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OFFERING SOFTWARE AS A SERVICE: CASE STUDY OF SYSTEM INTEGRATORS

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Abstract

The software markets are moving from product-based business towards more service-oriented business. System Integrators (SIs) have also noted the service component's increase in their customer cases and are placing more resources in their own service development. This study is focused on the SIs and the objective of this paper is to study how the integrators can use the Software as a Service (SaaS) business model in order to provide online services successfully to their customers and how they can take advantage of the associated benefits while overcoming the challenges. To providers, SaaS offers e.g. scale economies in distribution and administration costs, expansion of the potential customer base, and recurring revenue. From the customer viewpoint, SaaS services e.g. enable them to focus on their core competencies, provide easier access to technical expertise, and offer economical access to valuable software applications independent of time and location. We conducted a case study of six integrators and our findings confirm that the SIs are getting better in taking advantage of the SaaS model's benefits, i.e. they are achieving scale and scope economies, have shortened their sales cycle, and expanded their potential customer base. The SIs are also solving or downplaying the associated challenges e.g. by placing more emphasis on scalability and customisation capabilities, and partner management.

Keywords: software as a service, business model, value networks, e-commerce.

1   INTRODUCTION

The software markets are slowly changing: the corporate customers are increasingly asking for the software companies to provide solutions and services that fulfil their business needs and requirements instead of software products. Because of this, also system integrators (SIs) are moving their focus from project-based integration (where the customer owns the application software and the delivery infrastructure) to providing software services (where the customer "rents" the application and the integrator manages the infrastructure). However, the differences between the product and service business are considerable and the change of focus in a firm's business model from one to the other is not so easy to accomplish (see e.g. Hoch, D. et al. 2000, Nambisan 2001, Cusumano 2003). Therefore, the SIs need to find answers on how to cope with this growing demand for services and fulfil their customers' requirements of customising the software applications to suit their needs. In addition, the integrators need to keep benefiting from scope economies, e.g. by taking advantage of their existing domain area how-to knowledge, and at the same time try to achieve returns from scale, which is very hard to do in the service business. The objective of this exploratory study is to address these issues and propose different ways for the SIs of how they can be solved with the help of the Software as a Service (SaaS) business model. The SaaS model (SIIA 2001, Hoch, F. et al. 2001, TripleTree 2004, Sääksjärvi et al. 2005) attempts to bridge the gap between the software product and service businesses in order for the companies to be able to successfully provide online software services to their customers. In order to accomplish this, the SaaS model provides guidance and answers on how the integrators can at the same time achieve the above-mentioned economies of scale and scope, and fulfil customers' requirements for customisation at the same time.

In this paper, a system integrator is a firm whose services include the planning, design, implementation, and project management of a solution that addresses a customer's specific technical or business needs. Usually the SIs also offer other IT services, such as IT consulting, outsourcing, and application management. The system integrators are also involved in systems and custom application development as well as implementation and integration of enterprise packaged software and some have even developed their own software products (Coughlin 2003). This study focuses on the system integrators, which have a role of acting as mediation points where the demand for software products and services meets the supply for them. The SIs have taken note of the service component's increase in their customer cases and have, accordingly, increased resources in their service portfolio development. Furthermore, the integrators also participate actively in creating partner networks since they are constantly developing and managing their own service offering portfolio. Figure 1. depicts the system integrators and their central position in the marketplace.
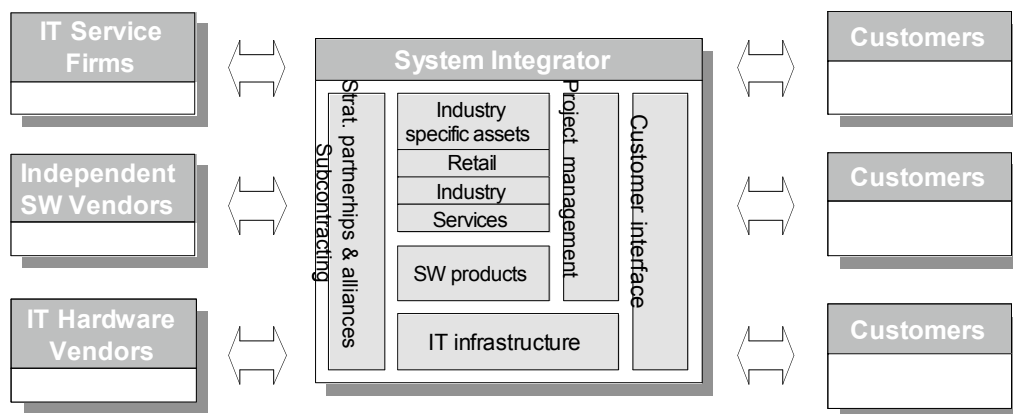

