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# Business Models and Internationalization of Software Firms: A Comparative Case Study

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## Abstract

This paper investigates the impact of software firms' business models to internationalization behavior by using a comparative case study. The selection of the firms for this study was based on their level of internationalization. The case firm Alpha had foreign operations only in the Nordic countries whereas the case firm Beta sold their product to many distant markets. The findings, related to the general business model framework that was used, indicate that there were very few differences between the firms' business models. However, a more detailed examination revealed that product regulations for the firms' products were the major distinctive factor that impacted the internationalization behavior of these firms.

**Keywords:** software business, business models, internationalization, SMEs, case study

## Introduction

Internationalization has generally been a common growth strategy for small and medium-sized software firms, especially in countries with a very limited domestic market (Autio et al. 2000; Sapienza et al. 2006), such as Finland. Although these types of firms suffer from a lack of adequate knowledge and resources, they generally tend to seek growth opportunities in foreign markets very early on in their life cycle (Oviatt & McDougall 2005). For this reason, internationalization of software firms has attracted increasing attention in the fields of international business and international entrepreneurship (Bell 1995, 1997; Coviello and Cox 2006; McNaughton 1996; Moen et al. 2004, Ojala & Tyrväinen 2006, 2007, among others). Most of these studies have investigated the impact of software firms' resources, social capital or network relationships on the internationalization process. However, despite increasing research related to international behavior of software firms, current studies commonly treat software firms as a single group without any attention to differences between them.

The results obtained from these types of studies might be somewhat misleading, because software firms implement different kinds of business models, which might also affect their internationalization process and behavior. Although the impact of business models was not the focus of the earlier studies, there have been some findings which highlight the important role of some of the business models elements. These findings suggest that a firm's product offering (Bell 1995, 1997), needs for customer support (Burgel and Murray 2000), customization (McNaughton 1996), and the intangible nature of the product (Brouthers et al. 1996) impact on the internationalization of software firms. A recent study of Ojala and Tyrväinen (2006) also pointed out that a product strategy has a strong impact on software firms' entry mode choice in the target country. In addition, Kuivalainen (2001) found that

software firms with highly standardized software products have a greater number of international customers and more target countries than those with less standardized products.

In this study, we argue that a software firm's business model is closely related to the level and speed of the firm's internationalization capabilities. To emphasize this, we are not challenging the importance of some factors (e.g., network relationships, resources, knowledge, etc.) frequently mentioned in earlier studies affecting the internationalization of firms. The purpose of this study is to investigate software firms' business models to find out differences in their internationalization behavior.

## **Literature Review**

Business model is a widely used term in various academic fields. In their study, Rajala et al. (2004) summarize the main elements of a business model, including value creation process and capturing the opportunities in the market into revenue through sets of activities, processes and transactions. These elements emphasize the procedural nature of a business model, where value creation processes describe the value proposition and its accomplishment, and where value collection processes describe the sources of revenue and the roles of various business actors (Rajala et al. 2003a). For a software firm, the business model considers the main strategic choice of a software business between being a product oriented firm or a service oriented firm, product oriented firms receiving most of their income and revenues from new sales, e.g., license sales, and service firms relying on sales of service and labor (Cusumano 2004). Kontio et al. (2005) argue further that the business models of a software firm should influence its software engineering process, decisions, and process improvement activities. Understanding the links between a strategy, the business model, and the software engineering process and its decisions is a critical driver in the software firm's competitiveness (Kontio et al. 2005). A good business model is an essential base for every successful organization, whether it is a new venture or, already, an established one (Magretta 2002).

### **A framework for analyzing software business**

A software firm has several options in structuring its service propositions, managing customers, and conducting the business as a whole. Rajala et al. (2003a) have structured a framework that combines four different dimensions of a software business model: product strategy, distribution strategy, revenue strategy, and services and implementation. These categories will help to identify the key characteristics of software businesses to distinguish different business models from each other (Rajala et al. 2003a). Figure 1 decomposes a generalized business model into four different elements.

