>
<tr>
<th>Theme</th>
<th>Interview Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation</td>
<td>• The SaaS solution needs to be scalable</td>
</tr>
<tr>
<td></td>
<td>• Cost-efficiency was an important factor to consider</td>
</tr>
<tr>
<td>Pricing Models</td>
<td>• Big challenge to change a traditional on-premise pricing to a SaaS pricing model</td>
</tr>
<tr>
<td></td>
<td>• Customers want to pay in accordance to their consumption</td>
</tr>
<tr>
<td>Multi-tenancy and other Challenges</td>
<td>• The definition of multi-tenancy varies</td>
</tr>
<tr>
<td></td>
<td>• Customers required a single-tenancy solution, resulting in an non-scalable solution</td>
</tr>
<tr>
<td></td>
<td>• Technical challenge to have the SaaS 100 percent available and up and running 24/7</td>
</tr>
<tr>
<td></td>
<td>• No upfront payments from customers which affects a SaaS company’s cash flow</td>
</tr>
</tbody>
</table>

Table 11 - Summary of results from the internal SaaS providers.

4.4.2 External SaaS Providers

<table>
<thead>
<tr>
<th>Theme</th>
<th>Area</th>
<th>Interview Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>Simplicity/Easy On-Boarding</td>
<td>• Some companies thought that marketing the simplicity of the SaaS was a necessity in order to win customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Other interviewees found it difficult with the customers’ predetermine thoughts of SaaS as simple</td>
</tr>
<tr>
<td></td>
<td>Irrational Factors</td>
<td>• The provider-customer relationship was important and building a personal connection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Conveying trust is crucial</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>• Brand was helpful in the entering into a new market</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A strong brand was important when building relationships with the customer.</td>
</tr>
<tr>
<td></td>
<td>Understand the Customer</td>
<td>• Understand the customer’s specific industry and understand what value that is created with the SaaS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Understand the customer’s needs.</td>
</tr>
<tr>
<td></td>
<td>Pricing Strategy</td>
<td>• Value-based pricing was the most common strategy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Some suppliers had the ambition to use a value-based approach but failed because of the complexity</td>
</tr>
<tr>
<td></td>
<td>Charging Method</td>
<td>• Price/user was the most frequently used method among the companies</td>
</tr>
</tbody>
</table>
### Revenue Streams
- Seven companies had one single revenue stream
- Seven companies had multiple revenue streams generated from their SaaS solution, e.g. cost for education, implementation cost and monthly fee for the SaaS.

### Subscription Model
- Five companies used different subscriptions in their offerings, depending on the customer’s size.

### Challenges
- **Scalability**
  - Difficult to keep the SaaS truly scalable
  - Many of the providers had a minimum commitment from the customer in order to guarantee minimum revenue.

- **Security**
  - Customers are very eager to discuss security
  - Some customers are skeptical towards storing data in the cloud and questions if this is safe
  - The combination of cloud services and the Swedish law PUL is a challenge.

- **Pricing**
  - Hard to find a suitable pricing model for SaaS
  - Some customers are of the belief that SaaS solutions are in general very cheap services and therefore expect a low price.

- **Commission and Sales Force**
  - Salespersons expect to receive their provision after each sale, which is hard with a SaaS pricing model
  - SaaS requires competent salespeople

- **Standardization**
  - Many of the customers want some level of customization, especially the larger customers
  - Standardization is a requirement for an agile development of SaaS

### Multi-tenancy
- **Generation**
  - The older generation is more skeptical, while the younger generation do not question multi-tenancy
  - The concern about multi-tenancy has started to disappear

- **Company Characteristics**
  - Smaller companies and start-ups have a more positive standpoint

- **Customer’s Viewpoint**
  - Companies that are used to host their own software are more concerned with multi-tenancy

- **Laws and Regulations**
  - Laws and regulations are lacking behind the technical development

### Sales Force Focus Change
- Selling directly towards the core business rather than the IT department
- A shift in sales focus requires a new kind of communication
- Important to understand what drives the “new” customers
- Many customers want to do the majority of the sales process online

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**Table 12 - Summary of results from the external SaaS providers**
### 4.4.3 Customer Perspective

<table>
<thead>
<tr>
<th>Theme</th>
<th>Area</th>
<th>Interview Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distribution of Customers</strong></td>
<td></td>
<td>• Out of the seven companies:</td>
</tr>
<tr>
<td></td>
<td>Purchasing</td>
<td>- 2 companies purchase SaaS</td>
</tr>
<tr>
<td></td>
<td>SaaS</td>
<td>- 4 companies purchase smaller SaaS solutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2 companies do not buy SaaS</td>
</tr>
<tr>
<td><strong>Customer Attitude</strong></td>
<td></td>
<td>• Lower price compared to on-premise solutions and no maintenance cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Flexibility</td>
</tr>
<tr>
<td><strong>Why SaaS?</strong></td>
<td></td>
<td>• Many of the customers had already invested in server parks on-premise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Security issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Laws and regulations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Customization is not possible</td>
</tr>
<tr>
<td><strong>Why not SaaS?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Important aspects when buying SaaS</strong></td>
<td></td>
<td>• All customers expressed that security was an important aspect when buying SaaS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The suppliers need competence in this area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Few of the customers thought that their IT department was more concerned compared to employees coming from the business side</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td></td>
<td>• Customer wanted some level of customization in the SaaS</td>
</tr>
<tr>
<td><strong>Customization</strong></td>
<td></td>
<td>• Reliability is important in terms of knowledge, competence, credibility and financial condition of the company</td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td></td>
<td>• Price was an important factor when evaluating different SaaS options</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td></td>
<td>• The customers wanted to be able to scale the SaaS subscription up and down depending on usage</td>
</tr>
<tr>
<td><strong>Scalability</strong></td>
<td></td>
<td>• Service level agreements were an important part of the buying process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Local support and personal interaction with the provider</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Keep the customer informed about future updates of the SaaS</td>
</tr>
<tr>
<td><strong>Customer Service</strong></td>
<td></td>
<td>• Many customers had a standardized procurement process based on rational factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Price and functionality was important</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easy to get information overload</td>
</tr>
<tr>
<td><strong>Rational Factors</strong></td>
<td></td>
<td>• A majority of the customers agreed that irrational factors have a large impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rational factors are order qualifiers, while irrational factors are the order winners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Building relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The SaaS provider’s competence</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td></td>
<td>• Guide the customer in their transition of using SaaS instead of</td>
</tr>
</tbody>
</table>
traditional software
• Prepare the customer and help to point out which factors to consider is this change

