OFFERING ERP SOLUTIONS AS ONLINE SERVICES

Aki Lassila
Software Business Laboratory, Helsinki University of Technology, P.O.Box 5500, FI-02015 TKK, Espoo, Finland

Keywords: Software as a Service, business model, enterprise resource planning, value networks, online service.

Abstract: The differences between product and service business are considerable and the change of focus in a firm's business model from one to the other is not easy to accomplish. The objective of this paper is to study how a software product company specialised in developing Enterprise Resource Planning (ERP) applications can use the Software as a Service (SaaS) business model to expand its business. To software companies who provide SaaS services, SaaS offers e.g. lowered production and distribution costs, more predictable cash flows, and shortened sales cycle. However, in order to be able to successfully offer SaaS services the providers have to overcome the potential risks associated with e.g. scalability, reliability, and partner management. In this case study we concentrate on SAP and examine how the SaaS model can be implemented by an ERP software company. Our findings include that SAP has successfully leveraged its market leader position with its SaaS offering and expanded its customer base in the SME markets with the help of its partner network. SAP has also been able to cope with the problems associated with SaaS and managed to take advantage of the SaaS model's benefits.

1 INTRODUCTION

The differences between product and service business are considerable and the change of focus in a firm's business model from one to the other is not easy to accomplish (see e.g. Hoch, D. et al. 1999, Nambisan 2001, Cusumano 2003). For example, the scale economies, which are associated with product business (and especially with information goods), are not easily achieved in service business. Furthermore, the economies of scope (e.g. applying domain area how-to knowledge) are harder to take advantage of in the product business as they usually e.g. increase the complexity of the software development (Nambisan 2001). The Software as a Service (SaaS) business model attempts to bridge the gap between the software product and service business in order for the software companies to provide online services to their customers (SIIA 2001, Hoch, F. et al. 2001, TripleTree 2004, Sääksjärvi et al. 2005). The SaaS model tries to provide answers on how the software firms can at the same time achieve the above-mentioned economies of scale, economies of scope, and fulfil customers' requirements for customisation to suit their business needs at the same time. The purpose of this paper is to study how a software product company can successfully adopt a more service-oriented business model and by doing so increase the number of its customers and access new markets with the help of its partners.

The objective of this exploratory and descriptive research study is to address the above-mentioned issues and propose different ways of how they can be solved. We use a case study, which is centred on one particular domain area, namely Enterprise Resource Planning (ERP), to illustrate how one particular software company has leveraged its domain area knowledge (which is associated with scope economies), expanded its customer base (enjoying from economies of scale benefits), customised its SaaS service offering to suit its partners' and customers' needs, and also leveraged the complementary resources of its partners in creating a packaged service offering (benefiting from economies of aggregation). The case company that we studied was the ERP software market leader SAP, which has operated in the ERP (product) business since 1972, and its SaaS offering. In this paper we define ERP software as a firm-wide information system that integrates key business processes so that information can flow freely between different parts of the firm (Laudon and Laudon 2002), are very complex applications and implementing them requires large investments of money, time, and expertise (Davenport 1998). In

Lassila A. (2006).
OFFERING ERP SOLUTIONS AS ONLINE SERVICES.
In *Proceedings of WEBIST 2006 - Second International Conference on Web Information Systems and Technologies - Society, e-Business and e-Government / e-Learning*, pages 66-73
DOI: 10.5220/0001248000660073

addition, offering ERP software as an online service is complicated since it requires the integration of a range of business processes and information systems that are vital to the customer (Ekanayaka et al. 2002, Guah and Currie 2004). Therefore, offering ERP software as a service is an interesting case to study.

1.1 Structure of the Paper

The paper is structured as follows. We begin by introducing the framework that was used in this study. Next, we review the case study's research methodology and in section four we present the overview of the case company and its SaaS offering. In section five the findings from the case study are analysed. The final section is for discussion of the results and also our conclusions and suggestions for future research are presented.

2 FRAMEWORK

The framework of this study consists of the Software as a Service business model (Cherry Tree 2000, SIIA 2001, Hoch, F. et al. 2001, Sääksjärvi et al. 2005) and Amit and Zott's value driver model (Amit and Zott 2001). These models are the building blocks that form the theoretical background of this paper and are used as the lenses via which the case study's findings are analysed.