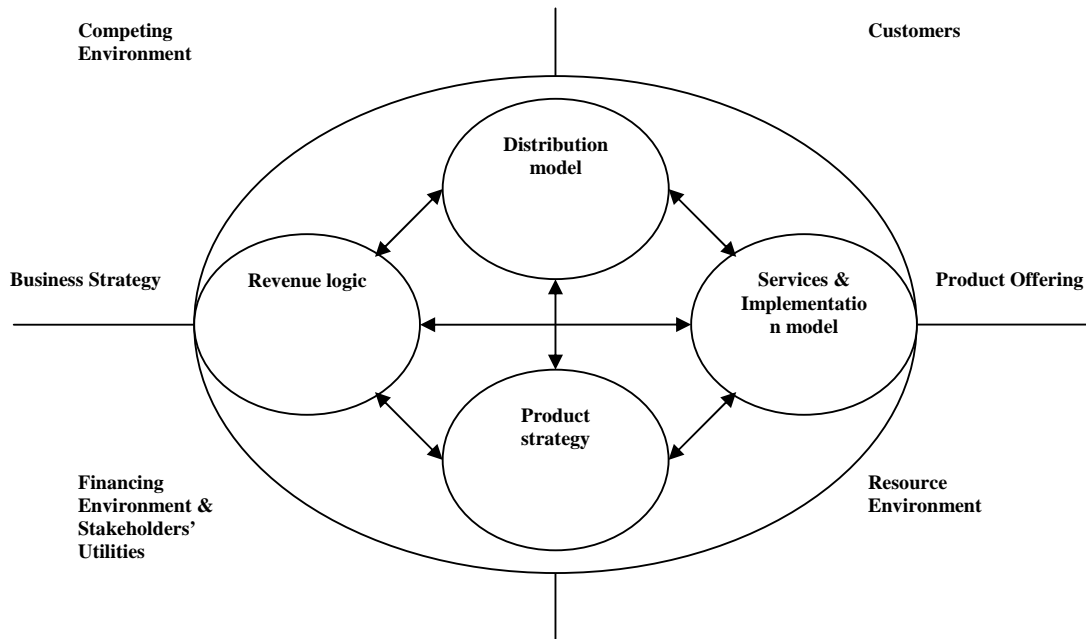


Figure 1. Elements of a software business model (Rajala et al. 2003a)

*Product Strategy*

A product strategy defines how the software firm has composed its product and service proposition and the way the product development work has been organized within the firm. In this context, a product proposition describes the focus of product development and its outcome, the core product and service offering of a software firm (Rajala et al. 2003a). Product strategy depends on a software standardization level (Hoch et al. 1999), which can vary from tailor-made customer specific solutions to highly standardized mass-market products. In the internationalization literature, customization needs (McNaughton 1996) and the nature of a firm’s products offering (Bell 1995) has been found closely related to the software firm’s internationalization behavior. In addition, a study by Ojala and Tyrväinen (2006) found that a software firm’s product strategy is closely related to its selected entry mode in the market. The product strategy can vary from customer specific software solutions to the development of highly standardized software products (see Figure 2).

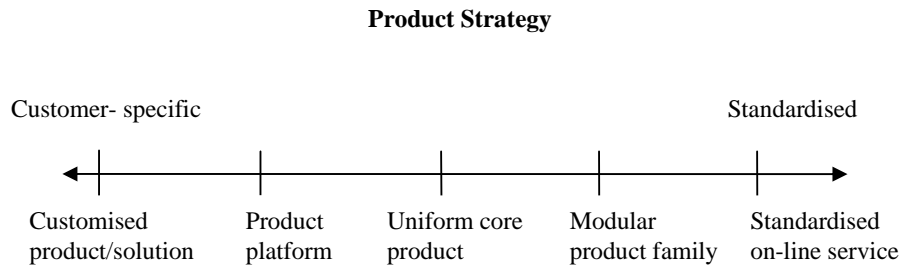


Figure 2. The scale of options related to “Product Strategy” (Rajala et al. 2003a)