<table>
<thead>
<tr>
<th>Pricing Model</th>
<th>Variability</th>
<th>Value</th>
<th>Handling Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Many of the customers thought that a variable pricing was an attractive feature in SaaS pricing</td>
<td>• Several customers wanted to pay for generated value</td>
<td>• Some customers wanted to pay the SaaS provider for taking responsibility of risk</td>
</tr>
<tr>
<td></td>
<td>• Scale up and down in terms of usage and users</td>
<td>• The difference between price and potential revenue generated by the SaaS is important</td>
<td>• One customer wanted a pricing component that was similar to the pricing of insurances</td>
</tr>
</tbody>
</table>

Table 13 - Summary of results from the customers
5 Analysis and Discussion

In the following chapter, the empirical findings from the conducted interviews are analyzed and discussed together with the literature in the field. The aim is to understand important aspects when changing software to a SaaS, where focus will be on discussing pricing and marketing as well as challenges with changing to a SaaS delivery model. The composition of the chapter will follow the sequence of the three research questions, where the purpose of this analysis is to serve as a base for answering these stated research questions.

5.1 Important Aspects when Marketing SaaS

This section will address important factors to consider when creating marketing strategies for SaaS solutions and serve as a base when answering the first research question. The reviewed literature on marketing will be discussed in comparison to the resulting aspects brought up during the interviews with both internal and external SaaS providers. The discussion will receive additional depth by comparing this to the customers’ expectations as well as their stated framework for purchasing Software/SaaS.

The literature highlights the importance of a clear and efficient marketing strategy in order to survive in a changing market such as the ICT sector (Latusek, 2010). However, when discussing this area with the external SaaS providers and the internal salespeople at Tieto, little consistency where shown across the interviews. Several of the interviewees claimed to not have any information about their marketing strategy; others started to talk in terms of customer satisfaction and the importance to highlight the value that their solution provides. The reasons for the quite divers answers could stem from the fact that marketing of IT solutions is a very broad area that includes multiple aspects, all of which can be viewed in Figure 4 (Keyes, 2010).

5.1.1 Easy On Boarding and Other Preconceptions Among Customers

The interviewed SaaS provider highlighted a significant issue where the customers’ preconceptions regarding SaaS are causing implication. The most prominent example was regarding easy on boarding, where the interviewees were of opposite opinion. Some companies strongly believed that one of the most important aspects to promote with their SaaS solution was the easy on boarding as well as the simplicity to get started and to use the solution. This has however created an issue for some of the other interviewed SaaS providers. According to those providers, the customers are of the preconception that all SaaS solutions are operated in the same way. Hence, the companies with solutions that are not “plug and play”, i.e. where you can start an account and begin using the service right away, are experiencing a challenge getting the customers to accept the implementation phase as well as the cost associated to this.

The literature highlights that the enterprise software industry have experience declining prices, where the most radical price decline has occurred when products have become free of charge, like Google Drive etc. (Cusumano, 2007). The providers have consequently identified that another preconception among the customers was that SaaS is cheap to develop and maintain. The customers are therefore of the opinion that the solutions should not be very expensive to purchase. This issue will be further discussed in the section about “SaaS pricing models”.

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For SaaS providers with a longer implementation phase it could be more beneficial to market their SaaS solution as a new service, instead of stating that it is a SaaS. Another key takeaway is that the providers should market and highlight the added value that this solution brings the customers. In this way, companies that have customers with the opinion that their price is too high can emphasize that they are pricing the solution according to the value it brings. Finally it is evident that clear communication is a key aspect for all SaaS providers in order to avoid as many preconceptions as possible. The latter is backed up by a longtime SaaS advisor, Dave Key, who claims that due to SaaS solutions being accessed online customers expect to be able to research them before turning to the supplier, indicating the importance to have all information concerning the solution “readily accessible” (Cloud Strategies, 2013).

5.1.2 The Importance to Control the Irrational Factors

One aspect that were acknowledged both in the literature as well as during most of the interviews were the importance of controlling the irrational factors that have a tendency to influence the customers’ decision in a B2B purchase (Pfoertsch & Scheel, 2012). Where a strong brand can have a positive effect on the irrationality that sometimes dominates the purchasing decisions (Lynch & De Chernatony, 2004; Tanner & Raymond, 2010; Hadjikhani & LaPlaca, 2013). Aligned with the literature, several of the interviewed external SaaS providers claimed to focus more on soft and irrational aspects of their solution than the more traditional economical features. Many were of the belief that it was the irrational aspects associated with their SaaS solution that brought trust and a feeling of security to the customers, as well as the importance of creating lasting customer relationships. Trust and security means however different things to different companies and industries. Some of the interviewees brought up that in order to create a well working marketing strategy, one has to get to know the customer industry thoroughly. Others had identified that their brand were of great help when creating good customer relationships as well as entering immature markets, an aspect that was also identified in the literature (Lynch & De Chernatony, 2004; Tanner & Raymond, 2010; Hadjikhani & LaPlaca, 2013). Along with this theme one of the interviewed start-ups (S.6) admitted that they lost a potential customer to a larger and more well known firm, even though S.6 had a lower price and a completed solution ready to implement.