Figure 1.   The system integrator, its partners/complementors, and customers

The starting point for this study are the system integrators' customers and how these customer firms' business needs define what kind of information systems and services they require in their day-to-day activities. The integrators try to satisfy this demand for services by offering different kinds of software solutions: systems, products, and services, which often are bundled together with hardware. Since the customers' IT needs can vary significantly, the SIs have partnered with other IT firms in order to serve and fulfil their customers' requirements better. It seems that the main reasons for the integrators' increasing networking efforts have been their customers' growing IS needs to support a large variety of daily business activities (e.g. supply chain management, enterprise resource management, and e-commerce), ever increasing competition in the marketplace, and growing development costs of software. In addition, the servicisation of products, productisation of services, and componentisation of software trends (Hoch D. et al. 2000) are new in the sense that we are just starting to see what their effects are on the software markets. Therefore, an exploratory and descriptive study of these issues is in order.

We begin by building a framework in order to be able to understand and grasp the relevant issues better. The models that are used in this study are the Software as a Service business model (Cherry Tree 2000, SIIA 2001, Hoch F. et al. 2001, Mizoras and Goepfert 2003) and Amit and Zott's value creation model (Amit and Zott 2001). These two models were chosen because of their relevancy to the service, e-commerce, and networking subjects. We conducted a case study in order to explore the integrators and their SaaS offerings and the framework is used as the lens via which the case study's findings are analysed.

The paper is organised as follows. The next section introduces the framework used in this study. In section three, the case study's methodology is reviewed and in section four the findings from the case study are analysed. The fifth section is for discussion and in the final section the conclusions and suggestions for future research are presented.

2   SOFTWARE AS A SERVICE BUSINESS MODEL

The Software as a Service is a relatively new concept although the origins of the SaaS model can be traced back to the time-sharing services (Kern et al. 2002, Walsh 2003). The SaaS model (Cherry Tree 2000, SIIA 2001, Hoch F. et al. 2001, Mizoras and Goepfert 2003, Sääksjärvi et al. 2005) changes the focus from owning the software to using the software to support and/or enable the customers' own businesses as the model examines the service aspect of the software business and ways for companies to successfully offer software as a service to their customers. For the SaaS providers, the proposed benefits of offering SaaS services include scale economies in production and distribution costs, expansion of the potential customer base, more predictable cash flows, and shortened sales cycle (Cherry Tree 2000, SIIA 2001, Hoch F. et al. 2001, Kern et al. 2002, Walsh 2003, Sääksjärvi et al. 2005). For the customer companies, the proposed SaaS benefits include that SaaS enables them to focus on their core competencies, provides easier access to technical expertise, and offers economic access to valuable software applications (e.g. ERP, SCM, or CRM) at anytime and from anyplace (Cherry Tree 2000, SIIA 2001, Hoch F. et al. 2001, Kern et al. 2002, Ekanayaka et al. 2003, Walsh 2003, Sääksjärvi et al. 2005). The SaaS model's benefits and risks for the providers are summarised in Table 1.

A white paper of the SIIA (2001) introduced the "Software as a Service" concept and among the important issues reviewed by SIIA were the new skills and resources needed by the companies in order to be able to "SaaS enable" their existing products. This could mean e.g. building new versions of the existing software products and/or forming partnerships in order to create their SaaS offerings. SIIA (2001) and others (Cherry Tree 2000, Hoch F. et al. 2001, Ekanayaka et al. 2003, Walsh 2003, Sääksjärvi et al. 2005) have emphasized that the ability to manage partnerships will be important amongst the new set of skills needed by the SaaS providers because even large companies will have difficulties in providing and managing all of the components needed in creating SaaS services.