2.1 Software as a Service

The Software as a Service is a relatively new concept although the origins of the SaaS business model can be traced back to the time-sharing services (Walsh 2003, Kern et al. 2002). The SaaS model moves the focus from owning the software to using the software as it examines the service aspect of the software business and ways for the software companies to offer a new value proposition to their customers by moving away from the product-based approach to software procurement to more service-oriented one (SIIA 2001, Hoch, F. et al. 2001, Ekanayaka et al. 2002, TripleTree 2004, Sääksjärvi et al. 2005). Some of the proposed SaaS benefits for the customers include that SaaS enables them to focus on core competencies, offers easier access to technical expertise, reduced implementation time, scalability, and economic access to valuable software applications at anytime and from anyplace (Cherry Tree 2000, SIIA 2001, Hoch, F. et al. 2001, Ekanayaka 2002, Kern et al. 2002, Walsh 2003). For the SaaS providers, the proposed benefits of offering SaaS services includes e.g. scale economies in both production and distribution costs, expansion of the potential customer base, more predictable cash flows, and shortened sales cycle (Cherry Tree 2000, SIIA 2001, Kern et al. 2002, Walsh 2003). We have summarised the SaaS model's benefits and risks from the SaaS providers' viewpoint in Table 1.

A white paper of the SIIA introduced the term "Software as a Service" (SIIA 2001, Hoch, F. et al. 2001). SIIA's aim was to change the perspective from outsourcing to that of network-based services by exploring and identifying important issues and critical success factors for the Independent Software Vendors (ISVs) seeking to introduce new online services. Among the important issues that SIIA reviewed were the new skills and resources needed by the ISVs in order to be able to "SaaS enable" their existing products. This could e.g. mean building new versions of their software products and/or forming partnerships in order to create their SaaS offering. SIIA (2001) and others (Cherry Tree 2000, 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 SaaS providers because even the largest companies will have difficulties in providing and managing all of the components needed in creating SaaS solutions.

We propose that instead of the limited outsourcing perspective, the SaaS business model should be understood as a one-to-many e-commerce arrangement dealing with digital products (see e.g. Shapiro and Varian 1999 for a more thorough discussion on digital products). 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). SaaS services, which are also called web services (Currie 2004), are said to be the next generation of Application Service Provision (ASP) services (Cherry Tree 2000, SIIA 2001, TripleTree 2004). The most important differences between the SaaS and the "old" ASP model are that: 1) SaaS applies an e-commerce point-of-view instead of the ASP model's outsourcing view, 2) the SaaS model emphasizes the capability and need to (mass) customise customer solutions, and 3) SaaS is a coherent business model concerned with value creation and value appropriation whereas ASP is more of a technical definition (Lassila 2005).

Table 1: The benefits and risks of the SaaS model for the provider (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 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

More and more ISVs (not only ERP software companies) are implementing the SaaS business model and slowly changing their focus from product-based business (where the customer owns the application software and delivery infrastructure) to providing software-based services (where the customer "rents" the application and the SaaS provider manages the delivery infrastructure). However, creating a successful SaaS offering will require more concrete models of e.g. how the issues related to networking are managed (Gulati et al. 2000, Dyer et al. 2001), how the necessary scale economies can be reached (performance and scalability issues of applications need to be resolved while meeting the customer requirements for integration and customisation see e.g. Cherry Tree 2000, Hoch, F. et al. 2001, Susarla et al. 2003, Walsh 2003, Guah and Currie 2004), and how the continuous flow of product innovations i.e. novelty for the customers (Amit and Zott 2001, Utterback 1994) could be arranged. All in all, these observations make the SaaS model very challenging and some of the literature has probably underestimated the difficulties and risks (SIIA 2001, Walsh 2003, TripleTree 2004) caused by the SaaS model's requirement for the firms to be able to transform their software product business into online service business (Nambisan 2001, Cusumano 2003, Currie 2004, Sääksjärvi et al. 2005). However, it has to be noted that for some ISVs the SaaS model is more of a new sale or distribution channel and does not mean a complete overhaul of the company's strategy. For a software company with an existing customer base (such as SAP), the key questions revolve around bringing software services to market with a minimum of disruption to current sales and distribution channels and achieving a maximum additive effect on sales.

