



## Charging Customers or Making Profit? Business Model Change in the Software Industry

Margit Malmlose Peyton<sup>1</sup>, Rainer Lueg<sup>1\*</sup>, Sevar Khusainova<sup>1</sup>, Patrick Sønderskov Iversen<sup>1</sup> & Seth Boampong Pantii<sup>1</sup>

### Abstract

**Purpose:** Advancements in technology, changing customer demands or new market entrants are often seen as a necessary condition to trigger the creation of new Business Models, or disruptive change in existing ones. Yet, the sufficient condition is often determined by pricing and how customers are willing to pay for the technology (Chesbrough and Rosenbloom, 2002). As a consequence, much research on Business Models has focused on innovation and technology management (Rajala et al., 2012; Zott et al., 2011), and software-specific frameworks for Business Models have emerged (Popp, 2011; Rajala et al., 2003; Rajala et al., 2004; Stahl, 2004). This paper attempts to illustrate Business Model change in the software industry.

**Design:** Drawing on Rajala et al. (2003), this case study explores the (1) antecedents and (2) consequences of a Business Model-change in a logistics software company. The company decided to abolish their profitable fee-based licensing for an internet-based version of its core product and to offer it as freeware including unlimited service.

**Findings:** Firstly, we illustrate how external developments in technology and customer demands (pricing), as well as the desire for a sustainable Business Model, have led to this drastic change. Secondly, we initially find that much of the company's new Business Model is congruent with the company-focused framework of Rajala et al. (2003) [product strategy; distribution model, services and implementation; revenue logic].

**Value:** The existing frameworks for Business Models in the software industry cannot fully explain the disruptive change in the Business Model. Therefore, we suggest extending the framework by the element of 'innovation'.

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Keywords: Business Model change; software; innovation; freeware; logistics; lock-in.

<sup>1</sup>: Aarhus University, School of Business and Social Sciences, Department of Economics and Business, Fuglesangsallé 4, 8210 Aarhus V

\*: Corresponding author

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## Introduction

During the last two decades, Business Models have attracted considerable attention both from research and practice. A major focus has been on innovation and technology management (Chesbrough and Rosenbloom, 2002; Rajala et al., 2012; Zott et al., 2011). Rajala et al. (2003) emphasize that most research in the software industry has focused on product development, financing, and product life cycles or the industry as a whole or within defined Business Models. Some authors argue that the Business Model of the company should be revisited regularly (Johnson et al., 2008) and that its operative tactics have to be adapted to changing environmental conditions (Casadesus-Masanell and Ricart, 2010; Rajala et al., 2012).