In the SaaS model, the service is no longer just an application provisioning service but integration of valuable application software into an online service infrastructure. We think that the SaaS model should be viewed as an e-commerce arrangement dealing with digital products (see e.g. Shapiro and Varian (1999) on digital products) instead of from the outsourcing viewpoint, i.e. the SaaS model is all about selling (and buying) online services. In this paper, we define SaaS as follows: "Software as a Service is time and location independent online access to a remotely managed server application, that permits concurrent utilisation of the same application installation by a large number of independent users (customers), offers an attractive payment logic compared to the customer value received, and makes a continuous flow of new and innovative software possible" (Sääksjärvi et al. 2005).

Benefits for the SaaS provider	Risks for the SaaS provider
1. SaaS enables economies of scale in production and distribution (one-to many offering)	1. It is difficult to manage the complex network of suppliers, which is required for integrating the product and service businesses
2. The cash flows from SaaS are more predictable than in traditional software sales (recurring revenue)	2. Moving to using the SaaS model initially reduces the turnover as the revenue comes from service fees instead of license sales
3. SaaS expands the potential customer base	3. Performance and scalability issues are to be expected, depending on the technical solution used
4. The sales cycle of SaaS services is shorter than that of traditional software sales	4. High initial investment in starting the SaaS business (building and maintaining the required IT infrastructure and costs of buying 3rd party software)
5. SaaS lowers version management and maintenance costs	5. The customisation of the SaaS applications typically incurs extra costs
6. By successfully integrating products and services into a SaaS offering, provider creates barriers to entry for competitors	6. Requires commitment to a more frequent release/upgrade cycle

Table 1.   *The value and risk sources of the SaaS model from the provider's perspective (Adapted from Sääksjärvi et al. 2005)*

SaaS services can also be described as being the next generation of the Application Service Provider (ASP) services. The most important differences between the SaaS and the "old" ASP model are that: SaaS applies an e-commerce point-of-view instead of the ASP model's outsourcing view, the SaaS model emphasizes the capability and need to (mass) customise customer solutions, and SaaS is a coherent business model concerned with value creation and value appropriation whereas ASP is more of a technical definition (Lassila 2005).

However, in order for the SIs to create successful SaaS offerings, more concrete models are required of e.g. how the issues related to networking are managed (Dyer et al. 2001), how the necessary scale economies are achieved (e.g. scalability, quality of service, and security issues need to be resolved while meeting the clients' customising requirements, see Cherry Tree 2000, Hoch F. et al. 2001, Ekanayaka et al. 2003, Walsh 2003, Lassila 2005), and how these new service innovations could be integrated into scalable IT infrastructure. Together, these issues make the SaaS model challenging to implement due to the model's requirement for the integrators to be able to transform their software project and product-based business more towards online software service business (Nambisan 2001, Cusumano 2003, Sääksjärvi et al. 2005).

2.1   Value creation model

In order to review and analyse the SIs and their SaaS offerings from the service oriented, e-commerce and network perspectives, we use Amit and Zott's value creation model (Amit and Zott 2001). The value perspective of Amit and Zott's model provides also a good background to explore and explain the factors that affect the SIs' Software as a Service offerings.

Amit and Zott's (2001) model is based on the value chain framework (Porter 1985), Schumpeter's theory of creative destruction (Schumpeter 1942), the resource-based view of the firm (e.g. Barney 1991), strategic network theory (Dyer and Singh 1998, Gulati et al. 2000), and transaction cost economics (Williamson 1975). Amit and Zott's model enables an evaluation of the value creation potential of different business models through four value drivers, which are efficiency, complementaries, lock-in, and novelty.

Amit and Zott (2001) place emphasis on the distinction between a business model and a revenue model: the business model primarily refers to value creation whereas the revenue model is centred on value appropriation. By the term "value" Amit and Zott refer to the total value created for all parties involved in the network that a certain firm's business model compasses. The four value drivers help in assessing the total value that can be appropriated by the participants of a firm's business model, which are in this case the system integrator, its partners/complementors, and customers.