2.2 Value Drivers

The value driver model of Amit and Zott enables the evaluation of the value creation potential of different business models through four value drivers: efficiency, complementaries, lock-in, and novelty. In this paper these four value drivers are used to review and analyse the case firm and its SaaS service offering.

Amit and Zott's (2001) value creation model is based on the virtual markets "in which business transactions are conducted via open networks based on the fixed and wireless Internet infrastructure". According to Amit and Zott, several characteristics of the virtual markets, such as the ease of extending one's product or service range to include complementary products, improved access to complementary resources and capabilities, and new forms of collaboration among firms, have an enormous effect on how value can be created. Value creation opportunities in virtual markets may arise e.g. from new ways to combine information goods, physical products and services, and integration of resources and capabilities among partners. Furthermore, the network-based value perspective of Amit and Zott's model provides a good background to explore and explain the driving forces behind the SaaS providers' reasons for partnering and the factors that affect these partnerships.

The value creation model is based on the value chain framework (Porter 1985), the theory of creative destruction (Schumpeter 1942), the resource-based view (Barney 1991), strategic network theory (e.g. Dyer and Singh 1998, Gulati et al. 2000) and transaction cost economics (Williamson 1975). Amit and Zott (2001) emphasize 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 the firm's business model compasses. The four value drivers help in assessing the total value that can be appropriated by the participants of a particular firm's business model i.e. in this case SAP and its partners/complementors, and their customers.

In Amit and Zott's model the most important value driver is efficiency. Efficiency enhancements include e.g. reduction of transaction costs, achievement of scale and scope economies, reduction of search costs etc. 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 and economies of aggregation see e.g. Bakos and Brynjolfsson 1999). Business models can also create value by capitalising on complementaries among activities e.g. when firms co-operate and create a SaaS offering together. The virtual markets open new value creation possibilities since new relational capabilities, skills, and assets (i.e. shared resources) between firms can be exploited e.g. between online and offline capabilities in order to create sustainable advantage.

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 firms. Lock-in includes e.g. customer loyalty programs, customisation, and branding. The fourth value driver, novelty, consists of new ways of conducting transactions, new product or service innovations, or new ways of combining products and services (as in the case of the SaaS business model). Usually the four value drivers and their effects are interrelated with one another.

3 CASE STUDY

This exploratory research study follows the interpretive approach to qualitative research as we conduct a case study and analyse the findings using Klein and Myers's proposed set of principles (Klein and Myers 1999) in conducting our research.

The case study's unit of analysis is the SAP's SaaS business model, which we think provides useful insights for other software companies on how to create a successful SaaS offering. In this case study we wish to explore 1) how a company with an existing customer base can start offering SaaS services, 2) expand its customers base with the help of its partners, 3) overcome the problems associated with SaaS, and 4) take advantage of the benefits of the SaaS business model. Our propositions were reviewed earlier in section two were the framework was presented. The earlier presented framework is used as the criteria with which the case study's findings are analysed.

For this case study information was gathered via interviews and discussions with SAP's employees and partners. In addition, information was also gathered from newspapers and trade journals, web-based news services, and from the company's own communication materials such as annual and quarterly reports, press releases, product descriptions, and own web pages.

4 SAP AND ITS SAAS OFFERING

SAP was founded in 1972 and its headquarters are in Walldorf, Germany. SAP has operations in more than 50 countries and the company is listed on several stock exchanges, including the Frankfurt stock exchange and NYSE. In, SAP established a specialised subsidiary called SAP Hosting, which specialises in operating and managing SAP solutions in order to be "a flexible hosting provider and ASP for SAP" (SAP 2000). Currently SAP Hosting operates over 300 SAP systems for their customers, employs around 375 staff, and supports more than 130,000 users in four data centres in Germany and the United States (SAP 2005a). SAP Hosting's customer base ranges from "midsize firms right through to the TOP 500 companies in the world" (SAP 2005a). For reference, SAP Group's and SAP Hosting's essential financial figures are shown in Table 2. The figures in Table 2. should be read with caution since they are somewhat misleading because SAP has stated in its annual reports that "portion of SAP's external hosting revenue is not included here but in the revenue numbers of the subsidiaries, which sell the services to the customers of SAP".