Key takeaways that can be drawn from this area are that irrational factors such as trust and a feeling of security are important when discussing SaaS solutions with the providers. Where, creating a strong business brand can aid the provider, by serving as a warranty for the providers’ trustworthiness as well as increase their credibility.

5.1.3 SaaS Providers’ Ability to Understand Customer Need

In markets such as the ICT industry where new players emerge each and every day, it is of great importance to differentiate oneself from the competitors. One way is to focus on customer intimacy as proposed by Keyes (2010), which indicates that the companies should “develop
intimate knowledge about customer needs in order to find out what satisfy them”. However, due to the fact that software has been made into a service, it is now more difficult for customers to physically evaluate the provided SaaS solution, since services per se are more intangible (Rushton & Carson, 1989). As a result of this intangibility, customers rely on softer values such as feelings, experience and perception in order to evaluate the performance of the services. In theory this means that SaaS providers must be aware of this change in order to fully be able to help the customers to understand and appreciate the value with the SaaS solution (Gordon, Calantone, & di Benedetto, 1993). This aspect was also identified by several of the external SaaS providers, who stress the importance to understand the customers’ industries in order to truly market the added value created by the SaaS solution. SafeNet claims, in addition to this, that the transition from physical on-premise products to SaaS solution generates a shift for the providers as well. Where the entire sales process of SaaS has become much more relationship focused (SafeNet, 2011).

The key takeaway here is that customers do not always fully understand the value created by the SaaS, which leads to the importance for the provider to enlighten the customers. In order to do so, the providers need to have extensive knowledge about their customers as well as what factors are of importance for just that industry.

5.1.4 The Customers Expectations and Requisitions

The interviews have provided findings of customers’ expectations and requisitions, where the most important factor was regarding security. Many of the interviewees discussed the importance of the SaaS being a secure solution due to sensitive data etc. Several interviewees also brought up that they wished to feel reliability for the provider, where knowledge, competence, credibility as well as the financial condition of the provider were of objects to scrutinize. Aligned with this, a majority agreed that irrational factors do influence them in their purchasing process. However almost half of the interviewed customers, 43 percent, stated that their procurement process were solely based on rational factors. Where some had even made all providers anonymous in order to remove as much as possible of the irrational factors. This act confirms that irrational factors truly have an impact on the companies’ decision making, just like the literature states (Lynch & De Chernatony, 2004; Pfoertsch & Scheel, 2012; Hadjikhani & LaPlaca, 2013; Tanner & Raymond, 2010). Another interesting aspect brought up during the customer interviews was their wish for guidance in the transition as well as the possibility to add customer service. One customer highlights that the interaction with the provider after the sale is of high importance, where personal connection is valuable.

A key takeaway from the customers is that irrational factors are of essence when purchasing SaaS solutions. Where aspects including security, reliability, and credibility among others are important for the SaaS providers to acknowledge in order to attract customers. Another takeaway is that the customers do wish to receive a certain degree of guidance when providers are making a transition into the cloud. As well are they appealed by the ability to add customer service and form a personal relationship after the sale.
5.2 SaaS Pricing Models

In this section different pricing models is addressed with help of the literature in the area. A majority of the customer interviews showed that pricing was a crucial aspect when buying a SaaS, therefore this is an important area to analyze further. Results from internal, customer and provider interviews are analyzed and compared, to provide different perspectives on pricing of SaaS. Different pricing strategies, charging methods and other important areas within SaaS pricing will be discussed.

5.2.1 Pricing Strategy Approach

Interviews conducted with the SaaS providers showed that the most common strategy was a value-based pricing approach. Hinterhuber (2008) express that value-based pricing is the overall best approach compared to cost- and competition based pricing, because this strategy takes the customer perspective into account and creates a direct link to the customer needs. This strategy requires the SaaS suppliers to truly understand what value their SaaS brings to their customers (Nagle & Holden, 2002), which of course imposes high demands on the providers. Therefore deep knowledge in each customer’s specific industry is needed in order to understand what creates value, where one SaaS provider’s way of tackling this was to specialize in one industry and become expert in it. Another one of the SaaS suppliers was of the opinion that the SaaS industry is going towards a more value-based pricing, which seems to be aligned with some of the customers’ standpoint in this question. A customer in the energy sector described the importance of the gap between price and potential revenue generated from the SaaS, and that the actual price level is therefore not as important. This gap can be portrayed as the value that a certain SaaS solution brings to the end customer.

The same customer further underlined that a SaaS provider that took responsibility of handling risk created value for them. Since the Nordic energy market is an industry where there are many ongoing changes in for example laws and regulations, this can consequently change the conditions for a SaaS. If a SaaS provider takes responsibility of adjusting their SaaS in accordance to these new conditions, the customer is willing to pay for this handling of risk. None of the SaaS providers mentioned in their interviews that they had identified risk handling as something that created value for their customers and that they could charge for that.

However, for some of the SaaS providers value-based pricing was complex and they expressed a concern that it was hard to set a price tag on the value that their SaaS generated. They had therefore chosen a cost or competition based pricing strategy. The literature further stresses that if a supplier fails to perceive the value that the customer pays for, a value-based pricing strategy will fail (Hallberg & Andersson, 2013). An explanation to this complexity could be that software solutions are “experience goods”, meaning that the customer only can discover the value after the solution has been used, which can complicate value-based pricing. (Lehmann & Buxmann, 2009)

A key takeaway from this area is that a value based pricing approach was the most common pricing strategy among the SaaS providers, but that many found it difficult to understand what
value their SaaS offering created for their customers. Some SaaS vendors had a strategy where they specialized in one specific industry in order to gain extensive knowledge in that field, and thereby try to understand what creates value for their customers. Another key point is that the price level is not the most important part for the customers, but rather the difference between the price and their potential revenue generated from the SaaS. A final takeaway was that some customers valued a SaaS provider that took responsibility of adjusting the SaaS in accordance to future regulatory changes in the industry.