In Amit and Zott's (2001) model, the most important value driver is efficiency. Efficiency enhancements include e.g. reduction of transaction costs, achievement of scale and scope economies, and reduction of search costs. Another source of value creation are complementaries, which are present whenever having a bundle of goods together provides more value than the total value of having each of the goods separately (for a more thorough discussion on bundling see e.g. Bakos and Brynjolfsson 1999). Business models can also create value by capitalising on complementaries among assets and skills e.g. when firms co-operate and create a SaaS offering together. One of the building blocks of Amit and Zott's model, the strategic network model (Gulati et al. 2000), explores these interfirm relations in more detail and describes how they can be seen as shared resources for the firms in question.

According to Amit and Zott (2001), the value-creating potential of a business model depends also on the extent of which it is able to engage customers to repeat transactions and this value driver is called the lock-in. Lock-in usually refers to the switching costs faced by clients who consider alternative services or products from other companies. Lock-in includes e.g. customer loyalty programs, customisation, and proprietary standards. The fourth value driver, novelty, consists of new ways of conducting transactions, new products and services or new ways of combining products and services (such as in the SaaS model). To conclude, the four value drivers and their effects are usually interrelated.

3   RESEARCH METHODOLOGY

This exploratory and descriptive research study follows the interpretive approach to qualitative research as we conduct a case study and analyse the findings using hermeneutics as our mode of analysis (Myers 1997). We also use the Klein and Myers's (1999) proposed set of principles, i.e. the principles of the hermeneutic circle, contextualisation, interaction between the researcher and subjects, abstraction and generalisation, dialogical reasoning, multiple interpretations, and suspicion, for interpretive field research in conducting our research. By studying the system integrators and their SaaS offerings, we hope to find out answers to the following questions: 1) how the SIs can use the SaaS model in order to provide online services successfully for their customers and 2) how the SIs can succeed in taking advantage of the benefits 3) while solving or downplaying the risks associated with the SaaS model. In this section the case study's research design is reviewed with the help of the research design methods outlined by Yin (2003).

3.1   Case study research design

According to Yin (2003), the case study's research design components are: a case study's questions, propositions, unit of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings. This case study's questions were presented above and the propositions were

presented in the previous sections. The case study's unit of analysis, the system integrators and their SaaS offerings, and the reasons why they were chosen was discussed in section 1. The logic linking of the data to the propositions is done in the following sections where the case study's findings are reviewed using the theoretical framework. As the criteria for interpreting the findings, the cross-case synthesis is done using the models as the framework. This case study is of the multiple case (holistic) type (Yin 2003) since the case study was constructed so that six SIs and their SaaS offerings (which were chosen as the single-unit of analysis) were studied.

The case study used literal replication logic and was designed according to the four research design quality tests according to Yin (2003). We increased this case study's construct validity by using multiple sources of information. Six system integrators were studied and in one of the integrators two interviews were made in order to assess and enhance the construct validity and reliability of the case study. Background information was also collected from various sources. In order to "maintain the chain of evidence" (Yin 2003), a report was written on each one of the interviews and the interviewees also reviewed the case study reports.

The external validity of the case study was increased by trying to select the companies so that the sample would be representative of the Finnish system integrators. In this case study the selected six SIs belonged to the top seven by revenue and their combined size and market share was significant according to a major Finnish weekly IT newspaper Tietoviikko (2003). Furthermore, the case study's reliability was increased as the case study's interviews all followed the same questionnaire and the information about the interviewed persons, all of the background material collected of the companies, and the case study reports were recorded and stored.

3.2 Conducting the case study

A semi-structured questionnaire was created for the interviews. The questionnaire's topics focused on the objectives of this research study and were based on the theoretical framework outlined earlier in the text. A list of the largest (by revenue and personnel) system integrators in Finland was made using Tietoviikko (2003) newspaper's list of the top 250 Finnish IT companies and of these six were interviewed in order to gain an overview and understanding of the Finnish market for software services. The six companies were (in order of their revenue): TietoEnator (a very large local-based integrator with extensive Nordic coverage), Novo Group (a large local-based SI with extensive Nordic coverage, now called WM-Data Novo), IBM Global Services (a medium-sized subsidiary of IBM), HP Services (a medium-sized subsidiary of HP), Ementor (a medium-sized subsidiary of a Nordic SI), and SysOpen (a medium-sized local-based SI, now called SysOpen Digia). The companies' overall average revenue was 385 million euros (max 1 135 Me, min 31 Me) and the average number of employees was 2 351 (max 10 058, min 293). From the selected companies we interviewed senior level directors who had many years of experience in their company and of the IT field in general.