Table 2: SAP Group's and SAP Hosting's financial figures 2000-05 (source: SAP's annual reports).

	2000	2001	2002	2003	2004
SAP Group (in millions of €)					
Total revenue	6,264	7,341	7,413	7,024	7,515
Rev. increase %	23%	17%	1%	-5%	7%
Product revenue	2,459	2,581	2,291	2,148	2,361
Prod. increase %	27%	5%	-11%	-6%	10%
Service revenue	2,045	2,549	2,618	2,252	2,273
Serv. increase %	5%	25%	3%	-14%	1%
Net income	616	581	509	1,077	1,311
Return on sales	16%	15%	15%	25%	28%
Employees	24,177	28,410	28,797	29,610	32,205
SAP Hosting (in thousands of €)					
Revenue	6,038	12,702	15,410	27,611	45,696
Rev. increase	-	110.3%	21.3%	79.2%	65.5%
Net income	531	1,192	-4,705	409	3,766
Return on sales	8.8%	9.4%	-30.5%	1,5%	8.2%
Employees	54	71	115	113	220

This means that part of SAP's SaaS revenues are reported in the SAP Group's product and service revenues and do not show up in the SAP Hosting's financials. Furthermore, IDC estimated that in 2003, SAP's SaaS revenue was 53.4 million dollars (note that it was twice the figure that SAP Hosting reported) representing 24 per cent growth from 2002, which placed SAP the eight largest amongst the worldwide Top 10 SaaS providers (e.g. Salesforce.com and Oracle being fourth and fifth respectively, Mizoras 2004). This being the case, it is not possible to draw very accurate conclusions from these financial figures although it is certain that the SaaS services still represent only a very small portion of the whole SAP Group's revenues. However, from these figures we can see the trend that SAP's SaaS business has grown faster than either total, product, or service revenues and that business has been profitable with the exception of 2002, which was financially a bad year for the whole SAP Group.

4.1 Offering ERP Software as a Service

From 2000 onwards, SAP has offered its mySAP ERP software as a service via SAP Hosting and via its SaaS partner and reseller network. Following the SAP Group's market segmentation strategy, the SAP Hosting targets its SaaS offering towards the medium-sized and large, Top 500 companies in order to avoid or lessen the channel conflict with its SaaS partners. SAP's SaaS partners include ACS, Corio, CSC, and USInternetworking. In Figure 1. we present an overview of the SAP's SaaS business model.

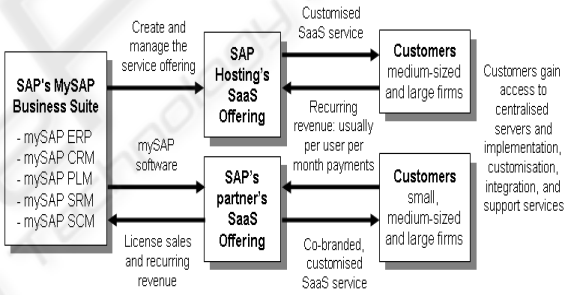

Figure 1: SAP's SaaS business model.

In order to create its own mySAP SaaS offering, SAP uses e.g. HP as its IT infrastructure provider. The SAP's SaaS offering consists of the mySAP Business Suite, which includes Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), Product Lifecycle Management, Supplier Relationship Management (SRM), and Supply Chain Management (SCM) applications. These are further divided into functional modules, which include e.g. Sales & Distribution (SD), Material Management (MM), ERP Financials, and ERP HR. From these modules the customers can select the services they want to purchase. It is also possible for the customers to provide and maintain some of the mySAP functionality by themselves and buy only some parts of their ERP solution as a SaaS service from the SAP or SAP's SaaS partners.

For a relatively small monthly subscription fee (compared to the high ERP product license and

implementation costs), the SaaS customers can subscribe to these mySAP SaaS services. The customer fee is usually per customer (end user) per month based subscription fee, which depends on the amount of functionality and customisation of the SaaS service. The SAP's SaaS revenue model is straightforward: SAP Hosting receives recurring revenue from its own customers and SaaS partners pay either the mySAP software license fee (which depends on the chosen functionality and modules) or the partner and SAP sign a revenue sharing arrangement.