5.2.2 Charging Method & Revenue Streams

During the interviews with external SaaS providers, different charging methods were brought up. The most common method was charging the customer a fixed price per user, using different subscription models. This finding corresponds to the literature, where Gohad, Narendra & Ramachandran (2013) argue that a subscription based pricing is the most common model for pricing SaaS. These subscription models were for example based on the size of the customer, if it was a small, intermediate or a large customer, where the subscriptions could also contain different features and service levels.

User based pricing was the most common used pricing metrics in the interviews, which involved measuring how many business users that were accessing the service. But with SaaS, there is a range of additional user-based metrics that could be used for metering and tracking capabilities, compared to a customer running an on-premise application. For example, it can involve measuring which features that are used most frequently, or which features that are most popular at a particular time of day and develop a charging method from this data. (SafeNet, 2011) There exists many possibilities, but looking at the results from the interviews and in the literature, there is not much experimentation among the SaaS vendors in this field.

The different charging methods that the SaaS vendors used were mostly in line with what the customers expected from a SaaS pricing model. From the customer interviews, the results showed that they had a positive attitude towards a variable pricing, based on number of users or usage, and different subscription models. From the internal interviews at Tieto it was revealed that some of their customers were of the opinion that it was positive for them to avoid large initial investments, and instead pay according to their consumption that a SaaS delivery model offered.

From another internal interview, the results showed that SaaS was not cost efficient for the smaller customers, and that it was more beneficial to buy their own servers and buy an on-premise solution. One of the internal interviewees described that it was a big challenge to develop a SaaS pricing model, and that many customers were skeptical towards a one-price model. Instead they wanted to pay for the revenue streams that a traditional software vendor has, which include a license fee, maintenance agreement and a service fee (Cusumano, 2007).

Overall, there was a difference in opinions regarding the attitude towards a SaaS pricing model. The interviewed customers in the energy sector had a positive standpoint while Tieto Energy Utilities’ customers had a more negative view. There can be different underlying reasons behind
this. One reason could be that Energy Utilities’ customers are operating in different sectors compared to the other interviewed customers. Another explanation could be the size of the customer, where it can be more profitable for the smaller customers to buy their own servers and buy an on-premise solution, rather than paying for a SaaS.

Some of Tieto’s customers were skeptical towards a single revenue stream pricing model. From the SaaS provider interviews it could be seen that the revenue stream for the monthly or annual subscription fees was based on number of users, but a majority of the SaaS providers had additional revenue streams in their pricing model. These additional revenue streams are for example fees for maintenance and service, implementation costs and cost for education. This does not coincide with the SaaS pricing literature, where many different pricing methods exist but solely one revenue stream is common (Gohad, Narendra, & Ramachandran, 2013). This can however be identified in the recent software literature, where it can be claimed that vendors today collect revenue from different revenue streams, such as advertising based revenue, transaction based revenue, revenue from implementation and maintenance services etc. (Laatikainen & Ojala, 2014). So a majority of the interviewed SaaS providers have not entirely shifted to a SaaS pricing model with one revenue stream, but have instead a hybrid solution of traditional software pricing and SaaS pricing.

A majority of the literature argues that the shift in revenue from license fee to services has affected the entire software industry, where a decline in prices for enterprise software is one result. Since software as a service is reproducible and has a marginal cost close to zero, companies like Google have the ability to offer their software free of charge. (Cusumano, 2007) This trend could also be identified in the interview results, where SaaS providers described their concern that the customers expect a SaaS solution to be extremely cheap and cost next to nothing. In the customer interviews, some of the customers claimed that a cheap price was what they expected from SaaS. SaaS is an experience good, this generates a pricing conflict for SaaS providers since customers tend to underestimate the value of experience goods (Shapiro, 1983). Shapiro concludes that the optimal pricing strategy is to have a low introductory price and lead the customers to realize the true value of the offering. However, more recent literature in the software field states that software vendors tend to go towards a more consumption-based pricing-model in order to generate a steady flow of income (Lehmann & Buxmann, 2009; Kittlaus & Clough, 2009).

The interview results showed that none of the SaaS providers used a purely consumption-based pricing model. However, in the literature it can be seen that a pay per use pricing model seems to be a key characteristics that should be included in a “true SaaS” solution (Lee, Lee, & Cheun, 2009). SaaS provider S.8 explained that it was hard to develop a consumption based pricing model, due to difficulties with metering and keeping track on the customer’s audits, which required a lot of administrative work. Some of the SaaS vendors’ pricing model did however show tendencies of having a consumption-based pricing approach in their different subscription models. For example, company S.2’s three subscription models offered three different maximum levels of number of transactions that the customer could make every month in an online accounting system. This consumption model was not linear like a traditional pay-per-use model,
Instead, the subscription model automatically changed to the descendant subscription model if usage was exceeded.

According to the literature, a consumption-based pricing model is a popular model because it allows customers to closely tie usage to cost. It is a flexible model that is valuable to companies that are in an early phase of ramping up their need for a particular service, as well as it provides a limited commitment into the future for the customers. (Deeter & Jung, 2013) This was a view that was shared among many of the interviewed customers. The scalability of the pricing model was an aspect that they valued, and it was important for them with the dynamic scale up and down in the pricing model. Some of the SaaS providers saw, however, a downside with this scalability, since a consumption-based model gives a vendor lower predictability of revenue because a customer's usage of the service can vary from month to month (Deeter & Jung, 2013). One of the SaaS suppliers described that they tried to go around this issue by setting a minimum usage level that was the minimum price that their customers were needed to pay every month. Another SaaS provider had made the decision that after signing a contract with a customer, the customer was only able to scale up in the different subscription models.