Before the interview each interviewee received the questionnaire, which consisted of twelve topics. Each of the topics was chosen and prepared with the objectives of this research in mind and they were based on the framework. Before the interviews, information was gathered about the SIs mainly from newspapers and trade journals, web-based news services, and from the companies own communications materials. Based on this background work, more defined questions were prepared for the interviews in order to gather more specific information of the companies and their activities.

4 FINDINGS

In this section we do the cross-case synthesis of the findings: the case study's findings are summarised and analysed in light of the case study's objectives using the theoretical framework as the background. Analysis is done on the cross-case level because we are more interested in the SIs and their SaaS offerings in general and not on the individual SIs themselves.

From the networking viewpoint, every SI wanted to be in charge of the customer relationships i.e. all wanted to be in a position between their customers and partners, subcontractors, and SW and HW vendors. In other words, the integrators wanted to be the "one-stop service point" that the customers see and communicate with and by doing so be the company in charge of the software solutions offered to customers. Furthermore, it was interesting to find that the size of the SIs and their resources affected the networking ties of the integrators a great deal: more resources seemed to mean that the integrator had fewer partners. In addition, the size also seemed to influence the system integrators' usage of interfirm ties as their (shared) resources, which is connected with the previous observation. Also lock-in and lockout effects (Gulati et al. 2000) affected every SI: the integrator's ties and membership in certain networks affected its customer relationships and cases. The customers' IT needs' influence on the system integrators' networking activities seemed to affect the SIs only if their resources were limited and if their own portfolio of software products and services could not (be used to) satisfy the customer's needs and/or requirements. Also noteworthy was the discovery that two things especially seemed to affect the integrators' preferences in their decision of partnering vs. acquisition: the SI's size and whether the integrator was a multinational or a local company. In other words, the bigger the integrator and the fewer the international ties (i.e. it is a local-based company) seem to affect so that the integrator prefers acquisitions of the other software firms over partnering with them.

This case study also confirmed that the large, local SW integrators do not cooperate much or create many partnerships with the smaller, local SW companies. The reasons behind this were the integrators' intentions to be largely self-sufficient (some integrators view it as a strategic goal) in terms of what comes to their software portfolio and because of their growth strategy is based on acquisitions and mergers. Also the fact that the local firms are confined within the small Finnish market affects their partnering efforts: other companies are more often viewed as potential competitors than as potential partners.

4.1 Findings from the SaaS point-of-view

All of the system integrators that were studied offered SaaS services, except for SysOpen, which had decided to focus on project-based development, implementation, and integration of IS solutions. Most of the SIs had offered SaaS type of services for a long time, some calling them ASP, hosted or outsourcing services. In addition, all SIs agreed that the most commonly used SaaS pricing model was a monthly fee based on the number of users, which according to the interviewees, was also the most readily accepted and understood pricing model by the customers. Figure 2. depicts a typical SI's SaaS offering. From the SaaS offering perspective, every integrator had taken notice of the service component's increase in their customer cases to which they have responded accordingly and have started to put more resources in their service portfolio development. Even SysOpen was considering whether it should start offering SaaS services.
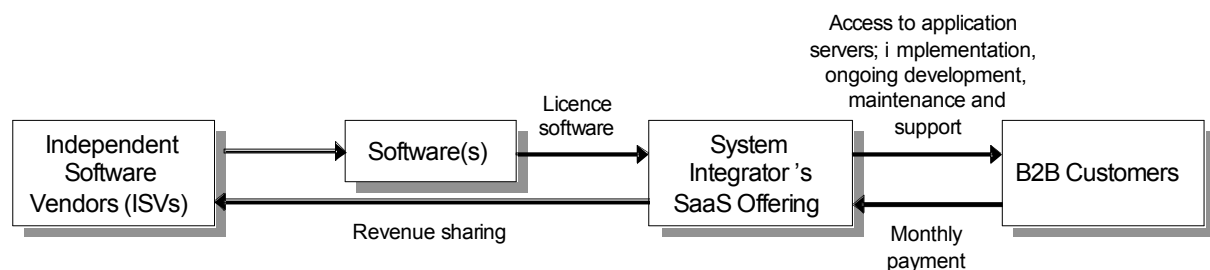