It has to be also noted that the SAP's SaaS partners usually do not offer the whole range of the Business Suite's functionality, instead they are usually concentrating on offering only some of the modules of the Suite to suit a certain customer segment's needs. In addition, the SAP's partners usually offer also other companies' software as a service and integration and customisation services for these as well. The complexity of the ERP software makes offering it as a service difficult. The number of possible combinations of functionality and features the SaaS customers can choose, what their ERP SaaS service consists of, and how it is implemented is very high. That is why SAP and its SaaS partners also offer consultation services. These consultation services usually include design and planning, integration, customisation, implementation, and training services in order to create and offer the customer an ERP solution that suits their needs. Implementing an ERP solution can be an extremely complex task especially if the amount of functionality is high and customer's customisation requirements are numerous. This makes ERP software's suitability for SaaS services a very challenging task: how to productise the service offering and reach economies of scale while still fulfilling the customers' customisation requirements? Usually this problem is handled by the SaaS providers by limiting the number of mySAP modules they offer and by offering only limited customisation features. Naturally the complexity also affects the implementation time since a plain vanilla ERP solution with very little customisation can be more quickly be put in use by the SaaS customer and it also costs less. Unfortunately, these plain vanilla solutions often do not suit the customer's needs and requirements regarding e.g. integration.

5 CASE STUDY'S FINDINGS

For SAP, the SaaS business model has been successful: SAP has been able to increase its sales, international operations, and customer base profitably without having to make huge investments e.g. in different countries' sales and support personnel. The case study's findings in light of the value creation model are summarised in Table 3.

Furthermore, SAP has been able to capture all of the previously listed benefits of the SaaS business model (see Table 1.) except for the item number six because SAP especially wants other companies to also offer mySAP-based SaaS services. This is part of SAP's overall strategy of growing its partners, complementors, and resellers business as well as its own at the same time. As the market leader, SAP has over 50 per cent share of the overall ERP software market and it has chosen the growth strategy of growing with its partners (see e.g. Hoch, D. et al. 1999 and Gawer and Cusumano 2002).

SAP has also taken advantage of its domain area how-to knowledge and succeeded in offering its mySAP Business Suite as a service to a wider customer base through its SaaS partners and resellers. In essence, SAP has managed to reach economies of scale while taking advantage of economies of scope i.e. its ERP software can now be offered to and used by a larger number of customer companies. This has been made possible by SAP, which has successfully combined its own product-based business with its partners' service business related skills and assets. By enabling its partners to sell mySAP SaaS services, SAP has also lowered its costs associated with sales, distribution, customisation, and customer support (SAP's partners handle them) and also started receiving recurring revenue.

In addition, the risks associated with the SaaS model have also been successfully dealt with. SAP has downplayed the possible channel conflicts and selected partners (such as HP as its IT infrastructure provider) that complement its own skills, resources, and e.g. geographical coverage. Also, the underlying technology of mySAP software makes it a scalable, web-enabled application and therefore suitable for online services. Furthermore, instead of (initially) reducing revenue due to the adoption of the SaaS model, SAP has increased its software license sales through its partners and expanded its potential customer base successfully to the SMEs, which are a lucrative market for the big ERP software companies.

To summarise, even though offering ERP software as a service is a complex matter SAP has successfully taken advantage of the SaaS business model's benefits and has managed to downplay the associated risks. Also the SAP's SaaS partners and resellers have benefited from their complementary skills and assets in creating a bundled service offering.

Table 3: Sources of value creation in SAP's SaaS offering.