Traditional on-premise software companies gain the majority of their revenue at the time of license purchase. However, a SaaS business model can be characterized by delayed revenue and cash payments. This delayed revenue ramp can therefore be difficult for newly started SaaS companies with limited assets. (Cloud Strategies, 2013) It can be seen in the results that it was common among start-ups to charge the customers on a yearly basis, where some of them described this problem and explained that it was necessary for their survival to charge their customers up-front for one-year usage of the SaaS. This trend can be identified among the B2B SaaS companies, that they are moving towards a one-year minimum subscription prepayment paid annually (Cloud Strategies, 2013).

A key takeaway from this section is that the most common charging method among the SaaS providers was to charge their customers per user, using different subscription models, either on a monthly or yearly basis. Looking at the results, from the interviews and in the literature, it was shown that there did not exist much experimentation in pricing metrics. Furthermore, a majority of the customers had a positive attitude towards a variable pricing based on number of users or usage. The SaaS suppliers had a pricing model that consisted of multiple revenue streams, and not one single revenue stream for the fee of the service that the literature argues. The final key takeaway is that none of the providers used a pure consumption-based pricing model. According to the literature, this model is very common in the SaaS industry but due to lower predictability of revenue the interviewed SaaS providers had rejected this pricing model.

5.2.3 Transparency in the Pricing Model

The interview results and literature review showed that there exist both diverse and complex methods of pricing SaaS. Two key conditions when pricing SaaS are however attaining clearness and transparency for both customers and providers (Laatikainen & Ojala, 2014; PwC, 2013; Yadav & Bandyopadhyay, 2014). During the interviews it became evident that most of the SaaS vendors were not very open with their pricing strategy for their customers. Looking through
their company websites, only a few of the SaaS providers were transparent in their pricing. Salesforce is a successful SaaS company that offers a CRM solution that is very often referred to in the literature when discussing successful pricing models for SaaS. At the company’s website a transparent pricing of their SaaS can be seen and this transparency has become a strong part of Salesforce’s branding and identity. (Salesforce, n.d) However, most of the SaaS providers that were interviewed seemed to have not embraced this transparency. One of the suppliers clearly expressed that they had seen a change in their customers purchasing behavior, and that their customers wanted to make the majority of the buying process online. Still, they were not transparent with their pricing model online.

There may be several reasons why the providers have chosen not to be fully transparent with their pricing model. One reason may be that some of the interviewed SaaS suppliers were start-ups, and that they had not fully developed a pricing model. One start-up company described that in their development of a pricing model, they used a lot of try and error, i.e. they tried a pricing model and waited for the customers’ reactions. This view was further reinforced in the literature, where a common feedback from companies is that a SaaS vendor needs to be agile and able to rework pricing during the early stages of launching a service and on an ongoing basis (SafeNet, 2011). Another explanation could be that it is very complex to develop a SaaS pricing model (Laatikainen & Ojala, 2014; PwC, 2013), and that the interviewed companies that are not transparent have not been able to establish a standardized pricing model for their SaaS offerings. In some of the SaaS provider interviews they described that it very often came down to negotiating a price with each customer, and that a standardized pricing model was not set in stone.

A key takeaway from this area is that transparency and clearness are key conditions in a SaaS pricing model, however only a couple of the SaaS providers had attained these conditions.

### 5.3 Challenges Associated with SaaS

This section will address the challenges that are associated with SaaS, both when it is offered as well as when it is transformed from an on-premise product. This will serve as a base when answering the third and final research question. The reviewed literature will be discussed in comparison to the resulting aspects brought up during the interviews with both internal and external SaaS providers. The discussion will receive additional depth by comparing these findings to the customers’ reflections, including the underlying reasons why some customers did not purchase any SaaS solutions.

Several challenging areas were identified in the empirical findings. The main issues include: scalability and multi-tenancy, scalability and pricing, commission and the sales force, standardization vs. customization as well as important aspects to consider when doing a transformation.
5.3.1 Scalability and Multi-Tenancy

One challenge brought up by several of the providers is the scalability of the SaaS solution. This was also identified by the internal interviews as an important aspect when transforming an on-premise product to SaaS. In this case the providers, both external as well as internal, refer to scalable in terms of the ability to add new customers without having to make a lot of changes nor be associated with greater costs. They claimed that if the solution does not scale it would not become as beneficial as it could for the provider. This aspect is also identified in the literature, where authors like Laatikainen & Ojala (2014) stress the importance for companies to make their SaaS solutions multi-tenant. The more each customer shares the environment in the SaaS, the more beneficial does each customer become for the provider (SafeNet, 2011).

However this is an aspect that the customers are not always satisfied with. Some industries are more sensitive than others when it comes to multi-tenancy being an issue. The providers, as well as the literature, have acknowledged that companies and personnel with knowledge in IT and organizations within the public sector are significantly more reluctant to purchase SaaS solutions (Cloud Strategies, 2013). They also claim that smaller firms such as start-ups are not as concerned about multi-tenancy and that it could be a generation related issue. Findings that support this hypothesis are that one third of the interviewed external providers identified multi-tenancy as a past issue. However, it could also be a result of the technological development that has happened in the SaaS industry, as well as the fact that the majority of the IT companies are moving into the cloud.

Nonetheless, security is and most probably will continue to be an important aspect for customers when deciding between on-premise and SaaS. In order for SaaS providers to be viewed as trustworthy and reliable, they should focus on building long-lasting relationships as well as create a strong brand. The latter is identified in the literature by Kotler & Pfoertsch (2007) to be a reducer of risks; hence a strong brand can provide the customer with a feeling of security. Key takeaways from this section is therefore for SaaS providers to focus on branding as well as building relationships in order to become a trustworthy supplier that can provide secure SaaS solutions.