### *Revenue logic*

The second dimension describes the way the software business generates its revenue and profit, and is referred to here as the revenue logic or revenue model. Revenue model can be kept as an inherent part of the business model, and it basically includes the firm's sources of revenues and other financing sources. The revenue logic consists of a pricing strategy, a cost strategy, and the sources of revenues (Rajala et al. 2003a). The pricing strategy serves several purposes for a firm. Pricing objectives provide a frame of reference for a pricing strategy development, where the pricing objectives may be aimed to gain a market position, achieve financial performance, enhance product positioning, stimulate demand, and influence the competition (Cravens & Piercy 2003). As highlighted in some studies (Bakos & Brynjolfsson 1999; Mahadevan 2000) the pricing strategies in software firms differ significantly due to generally high initial costs and often remarkably low reproduction costs.

For a software firm, the revenue model can include direct and indirect revenues. Direct revenues are gathered from the user of the software whereas indirect revenues are gathered from third parties or the value is created for the firm by some other means. The revenue model options have been identified in the literature as follows: pricing based on effort, cost or value, license sales, royalties, revenue sharing, hybrid models, loss-leader pricing, and other models, e.g., media model (Rajala et al. 2003a).

### *Distribution model*

The third dimension of the framework considers a distribution model. The distribution model describes how the marketing and sales of the product and service offerings have been organized and identifies the seller and marketers of the product and service offerings. In addition, the sales process is also a key element of the distribution model. The sales process describes the agreement between the vendor and a customer about the characteristics of the solution delivered (Rajala et al. 2003a). In their study, Ojala and Tyrväinen (2006) found that Finnish software firms in the Japanese market used mainly direct sales through their subsidiaries, representative offices or joint ventures. In addition, some of the firms used local distributors in the market to deliver their products to end users (Ojala & Tyrväinen 2006). In Figure 3, some subcategories of the distribution strategies which, e.g., a software firm can include, have been identified.

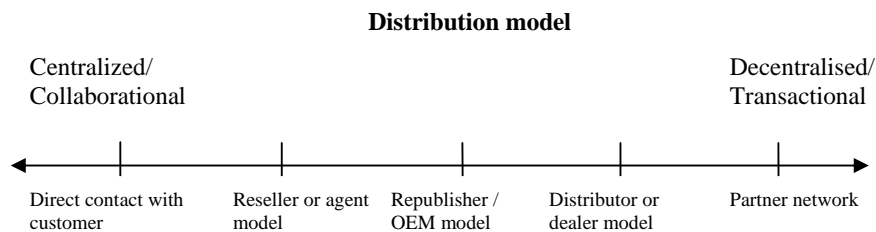


Figure 3. “Distribution Model” categories (Rajala et al. 2003a)

### *Service and implementation model*

The last dimension of the framework is called the services and implementation model. This part of the framework describes how the product offering will be provided for the customers

and deployed as a working solution, which can include the physical distribution, implementation, and maintenance of the product. The service and implementation factors can be viewed from several points of views. Some software firms may handle the distribution, installation, and maintenance entirely, but other firms only deliver the product for the customer for self-installation and maintenance (Rajala et al. 2003a). In his study, Bell (1995) found that the complexity of a software product is related to the market entry strategy of small software firms. For instance, firms whose products are complex and require intensive installation, training, upgrading, and after-sales services, led a firm an intensive cooperation with its customers. The findings of Burgel and Murray (2000) also indicate that requirements for customer support in high technology industries are related to the chosen entry mode in the market. The range of different approaches to the services and implementation are shown in the Figure 4 below.