Figure 2.   Example of the system integrators' typical SaaS offering

One interesting finding was that the customers' IT needs' influence on the SIs' networking seemed to be closely related to the integrators' own product and service portfolio. In other words, the customers' needs affected the integrators' partnering/networking efforts especially if the integrator's resources

were limited and/or their own portfolio of software products and services could not be used to satisfy the customers' requirements. The large, local integrators tended to rely on their own software products whereas the smaller and/or subsidiary SIs used their partners' SW products more.

Table 2. summarises how the SIs have been able to take advantage of the previously listed benefits and how they are downplaying the risks of the SaaS business model (see also Table 1). Not surprisingly, the SIs are taking advantage of their domain area how-to knowledge and are offering their SaaS services to a wider customer base. In essence, the SIs are trying to reach economies of scale while taking advantage of economies of scope i.e. the SIs' services can now be offered to and used by a larger number of customer companies. The integrators have made this possible by successfully combining their own service business related skills and assets with their partners' (mostly) product-based business skills and assets. The SIs have also (to a varying degree of success) lowered their costs associated with software distribution and administration, started receiving recurring revenue from their SaaS services, and shortened their sales cycle.

How the SIs are taking advantage of the SaaS model's benefits:	How the SIs are solving/downplaying the SaaS model's risks:
1. Economies of scale: the SIs are offering their SaaS services to a larger number of (existing and potential) customers	1. The SIs have increased resources in partner relationship management and favour long-term relations with their partners
2. Recurring revenue: the SIs have started receiving monthly fees based on the number of users of their SaaS services	2. Typically only small amount of the SIs revenue comes from licence fees: the SIs usually licence the software from their partners
3. The SIs have expanded their potential customer base e.g. amongst the SMEs	3. More emphasis and resources are placed to ensure the SaaS services' scalability, security, and reliability i.e. quality of service
4. Shortened sales cycle: Customers are more quickly able to start using the SI's SaaS services	4. SIs are typically medium or large companies who already have much of the needed assets and resources in place and they spread the investment costs across large number of customers
5. The SIs have lowered their version management and maintenance costs due to centralised hosting and administration of their SaaS solutions	5. SaaS offerings are created with customers' needs and requirements in mind with emphasis on (mass) customisation capabilities
6. The SIs have created differentiated SaaS service offerings in order to increase the customer lock-in and barriers to entry for competitors	6. SIs license their software from ISVs and centrally manage their SaaS offerings

Table 2.   Summary of how the SIs are taking advantage of the SaaS model's benefits and how they are handling the risks associated with SaaS

In addition, the risks associated with the SaaS model have also been successfully downplayed by the integrators (obviously some SIs have fared better than the others in doing this). For example, the SIs are using their existing IT infrastructure assets to host their SaaS offerings and the online services are created with scalability, integration, and customisation issues in mind. To summarise, even though offering software as a service is a complex matter, which entails many challenges and risks, the SIs have widely adopted the model and are starting to (increasingly) take advantage of the SaaS business model's benefits while handling with or solving the associated risks. It is important to note that also the SIs' partners have benefited from their complementary skills and assets in participating in creating the SIs' (bundled) SaaS offerings.

4.2   Findings from the value creation point-of-view

For the system integrators, adopting the SaaS business model has been beneficial: the SIs have been able to take advantage of economies scale and scope, use their existing assets and skills in creating

their SaaS offerings, and increase their potential customer base e.g. among the SMEs. The case study's findings in light of the value creation model are summarised in Table 3.