5.3.2 Scalability and Pricing

During the interviews two different definitions of scalability were recognized. The first one is discussed in section 5.3.1 and concerns the scalability to add new customers without additional changes or costs for the provider. The other type of scalability is connected to the pricing and the revenue received. One third of the providers have acknowledged a difficulty to allow the customers to fully scale up and down among the different subscription models. This challenge originates from a financial aspect, where some providers only allow their customers to increase their use in order to guarantee a minimum income. Another concern for companies that are considering a transition is the challenge to pay the employees and for office space when the SaaS pricing generates no up-front payments. These challenges are however further discussed in the chapter about SaaS and its pricing models in section 5.2.
5.3.3 Commission and the Sales Force

The transition to SaaS have changed the way software is sold, which adds a lot of pressure on the sales force. In business-to-business sales, personal selling are an important communication channel in order to secure new customers as well as retaining current ones (Lynch & De Chernatony, 2004; Pfoertsch & Scheel, 2012; Tanner & Raymond, 2010; Tyrväinen & Selin, 2011; Cloud Strategies, 2013). A transformation to SaaS indicates that a new-buy situation will occur, where the customers’ decision process will be significantly longer with many involved employees (Giambattista, 2005; Tanner & Raymond, 2010). Several of the providers have identified the sales personnel’s commission as a challenge when making a transition to SaaS. Traditionally, the commission is issued after each sale, when selling SaaS this is not possible since it often lacks an up-front payment. This can potentially influence the motivation of the salespeople, which can have a significant affect on their work effort.

Another challenge associated to the sales force, is that the providers have identified that the offering of SaaS demands competent salesmen who can communicate credibility, reliability as well as trust. This aspect is also identified by both the literature as well as by the customers. The former discusses the importance to first educate the sales people in order for them to convey the brand value since the salespeople’s behavior have a huge influence on the customers perceptions of the provider’s image (Lynch & De Chernatony, 2004). The latter discusses the importance that the salesperson gives an appearance to know what he/she is talking about, i.e. it is important for the salespeople to appear competent. Some interviewed customers stated that if the salespeople are unprepared or lack competence in the service being sold, how do they know that the supplier posses that competence. Hence, salespeople are an important feature to success when selling SaaS.

Key takeaways are the importance to review the sales force’s commission as well as educate them in order to secure motivated and competent salesmen. Furthermore, are the salespeople’s behaviors an area of interest, where their ability to convey the providers brand value are of importance in order to appear trustworthy and competent.

5.3.4 Standardization versus Customization

The final recognized challenge was associated to standardization, which is identified as one of the key features of a SaaS solution (Gartner, 2013; Lee, Lee, & Cheun, 2009). Some of the SaaS providers stated that keeping the solutions standardized had become a challenge due to customization requests from customers. Where the providers’ ability to stay agile is dependent on standardized solutions. The literature has also identified the importance to keep SaaS solutions standardized in order to received a financial benefit, similar to multi tenancy (Laatikainen & Ojala, 2014). However, the providers experienced that the larger the customer organization is, the more prone are they to make customization requests. One provider has drawn the conclusion that organizations with a strong IT department are more reluctant to buy standardized solutions, since they want to be able to implement and embed the SaaS themselves into their current systems.
During the interviews with the customers, this issue appeared as well. The customers asked for a certain degree of customization in order for them to “put a personal touch” to the solution as well as modify it to fit their company core processes etc. Since the deregulation of the Nordic energy market occurred, the energy companies have had larger difficulties retaining their consumers due to a much more competitive market (SverigesEnergi, 2014). Hence, some of the interviewed energy companies were concerned that a standardized SaaS solution could hamper their differentiation in the competitive energy market.

Key takeaways from this section is that standardization is a main driver for profitability for the SaaS provider, however it could cause dissatisfaction among the customers due to the lack of customization they require in order to differentiate themselves.

5.3.5 Important Aspects to Consider in a Transformation

The purpose of the thesis is to aid the division Tieto Energy Utilities in their transition into the cloud. An important question when interviewing both internal and external SaaS providers has therefore been if they have transformed a traditional on-premise solution into a SaaS. Unfortunately, only one third of the interviewed external providers had experienced a transformation, however all of the internal interviewees had undergone a transition or were in the middle of one right now. What is interesting to acknowledge is that all of the providers that have undergone a transition claimed that their solutions where not a “true SaaS.” Some could not get the multi-tenancy part realized, others where not able to have the SaaS solely based online and a handful were unable to have a strictly consumption-based pricing model.

Cost-efficiency was an aspect that the internal interviews brought up. Many of the interviewees had experienced that some customers were reluctant to change to SaaS due to large investments made in earlier systems. Energy Utilities’ current customer base consists of companies operating in the Nordic energy market. The literature review indicates that this industry have undergone several major transformations during the last decades, where the Nordic inhabitants are nowadays allowed to change energy provider whenever they wish (Energimyndigheten, 2004). This implies that the energy companies are not guaranteed as stable customer base as they had in the past; where minimizing cost are of essence in order to ensure profit.

In addition, the literature as well as some of the SaaS providers states that making a transition into the cloud is not something that happens overnight. SafeNet highlights the importance to be considerate of your customers and ease them into using SaaS (SafeNet, 2011). The same was brought up as a conclusion by a previous master thesis made in association with Tieto (Sarri, 2014). A couple of the interviewed providers had therefore created a hybrid solution, while renewing the entire system old legacy solutions were running parallel in order to ease the customers’ transition. However, one of the external providers (S.15) claimed that you had to start from scratch in order to build a SaaS solution. Since a lot of the current software is built in a way that makes it very difficult, sometimes impossible, to transform it into a modern SaaS solution. This could be a reason why none of the providers that had transformed a product into SaaS had fully succeeded.
One of the most significant key takeaways from this section is that none of the interviewed SaaS providers that had experienced a transformation from an on-premise to a SaaS solution had managed to create a true SaaS. Other takeaways are that creating a cost-efficient solution is of importance as well as easing the current customers transition into the cloud.