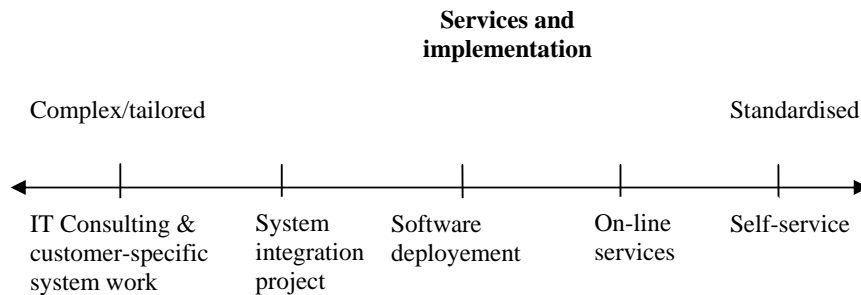


Figure 4. Services and implementation approaches (Rajala et al. 2003a)

## Methodology

The case study method was selected for this study, because it enables in-depth investigation into firms’ internationalization and business models. According to Yin (1994) the case study method enables explaining the significance and cause-and-effect relationships of the phenomena under the investigation. The case firms were selected for theoretical reasons, as suggested in Eisenhardt (1989), rather than randomly, and were based on their foreign operations. Both of the case firms were Finnish small and medium-sized enterprises (SMEs) named here as Alpha and Beta. Alpha’s foreign operations were limited to the Nordic countries whereas Beta sold their products to many distant countries, such as the U.S., Japan, South-Korea, and Taiwan. Differences in the internationalization processes of the case firms enable us to investigate the reasons for dissimilarities in their internationalization behavior. In the research process, semi-structured open-ended interviews were conducted with President/CEO, Vice President, and Sales Director in both case firms. Thus, all the interviewed persons had an in-depth knowledge of their firms’ business models and foreign operations.

## Case Overviews and Findings

Alpha is a software firm that develops, delivers, and provides financial software solutions for financial institutions. Alpha was established in 1986 and operates in the Nordic market, where it has a representative office in Sweden and indirect operations in Norway and Denmark. They have approximately 60 IT and/or financial professionals working in the firm.

Beta is a software firm that provides wireless multimedia solutions for mobile phone and semiconductor manufacturers. Their products consist of hardware and software video codecs for handheld devices. Beta was established in 1992 and they operate in several markets. They have offices in the U.S., Japan, South-Korea, Taiwan, China, and Germany. The number of employees working at Beta is approximately 90.

### Product Strategies

Alpha's product strategy is in a strong relation to the core-product, which is characteristic of a software product. At the same time the firm also has to pay keen attention to customization to a certain level. This customization level is highly dependent on the customer's needs. The aim is to productize all the customized functionalities into the core-product, thus increasing the core-product's functionalities.

*“This core-product is completed with different modules of the kind that complement the core-product's functionalities...plus - part of the integration are always customer tailored changes, customer tailored interfaces, and those types of things.” (President, Alpha)*

Beta's product strategy focuses on embedded software products for mobile devices. Their product offering includes a core product that requires customization for each customer's needs. Usually this requires intensive cooperation with the client to specify the product requirements and to integrate the final product to the customer's product.

*“Our product - it always has to be integrated to customer [needs] and processes, it is always a central part of the product delivery.” (Vice President, Beta)*

### Revenue logics

The revenue logic of Alpha is composed of three elements, mainly: from new license sales, project expenses, and maintenance and support agreements. Commonly, project expenses are from 1/3 of the total price in the whole software agreement. The rest of the 2/3 is divided between a license price and a maintenance agreement. However, increasingly customers are asking alternative pricing methods, because nowadays many firms are not willing to make high up-front investments in software products. These customers want to have pricing models that are built around a certain rent price, or they may be willing to pay a fee per transaction, handled by the system. Alpha has responded to the customers' needs and introduced alternative pricing models to satisfy the demand for the pricing methods required. Some of the customers are already using the rental model, and transaction based pricing is already used with certain product concepts.