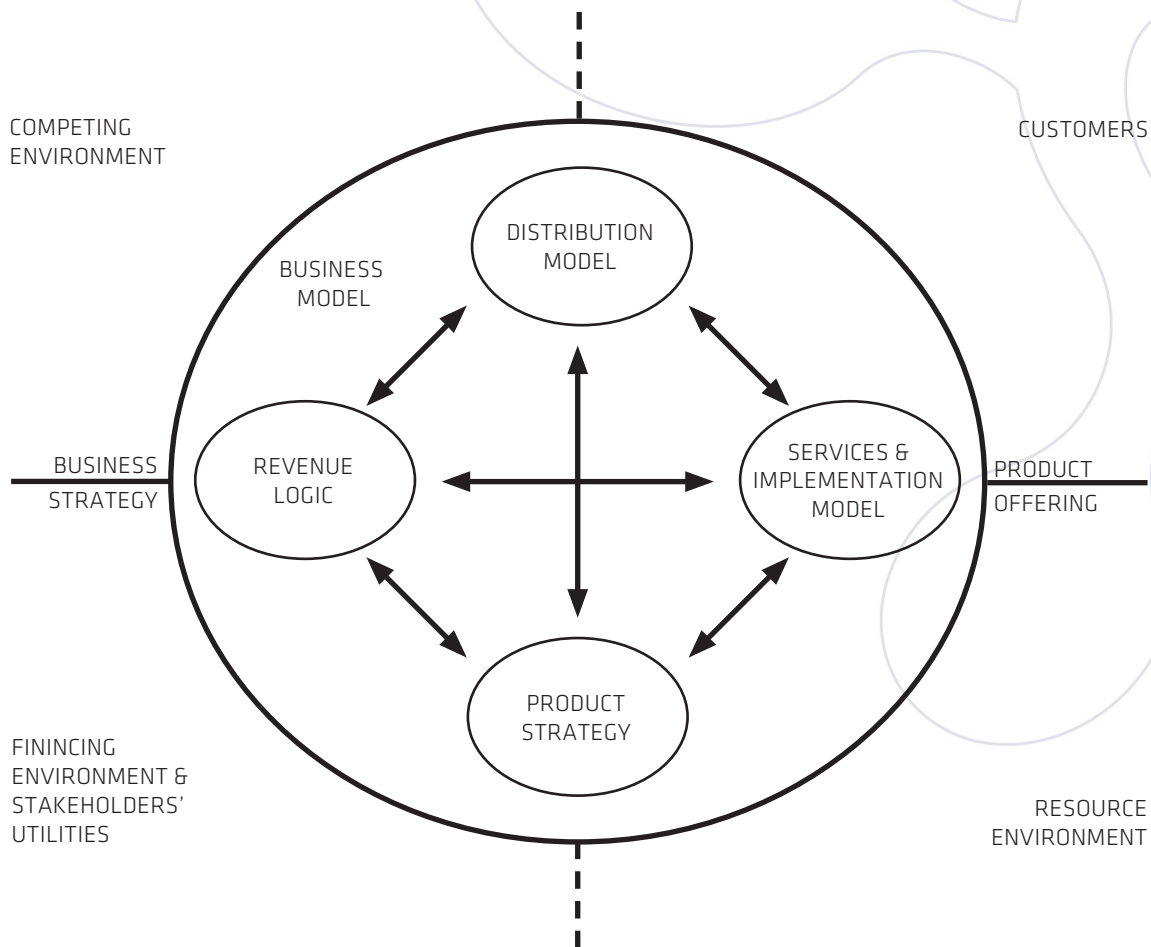
However, the definition of a Business Model in the software industry, as well as its exact pattern of changes are puzzling issues for both practitioners and academics, and there are only few attempts to address this particular topic. Popp (2011) seeks to explain some software companies successes by applying hybrid Business Models where the software company is acting both as an inventor and as an lessor. Rajala et al (2012) study the effects of applying open innovation to the software Business Model. Open innovation is here defined as shared internal and external (customers) innovation. Advancements in technology, changing customer demands or new market entrants are often seen as a necessary condition to trigger the creation of new business models (Business Models) or disruptive change in existing ones. Yet, the sufficient condition is often determined by pricing and customers' willingness to pay for the technology (Chesbrough and Rosenbloom, 2002) which is identified through an increased tendency of freeware strategies (Haruvy and Prasad, 2005; Riehle, 2012). As a consequence, much research on Business Models has focused on innovation and technology management (Zott et al., 2011), and software-specific frameworks for Business Models have emerged (Rajala et al., 2003). Building on this previous evidence (esp. Rajala et al., 2003; Rajala and Westerlund, 2007), the focus of this paper is twofold. First, we attempt to further identify the elements of a Business Model in the software industry. Second, we aim at identifying the antecedents that lead to a Business Model change and

then assess the consequences of this change. We pose the overall research question: *"What are elements of a Business Model in the software industry, and what are the antecedents and consequences of a Business Model change in the software industry?"*

To investigate this question, we conduct a case study at the Danish division of a small Norwegian company (APOLLON) specialized in outbound logistics software. We want to explain how the Business Model of the software company has evolved over APOLLON's life span, what caused the recent changes in the Business Model, and what the consequences and future opportunities are. Drawing on Rajala et al. (2003), this case study explores the (1) antecedents and (2) consequences of a Business Model-change in a logistics software company. The company decided to abolish their profitable fee-based licensing for an internet-based version of its core product and to offer it as freeware including unlimited service.

Firstly, we illustrate how external developments in technology and customer demands (pricing), as well as the desire for sustainability of the Business Model, have led to this drastic change. Secondly, we initially find that much of the company's new Business Model is congruent with the company-focused framework of Rajala et al. (2003) [product strategy; distribution model, services and implementation; revenue logic]. Nevertheless, the framework cannot fully explain the disruptive change in the Business Model. Constantly changing market conditions forces software companies to continuously rethink their Business Model. Therefore, we argue in line with Zott et al. (2011) to extend the framework of Rajala et al. (2003) by the element of *'innovation'* (also see the more recent source of Rajala et al., 2012).

The remainder of the paper is structured as follows: section 2 depicts the theoretical background of Business Models in the software industry. Section 3 explains the advantages and limitations of our chosen methodology, i.e., a case study. Section 4 presents our findings. We critically assess the case in section 5, and also emphasize our contributions and avenues for future research.