5.4 Critical Discussion of the Interviews

The results from this master thesis are derived from the semi-structured interviews with SaaS providers, customers and internal personnel at Tieto as well as literature in the field. Tieto Energy Utilities wanted to get a broad picture of different pricing and marketing strategies within SaaS, therefore different companies have been interviewed, both in terms of size, industry and phase in life cycle. However, the sources that are used in this thesis need to be discussed in order to understand how the chosen sources potentially can have had an influence on the final findings.

Semi-structured interviews have been conducted to gather empirical data from the field of software as a service. Interviews were used to get a deeper understanding of what different marketing and pricing strategies that existed in the market, as well as important aspects to consider when transforming software to a SaaS delivery model. As mentioned in the methodological chapter, the SaaS providers were found through LinkedIn’s professional social network using an advanced feature search. In this way the authors of this thesis got in contact with many different SaaS providers. In the end, four of the interviewed SaaS suppliers were larger companies in the majority phase, corresponding to Tieto characteristics. It was desirable to perform more interviews with larger and mature SaaS providers, but it was hard to get in contact with employees in these companies and schedule an appointment for an interview. It turned out that the smaller companies, sometimes start-ups, were easier to get a response from.

Interviewing companies that were more similar to Tieto could potentially have been more beneficial for them, due to similar background and challenges that exist in a larger organization. However, the interviewed SaaS providers were in the end evenly distributed across different industries, sizes and stages in life cycle, which gives a broad perspective of different aspects around SaaS and can therefore be seen as usable findings for Tieto.

Interviewees from customer companies, SaaS providers and internal interviews had different roles in the company. This can have had an affect on the findings, since they possess different knowledge in terms of both technical aspects and the business side of SaaS. When conducting the interviews the aim was first to assure that the interviewee had an understanding of what “true SaaS” was and thereafter determine if the company offered a SaaS according to this definition. In some cases the solutions were not a “true” SaaS, for example because it was not multi-tenant or a consumption-based pricing. This has however been disregarded when analyzing the results, due to that this is a common problem among many SaaS vendors and that it was interesting to get their perspective on pricing, marketing and challenges with SaaS. From the literature and interviews it also became apparent that for many companies that had transformed their software to a SaaS it was inevitable in the transition to offer a SaaS that is not a “true” SaaS delivery model, but more of a hybrid solution. Therefore the results from these companies have been included in the findings.
Tieto Energy Utilities is currently in a transition, where they are transforming their traditional software offerings to a SaaS delivery model. The aim was therefore to interview SaaS providers that had been through a similar transition. It was a challenge to find companies that had undergone this transition, because many of the companies had offered a SaaS delivery model since the beginning of the start or some companies were in the middle of this transformation. However, five of the interviewed SaaS providers had been through this transition, and the internal interviews with employees that had experience with a similar transformation gave interesting and important insights. It can be questioned if these findings are general findings for companies transforming to SaaS or if more data needs to be collected. If more time were given to this master thesis, it would have been desirable to conduct more interviews with companies that had gone through a transformation to SaaS.

This master thesis was performed at Tieto’s department Energy Utilities, which provides solutions to customers in the energy sector. The authors of this study tried to find SaaS companies that were solely operating in this industry, but without success. Collecting qualitative data from SaaS companies in the energy sector would have been interesting and it would have yield useful results to Tieto. In order to compensate for this, SaaS companies in a range of different industries were contacted to get a broad perspective and cover different aspects in pricing and marketing of SaaS.

However, a majority of the customer interviews were companies in the energy sector, which was important in order to get the energy sector’s views upon SaaS. These interviews have given important insights from a customer perspective, and useful findings that Tieto can use when transforming their software to a SaaS delivery model for the energy customers. Only seven interviews were conducted with customers but the aim was to perform additional interviews, but due to time restrictions this was not feasible. Still, the findings from the customer interviews were very interesting and conclusions can be drawn from the collected qualitative data.
6 Conclusion

This chapter presents a summary of the findings from the master thesis as well as concluding remarks, which serves as a base to fulfill the objective of this thesis. The three stated research questions are answered followed by a discussion of recommendations for future research.

6.1 Research Questions

The objective of this master thesis was to determine important aspects when changing software to software as service delivery model, where focus was how to determine suitable pricing and marketing strategies for SaaS. The aim was to support the subdivision Energy Utilities at Tieto through the transition of offering their software as a service. In order to accomplish this objective, a multi-case study was conducted in order to examine both provider and customer view on marketing and pricing of SaaS. In addition, several internal interviews were performed and an extensive literature review was executed. Answering the following three research questions will attain the stated objective:

RQ 1. What are important aspects for SaaS providers to consider when marketing SaaS solutions?

Both literature and the empirical findings show several areas that are valuable when marketing SaaS solutions, and especially highlight the importance of a clear and efficient marketing strategy in order to survive in a changing market such as the ICT sector. These include:

- Managing the customers’ preconceptions
- Impact of irrational factors
- Ability to understand customer need
- Capability to guide and advise customers

The conclusions that can be drawn from the discussion are the importance of clear communication in order to avoid as many preconceptions as possible, as well as focus the marketing of SaaS on the added value. The latter is especially essential, since customers are not always aware of the value that the SaaS brings. Furthermore, the customers wish to receive a certain degree of guidance when providers are making a transition into the cloud. A concluding remark is therefore that SaaS providers should aim to create a strong brand in order to convey trust, since irrational factors such as reliability and dependability are of high importance when customers are purchasing SaaS solutions.

RQ 2. What are the most commonly used pricing methods in the current SaaS market and what are crucial factors to consider when pricing SaaS?

The fact that pricing is a crucial part of a SaaS delivery model is supported by both the literature and empirical findings. Several different pricing methods exist in the current SaaS market, where the following features have been identified as the most common in this study:
• **Value-based pricing approach**, i.e. not price according to costs or competitors, but base the price on the value that is realized by the SaaS.