*“These transaction or rental based sale cases are very tempting for the company, because the predictability level of the company’s revenues increases and a big part of the yearly incomes is secured, and it does not require active new sales. The transformation to the alternative pricing models is very expensive, though, and we cannot just close our up-front based license sale and change all the customers to use alternative pricing models, because the company’s financial situation does not stand this kind of a quick change. In the long run the aim is get more and more customers to change into rental or transaction based revenue models.” (Sales Director, Alpha)*

Beta’s revenue logic consists of license fees, royalties per device sold, and maintenance fees. When Beta makes a contract with a customer, they get a license fee from their product. Afterwards, if their customer launches a mass-production, Beta will get royalties for each device sold. They also have a voluntary annual maintenance fee for their clients, which depends on the customers’ support needs and include, for instance, forthcoming product updates.

### **Distribution models**

Alpha’s product offering requires in-depth knowledge from the vendor side, thus the sales and marketing processes are handled wholly within the firm by direct contacts with the customers. In addition, Alpha handles the distribution and service of the software by themselves. Alpha has considered expanding the distribution networks, especially when expanding their foreign operations.

*“From the internationalization perspective, especially in the case of Sweden or other international markets, we have to think about possible cooperation partners in case of sales and implementation.” (Vice President, Alpha)*

Beta uses direct contacts with their customers, mainly because selling of their products requires in-depth technical knowledge and intensive cooperation with the customers during the sales process. They had also tried to find suitable distributors, but their highly specialized products, demanding sales process, and long sales cycles limit the use of distribution channels in the sales process.

*“We have evaluated a few distribution channels and even tested some for a while, but it did not work so well in our case because the product is so complex and selling it is fairly difficult and the sales cycle is rather long... With some products it [sale-cycle] can easily be one year or more... it is not in the distributors’ interest, the sales should be faster to get revenues. In addition, it [product] includes needs for special knowledge that is required for sales, and many of them [distributors] do not have that.” (Sales Director, Beta)*



## **Service and implementation models**

Alpha handles the whole service and implementation process within the firm, thus Alpha does not use any outsiders for these functions. The service and implementation model is organized so that the headquarters can give installation and after-sales support as a remote service. However, if a problem solving requires more intensive work then someone from the headquarters or representative office will visit the customer.

*“Installations, implementations and projects are organized as a part of this company’s main activities, because the product family with all the components and modules is fairly wide and it requires a high amount of local participation, and also the products advance all the time, which produces all the time new challenges in that sense.” (Sales Director, Alpha)*

Beta’s customers were supported from the headquarters and by their representatives in the markets. Beta’s representative in the target country or in a nearby country, or the headquarters give installation and technical support to the customers. Depending on the customization level of their products, the implementation phase takes from a couple of days up to three months.

*”It [implementation] varies very much depending on the customers and products. So it depends on what kind of product we are selling, is it a whole product or a sub-product. It can take only a few days at its best but at its worst it can take up to three months.”(Sales Director, Beta)*

## **Discussion of Research Findings**

As the case descriptions imply, there are relatively few differences in the business models between Alpha and Beta. Both of the firms used a fairly similar distribution model, service and implementation model, and revenue logic. The firm’s product strategies were also pretty much corresponded to each other, with a distinction that Beta’s products were more tailored to the customers’ needs. However, these differences do not give an adequate explanation why Beta’s business was more global than that of Alpha, which sold their products only to the Nordic countries. The findings of this study imply that when using the framework of Rajala et al. (2003a, b) there are relatively few differences (see Table 1) found within the business models of the case firms, which would explain the differences in their internationalization behavior.