Efficiency	Complementaries	Lock-in	Novelty
1. Scale economies: lower distribution and marketing costs of SW, lower customer support and billing costs	1. Bundling offers economies of aggregation: enables brand leveraging of the SAP and local, domain-area knowledge of partners	1. Co-branded, tailored ERP offering to suit both the SaaS partners' and SaaS customers' needs and requirements	1. ERP as a service offering via SAP's own and partners' sales and delivery channels
2. Scope economies: SAP provides ERP implementation how-to knowledge to a larger audience	2. One-stop shopping: ERP software and implementation plus hosting and maintenance.	2. High-volume repeat transactions: recurring revenue from joint ventures and SaaS partners' customers	2. SMEs are now able to select an affordable mySAP ERP service to suit their needs
3. Provides an easy, low cost, and low risk access to new markets of SMEs	3. Reduced search (efficiency related offering): SAP's partners act as the sales and distribution channel	3. Efficiency features and complementary service offering both attracts and retains customers	
4. SAP and its partners can focus on their own core competencies	4. SAP benefits from its ERP software market leader's advantage and positive feedback effects		

Although this case study concentrated on only one company and its SaaS offering, the results of this case study can be said to be generalisable on the analytical level (level-1 inference), which is commonplace with case studies (Yin 2003). According to Lee and Baskerville's generalisability framework, this research study's findings would fall into the category of generalising from data to description (Lee and Baskerville 2003).

6 DISCUSSION AND CONCLUSIONS

The purpose of this paper was to study how a software product company can use the Software as a Service model to expand its business. We conducted a case study of SAP and its SaaS offering and found out that by successfully managing to solve or avoid the associated risks and by taking advantage of the SaaS model's benefits SAP managed to increase its sales, potential customer base, and started receiving recurring revenue. Furthermore, also SAP's SaaS partners have benefited from the usage of the SaaS model. However, it needs to be said that for SAP, its SaaS service offering is more of an additional sale and distribution channel and does not represent a major renewal of the company's strategy.

On the basis of this study, we can say that the SaaS business model can be a very successful part of a large software firm's strategy, especially when its primary markets are saturated (the very large, top 500 companies already have ERP systems in place). In addition, on the basis of our analysis we think that instead of just concentrating on efficiency improvements, the sustainable way to generate value using the SaaS model is to provide easy and low-cost access to useful software applications, based on a broader set of value sources i.e. complementaries, novelty, and lock-in.

In conclusion, since this study concentrated only on exploring the SAP's and its partners' SaaS offerings, the generalisability and transferability of our findings are limited. Therefore, further studies should be conducted in order to study SAP's SaaS customers, SAP's SaaS partners, and also different vertical segments where ERP software is used in order to gather a more comprehensive view on the SaaS ecosystem that has evolved around the platform leader SAP. Also, in order to gain more extensive and detailed understanding of the SaaS business model and its implications to the software companies in general, also other software companies and their SaaS offerings, preferably in different application domain areas, should be investigated.

REFERENCES

Amit, R. and Zott, C., 2001. Value Creation in E-business. *Strategic Management Journal*, 22(6/7), 493-520.

Bakos, Y. and Brynjolfsson, E., 1999. Bundling Information Goods: Pricing, Profits, and Efficiency. *Management Science*, 45(12), 1613-1630.

Barney, J., 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.

Cherry Tree, 2000. Second Generation ASPs. *Spotlight Report*, Cherry Tree & Co., Retrieved August 30, 2005, from http://www.triple-tree.com/research/technology/asp_sep_01.pdf

Currie, W., 2004. The Organizing Vision of Application Service Provision: A Process Oriented Analysis. *Information and Organization*, 14, 237-267.

Cusumano, M., 2003. Finding Your Balance in the Products and Service Debate. *Communications of the ACM*, 46(3), 15-17.

Davenport, T., 1998. Putting the Enterprise into the Enterprise System. *Harvard Business Review*, July 1998, 121-131.

Dyer, J. and Singh, H., 1998. The Relational View Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review*, 23(4), 660-679.

Dyer, J., Kale, P. and Singh, H., 2001. How to Make Strategic Alliances Work. *Sloan Management Review*, Summer 2003, 37-43.

Ekanayaka, Y., Currie, W. and Seltsikas, P., 2002. Delivering Enterprise Resource Planning Systems through Application Service Providers. *Logistics Information Management*, 15(3), 192-203.

Ekanayaka, Y., Currie, W. and Seltsikas, P., 2003. Evaluating Application Service Providers. *Benchmarking*, 10(4), 343-354.