All interviewed companies offered via their (in most cases) large and varied software service portfolio both more options to choose from and packaged solutions that save the customers' search costs in order to fulfil their IT needs. Each one of the integrators also seeks to benefit from scope and scale economies by creating SW solutions that can be easily re-applied and customised to suit different customers needs.

Efficiency	Complementaries	Lock-in	Novelty
1. Scale economies: lower distribution and administration costs of software, lower customer support and billing costs	1. Bundling offers economies of aggregation by combining information goods, physical products and services, and integration of resources and capabilities among partners	1. Efficiency features and complementary service offering both attracts and retains customers	1. SaaS enables the SIs to offer (bundled) software services in new ways to their customers, e.g. the ability to use these services independently of time and location is very important to customers
2. Scope economies: the SIs can provide their domain area how-to knowledge to a larger audience	2. One-stop shopping: customisation, integration and implementation plus hosting and maintenance	2. The SIs offer (mass) customised SaaS services to suit their customers' business needs and requirements	2. The customers are now able to select e.g. affordable HR and CRM services to suit their needs
3. Repeat transactions: recurring revenue from the SaaS customers	3. Reduced search due to one-stop shopping (see the point above)	3. The integrators want to be the point-of-contact for their customers	
4. The SIs and their partners can focus on their core competencies		4. The SIs use their own proprietary products and services to increase their lock-in	

Table 3.   Summary of the sources of value creation in the system integrators' SaaS offerings

The existence of complementaries between the integrators' and other IT firms' software product and service portfolio and the SIs' size together seemed to have a positive relationship: the integrator's size seemed to affect its interest in partnering with the other IT firms' whose product and service portfolio contained complementary products or services. The middle-sized integrators' philosophy of creating customer solutions by using the best-of-breed ISVs' products also differed from their bigger competitors' means of conducting business. In addition, the subsidiaries of multinational companies seemed to prefer partnering with other firms especially if their software products complemented the subsidiaries own. However, the large, local integrators seemed to prefer to partner only with the internationally established SW companies, such as SAP and Oracle. On the other hand, the middle-sized system integrators' strategy to concentrate on customer management, service aggregation, and integration and the decision to leave the software development to their partners made it easier for them to clarify the boundaries and responsibilities between their partners. Again the amount of the firm's resources was seen to influence the SIs' partnering efforts. Furthermore, the integrators have increased their lock-in of the customers by being the point-of-contact for them and by doing so ensuring that they "own" the end-customers of their SaaS offering.

4.3   Generalisability of the findings

Although the case study's sample size consisted of only six integrators, the results of this case study are generalisable on the analytical level, which is commonplace with case studies (Yin 2003). According to Lee and Baskerville, this research study's findings would fall into the category of

generalising from data to description in their generalisability framework (Lee and Baskerville 2003). We think that this case study gives a good overview of the Finnish system integrators and their SaaS offerings because the companies for this case study were carefully selected and the integrators' combined size and market share was significant.

However, there are issues that present limitations to this study's findings' generalisability and transferability and one of them is the fact that only the largest SIs were studied, which means that the findings are more biased towards the large SIs' way of conducting business with their customers, who also tend to be large companies. Also the small number of interviews could mean that the findings can be somewhat biased due to interviewees own views on their company and its activities. We tried to diminish this effect by selecting interviewees who we felt would have a wider perspective due to their position and long experience in the company and of the IT field itself. Furthermore, the transferability of the results can also be said to be limited because only Finnish SIs were studied. Despite of these misgivings, the findings can be said to be applicable within the Nordic region (Denmark, Finland, Norway, and Sweden) since each one of the SIs of this study also has a strong presence in them.

5   DISCUSSION

It is interesting to note that the system integrators' size in terms of manpower and the number of internal units also seemed to have an effect on the integrators' networking efforts. The smaller integrators all seemed to be a lot more "networked" when comparing them to their bigger counterparts. One reason behind this was the fact that the smaller companies' limited resources meant that in order to serve the bigger clients and successfully handle their large and complicated customer cases the SIs needed to partner with other companies. In other words, because of the smaller integrators' limited resources they needed to concentrate more on their core competencies (i.e., use the limited resources they have more efficiently and effectively) and therefore the smaller integrators needed partners and their resources to fulfil the customers' growing and diverse IT needs.