• **User-based charging method** indicates that the number of users in the customer’s organization generates the final amount charged by the SaaS provider.

• **Subscription based model** implies that the SaaS provider have considered and rejected the “one size fit all” model and customized the offerings in a handful of different subscriptions.

• **Multiple revenue streams** refer to the possibility for the SaaS provider to receive money from more than the fee connected to the SaaS. These can include training and education of the users as well as separate implementation and service agreements.

In addition to the most common pricing strategy displayed above, several other characteristics are identified as important when creating a pricing strategy for SaaS solutions. The price level is not the determining factor for the customer, instead the difference between the price level and the potential revenue generated from the SaaS solution is of importance. Furthermore, the customers are willing to pay for risk reduction, indicating that the SaaS provider can charge a higher price if they take responsibility to modify the SaaS in accordance to future regulatory changes. It can finally be concluded that transparency and clearness are desirable conditions in a SaaS pricing model, in order for customers to easily evaluate the SaaS solution, gain trust as well as guarantee that no hidden costs will appear.

_RQ 3. What challenges are associated with SaaS as well as when software is transformed from a traditionally on-premises solution to SaaS?_

In order to give a recommendation on important aspects to consider when transforming software, it is important to identify challenges associated with SaaS and its transition. The following challenges are acknowledged by the providers and are essential to take in consideration when making a transition to SaaS:

• **Multi-Tenancy** is a big concern for the customers hence a great challenge for SaaS providers. In order for a provider to be profitable and have the ability to scale the number of customers, the solution needs to be multi-tenant.

• **Security** is one of the main reasons why customers are reluctant to change their current on-premise solutions to SaaS, and is therefore a challenge that providers have to overcome.

• **Pricing**, the most significant aspect of SaaS pricing is that the up-front costs are close to zero. This represents a challenge for companies whose cash flow is dependent on the traditional up-front license fees.

• **Commission and the Sales Force**, due to the challenge above with no up-front payments, it will be a challenge for companies to redo their system for commission to the salespeople. Another challenge in this area is the sales force itself, where the brand value and trustworthiness is conveyed by the salespeople.
• **Standardization vs. Customization**, a standardized SaaS solution is the main driver for profitability for providers; this however causes dissatisfaction among the customers due to the lack of customization they require in order to differentiate themselves.

The conclusions that can be draw from these challenges, as well as from the discussion, are the importance for the provider to focus on branding themselves as trustworthy suppliers as well as form enduring and thriving relationships with their customers. Where the latter is accomplished by having a motivated and competent sales force. Furthermore, one of the most significant conclusions from the discussion is that none of the interviewed SaaS providers that had experienced a transformation from an on-premise to a SaaS solution had managed to create a “true SaaS”.

### 6.2 Limitation and Future Research

During the course of the master thesis, there have arisen areas within the field of software as a service that would have been interesting to explore further. Due to the time restriction of this thesis, the focus has been on marketing and pricing strategies for SaaS as well as challenges when transforming software to a SaaS delivery model. Therefore, it could be of interest to conduct a similar study but instead take a broader approach on the scope, and try to investigate how a complete SaaS delivery model should be designed. Furthermore, in this delivery design try to identify what parts that are crucial to take into consideration when transforming a software to a SaaS, apart from pricing and marketing. This master thesis has focused on what a company should reach for in their pricing and marketing strategies for SaaS, but a significant addition to this paper and the literature in the field would be to come up with a stepwise approach for companies that aim to transform their software to a SaaS delivery model. In other words, an in-depth investigation of the transformation process would be of interest. The results from both the provider and customer interviews showed that safety was a big concern related to SaaS. This consequently imposes high demands on the providers to communicate trust to their customers. Therefore, it would be interesting to explore how to convey trust to SaaS customers and get the customers’ perspective of trust.
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Appendix 1 - Interview Questions

Questions to Internal Interviews at Tieto

- Does your department offer SaaS?
  - If Yes, what type?
- What current pricing strategies do you have for your SaaS and what charging methods do you use? How were these developed?
- What were the most important factors when marketing the SaaS? What did the customers demand?
- What are important factors to consider when making a transition from software to SaaS?
- In what way has the transformation affected your department?
- What were the greatest challenges during the transformation?
- What are the greatest challenges when offering SaaS?
- Is your SaaS solution multi-tenant? If so, how are your customers coping with this? How do you manage customers that are not fond of multi-tenancy?
- What departments in the customer organization are you selling the SaaS to, have you experienced a change in department?

Questions to External SaaS Providers

- What type of SaaS do you offer?
- What makes your solution a SaaS?
- Have you transformed any on-premise software products to SaaS? If so, what were important factors to consider?
- What current pricing strategies do you have for your SaaS and what charging methods do you use? How were these developed?
- What are the greatest challenges when offering SaaS?
- Is your SaaS solution multi-tenant? If so, how are your customers coping with this? How do you manage customers that are not fond of multi-tenancy?
- What are your customers’ demands on the SaaS solutions?
- What departments in the customer organization are you selling the SaaS to, have you experienced a change in department?

Questions to Customers purchasing SaaS/traditional software

- Is your company purchasing any SaaS solutions?
  - If YES:
    - What kind of service does the SaaS provide?
    - How did you choose that service provider?
    - What are important aspects when your company is purchasing SaaS?
    - What are the main differences between SaaS and traditional software solutions?
    - What are the most important business values that the SaaS generates?
- What are your expectations?
  - If NO:
    - Do you have plans on purchasing SaaS?
    - If NO:
      - Why not?
      - What would have to change in order for SaaS to become relevant?
      - What aspects of SaaS do your company not like?

General Questions:
- When purchasing IT services, what is the most optimal price model for your company? (e.g. monthly fees, usage based, percentage of cost saving/increased sales, initial cost and monthly fee etc.)
- When purchasing IT services, what are the most important factors in the buying decision?