Business model	Alpha	Beta
Product strategy	Enterprise solutions	Tailor-made software solutions
Revenue logic	Licensing, project expenses, and annual maintenance fees	Licensing, royalties, and annual maintenance fees
Distribution model	Direct sales	Direct sales
Service and implementation model	Representative and the headquarters give installation and technical support	Representative and the headquarters give installation and technical support

Table 1. Business models of the case firms

However, a more detailed investigation showed that target industry regulations were the major distinctive factor between the case firms. Alpha provided financial software solutions for financial institutions, such as banks and fund management companies, and their products were highly dependent on industry regulations in the target country. Although the financing markets are very international, the financial software providers are relatively local players on these particular markets. This is mainly a consequence of high regulation in finance markets where each market area has its own legislation even in the Nordic countries. Thus, it requires a lot of knowledge and high expertise from software providers to be able to fulfill the needs of a certain market. Beta has not encountered problems of this kind, because they provide video codecs for hand-held devices, and their products are globally standardized and not controlled by industry regulations in the target country. President of Beta explained this in the following manner:

*“The good side of these mobile phones is that they are truly global products that are produced by large manufacturers around the world...They have thought about how to localize, and it has made it very easy to implement. The user interface is similar in every country, and it [language] is localized just by using a certain file. Altogether, product regulations are not a problem in our case”*

This observation implies that software firms which provide products or services for industries that are loosely or not at all controlled by local regulations are better posed to internationalize their operations to several markets. On the other hand, firms which have to follow strict local or global requirements for their products have to struggle to comply with these requirements, and this seems to slow down their internationalization process. This is also in line with the suggestion of Shapiro and Varian (1999) that legal factors have a main impact to a firm’s business models. This factor had not been taken into account by Rajala et al. (2003a, b) framework. Based on the findings in this study, product regulations should be considered when analyzing a firm’s business model and its internationalization prospects. Figure 5 suggests how the framework should be expanded to include the degree of legislation in a target country. The idea here is not define what should the elements within the category be; the purpose is to outline on which side of a roughly graded continuum of legislative factors each type of software product should be located.

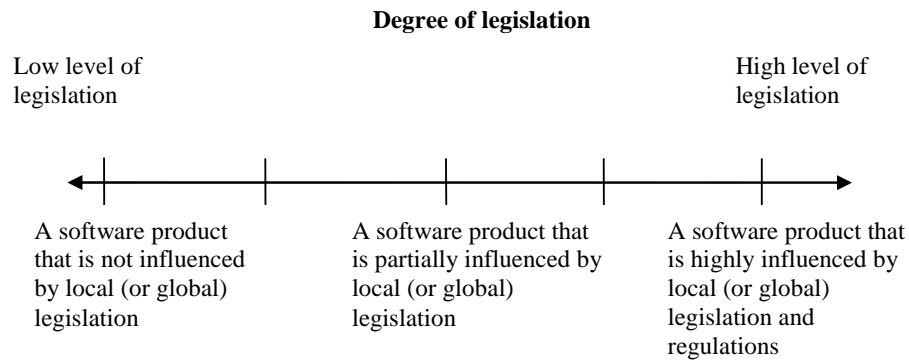


Figure 5. Software products in relation to their legislation requirements

## Conclusions

The studies related to internationalization of software firms have mainly focused on firm level factors such as firms' resources, network relationships, and social capital (Bell 1995; Coviello & Cox 2006; Coviello & Munro 1997). Although the impact of these factors is unquestioned, findings in this study propose that the impact of business models of software firms should also be included when investigating internationalization of software firms. A business model analysis helps in getting more detailed information about a firm's product offering and how it suits for international markets.

Altogether, this study proposes that product regulations in a target industry are the major factor for explaining the differences in the internationalization behavior of the case firms. The study also recommends that a regulation environment should be added to the business model framework of Rajala et al. (2003a) when analyzing the internationalization of a firm. Because the sample of this study included only two case firms, its findings are not generalizable and more research is needed to investigate this topic. Further research on integrating business model analysis with more firm-specific variables, such as resources and network relationships, would be beneficial. This could give a more holistic view to the internationalization of software firms and help managers to evaluate their products suitability and firm's resources for international markets.

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