Gawer, A. and Cusumano M., 2002. *Platform Leadership*, Harvard Business School Press, Boston, MA.

Guah, M. and Currie, W., 2004. From ASP to Web Services: Identifying Key Performance Areas and Indicators for Healthcare. *In Proceedings of the 12th ECIS*. Retrieved August 30, 2005, from http://is.lse.ac.uk/asp/aspecis/

Gulati, R., Nohria, N. and Zaheer, A., 2000. Strategic Networks. *Strategic Management Journal*, 21, 203-215.

Hoch, D. et al., 2000. *Secrets of Software Success*, Harvard Business School Press, Boston, MA.

Hoch, F. et al., 2001. Software as a Service: "A to Z" for ISVs, Software & Information Industry Association (SIIA). Washington, DC, Retrieved August 30, 2005, from http://www.siia.net/estore/pubs/SAZ-01.pdf

Kern, T., Kreijger, J. and Willcocks, L., 2002. Exploring ASP as Sourcing Strategy: Theoretical Perspectives, Propositions for Practice. *Journal of Strategic Information Systems*, 11, 153-177.

Klein, H. and Myers, M., 1999. A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, 23(1), 67-94.

Lassila, A., 2005. Moving from Product-Based Business to Online Service Business. In *Proceedings of the IADIS e-Commerce Conference*, 109-117.

Laudon, K. and Laudon J., 2002. *Management Information Systems: Managing the Digital Firm*, Prentice Hall, Upper Saddle River, NJ.

Lee, A. and Baskerville, R., 2003. Generalizing Generalizability in Information Systems Research. *Information Systems Research*, 14(3), 221-243.

Mizoras, A., 2004. Worldwide Software as a Service 2003 Vendor Shares: SaaS and Enterprise ASP Competitive Analysis. *IDC Competitive Analysis*, IDC #32055.

IDC, 2004. U.S. Software as a Service 2004-2008 Forecast by Delivery Model. *IDC - Industry Developments and Models*, IDC # 31267.

Nambisan, S., 2001. Why Service Business are not Product Businesses. *MIT Sloan Management Review*, 42(4), 72-81.

Porter, M., 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York, NY.

SAP, 2000, *SAP Annual Report 2000*. Retrieved August 30, 2005, from http://www.sap.com

SAP, 2005a, *SAP Hosting: Company Portrait*. Retrieved August 30, 2005, from http://www.saphosting.com

SAP, 2005b, *SAP Annual Report 2004*, Retrieved August 30, 2005, from http://www.sap.com

Schumpeter, J., 1942. *Capitalism, Socialism and Democracy*. Harper, New York, NY.

Shapiro, C. and Varian, H., 1999. *Information Rules: a Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, MA.

SIIA, 2001. Software as a Service: Strategic Backgrounder. *Software & Information Industry Association (SIIA)*, Washington, D.C. Retrieved January 13, 2004, from www.siia.net

Susarla, A., Barua, A. and Whinston, A., 2003. Understanding the Service Component of Application Service Provision: An Empirical Analysis of Satisfaction with ASP Services. *MIS Quarterly*, 27(1), 91-123.

Sääksjärvi, M. and Lassila, A.,2005. Role of The Customer Value in the Software as a Service Concept: Empirical Evaluation of the Factors Affecting the Customer Lock-In of the Online Newspapers. In *Proceedings of the 5th IFIP I3E Conference*, 543-557.

TripleTree, 2004. Software as a Service: Changing the Paradigm in the Software Industry. *SIIA and TripleTree Industry Analysis Series*. Washington, DC. Retrieved August 30, 2005, from http://www.triple-tree.com/research/technology/saas_aug04.pdf

Utterback, J., 1994. *Mastering the Dynamics of Innovation*, Harvard Business School Press, Boston, MA.

Walsh, K., 2003. Analyzing the Application ASP Concept: Technologies, Economies, and Strategies. *Communications of the ACM*, 46(8), 103-107.

Williamson, O., 1975. *Markets and Hierarchies, Analysis and Antitrust Implications: A Study in the Economics of International Organization*, Free Press, New York, NY.

Yin, R., 2003. *Case Study Research: Design and Methods*, Sage Publications, Thousand Oaks, CA.