One observation that the case study's interviews revealed was that the large integrators are so large organisations that they consist of many business units. Each one of these units had their own role within the corporation, business interests, own networking ties with other internal units and "outside" firms, and they even operate in different industry domain areas. This meant that the large companies and their internal networks of different business units formed "miniature SW markets" all by themselves. In order to gain a better overview of the large integrators and their networking and service portfolio management, we should have studied these business units and interviewed people in all or most of them in order to form a more detailed and comprehensive view of these companies. Unfortunately, this was beyond the scope of this study.

One of the important implications of this research is to see how the system integrators' strategic choices affect their operational activities and how these two in turn are influenced by their customers' needs. The SIs' choices on the strategic level consists of making decisions e.g. on whether they want to grow organically or by acquisitions, what to do internally and what to acquire from outside, with whom should they partner, and whether they should focus on product development or providing services etc. These choices affect the SIs' activities at the operational level, e.g. the IS solutions that can be offered to customers depend upon these strategic decisions. This in turn illustrates how the integrator's strategy affects its success. Naturally, the SI's role and position within its own network also affect its strategic and operational choices, as do the integrator's customers. For the SIs, it is important to see how these different issues are interrelated. In addition, the customers' industry domain, size, IT governance decisions, and especially outsourcing decisions shape the demand of software services in the markets and, therefore, also affect the SIs. However, for the integrators the most important issue concerning their service offerings is to resolve how to achieve returns from scale while holding on to scope economies and at the same time fulfilling customers' customisation requirements, i.e., the issues that the SaaS model is concerned on and this research study addressed.

6   CONCLUSIONS

The objective of this exploratory research study was to study how the SIs can use the SaaS model in order to add online services offering to their own service portfolio and how they can take advantage of the SaaS model's benefits while downplaying the associated risks. This paper addressed the above-mentioned issues and proposed different ways of how the SIs can transform their business model into more service oriented one i.e. more towards online service business. We build a framework and conducted a case study consisting of six system integrators and their SaaS offerings. The cross-case analysis of the findings was done using the framework. Our findings include that the SaaS model is useful in providing answers on how the integrators can at the same time achieve the important economies of scale and scope and to fulfil customers' requirements for customisation at the same time.

We also explored the issue of how the SIs can cope with the change in their customers' focus from owning the software to using the software with the SaaS model as we examined the service related aspects of the software business. Our findings include that the SIs are interested in offering their domain area how-to knowledge to a larger audience. For example, the SIs are offering their HR and CRM applications as a service to the SMEs, which means that the SIs are taking advantage of scale and scope economies. Furthermore, the SIs have also (to a varying degree of success) lowered their costs associated with service customisation, started receiving recurring revenue from their SaaS services, and shortened their sales cycle. The integrators have also succeeded in combining their own service business related skills and assets with their partners' (mostly) product-based business assets. To summarise, even though offering software as a service is a complex matter the SIs have widely adopted the model and are starting to (some more successfully than others) take advantage of the SaaS business model's benefits while downplaying or solving the associated risks. However, it needs to be said that for these system integrators, their SaaS service offerings are still more of an addition to their existing portfolio of services and does not represent a complete renewal of these companies' strategies.

In addition to the above, there are many things that will affect the market for software services in the near future. It shall be interesting to see how well the providers of SaaS services achieve in developing and managing their service offerings and how well they can create and maintain their partner networks. The SIs, e.g., need to develop flexible SaaS platforms, which would enable them to offer value-added services that use the SIs' domain area knowledge and existing vertical solutions and interface seamlessly with horizontal business applications. These SaaS platforms should be scalable, customisable, and easy to integrate to other systems in order to increase the level of automation in the software service business.

In conclusion, since this research study concentrated only on exploring the Finnish system integrators, the generalisability and transferability of our findings are somewhat limited. In order to gain more comprehensive and detailed understanding of the SaaS model, also other software companies and their SaaS offerings in different application domain areas should be investigated. Therefore, we suggest that further empirical studies are conducted in order to reach a better understanding of the SaaS business model and its implications to the software markets.

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