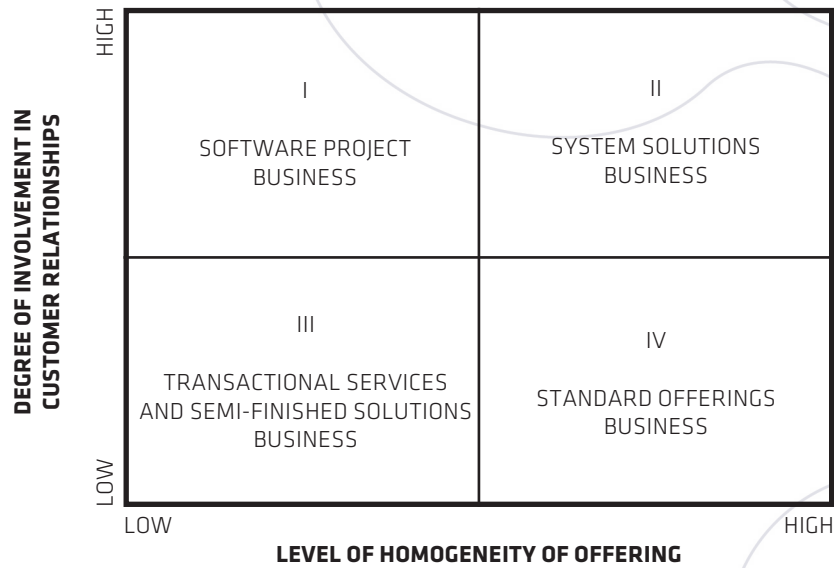


**Figure 1: Elements of a Business Model (Rajala et al., 2003)**

## Business Models in the software industry

The literature offers a wide range of definitions for a Business Model (e.g., Chesbrough and Rosenbloom, 2002; Magretta, 2002; Osterwalder and Pigneur, 2005). Zott et al. (2011) structure this literature on Business Models since the first appearance of the concept in the 1990s. They find that three fields of research have emerged, which are (1) innovation in Business Models, (2) strategic aspects and performance management, and (3) e-business including information technology. As a finding across all three fields, they summarize that Business Models are individually tailored to companies and the environment in which they operate. Despite the

importance of Business Models in connection with information technology, conceptualizations of Business Models in the software industry are so far non-existing. A notable exception are Rajala et al. (2003) who build theory from five case studies they conducted in the software industry (Glaser and Strauss, 1967; Strauss and Corbin, 1990). Based on their empirical findings, they suggest that a Business Model in the software industry comprises the interdependent elements of a product strategy; a revenue logic; a distribution model; and a service and implementation model. Competitors, resources, shareholders and customers are seen as direct stakeholders, who—however—operate outside the company's business model. We will apply this framework to APOLLON, see Figure 1 for details.



**Figure 2** Classification of different types of business models in the software industry (Rajala and Westerlund, 2007; Rajala et al., 2004)

Rajala and Westerlund (2007) suggest that these four elements of a Business Models can be combined differently and thereby select a space along the two continua of *Degree of involvement of customer relationships* and the *level of the homogeneity of the offering*. The resulting four high/low combinations indicate four feasible Business Models in the software industry. These include *Software project businesses* (Type I) with high level of product customization and close client-company relationships; *System solutions businesses* (Type II) with high level of customer involvement combined with a highly standardized product; *Transactional services and semi-finished solutions* (Type III), which normally serve as a platform for a bigger value creation framework to a small number of clients and typically as a part of a network; and last, *Standard offerings* (Type IV), with low involvement in a customer relationships and economies of scale due to homogeneity. We will classify APOLLON in this framework and depict the four Business Models in Figure 2.

## Methodology

### Research Method

We opted to conduct an explanatory case study in a single company, which allows us to understand the

phenomenon of Business Models in its real-life context (Burns and Scapens, 2000; Scapens, 1990). It is our goal to understand how exactly the elements of a Business Model work together in the software industry, and to illustrate practices from the field (Ryan et al., 2002). Thereby, we are open for interpretations that would lead us to adjust or further contribute to the theories that explain the phenomena under investigation (Arb- nor and Bjerke, 2008; Lukka and Modell, 2010).

### Data collection

We draw on three sources of data to illustrate our case: interviews, observations and archival data. Our first and primary sources are two interviews with carefully selected key informants. The first interview was conducted with the CEO of APOLLON's Danish division. We selected him for his thorough understanding of the international software market, his long experience, and his holistic overview of all operations in the company. Additionally, we conducted a phone interview with a sales representative in order to gain a better understanding of the direct interactions with customers (Ryan et al., 2002). By selecting key informants from different hierarchies within the company, we also follow the call of Morgeson et al. (2010) for more multi-level case study research that provides a deeper understanding of the researched

phenomena. Interviews included mostly open-ended questions, and were semi-structured where we asked elaborating questions when appropriate. Interviews were originally conducted in Danish and lasted approximately one hour each. They were tape-recorded, transcribed and analyzed for patterns. Quotes in the text are our own translations into English (Bouchard, 1976; Brislin et al., 1973; Oppenheim, 1992). We did not predetermine the number of interviews but stopped when we felt saturated (Flick, 2002; Glaser and Strauss, 1967). Our first hint toward saturation was that the key informants started to only reinforce what we had found out through external analysis of the company beforehand. Second, we did not notice any contradicting evidence during our observations, which lent validity to the data. Third, we carefully selected the most knowledgeable key informants in the company such as the CEO; it is highly unlikely that there are other informants that would be more knowledgeable on a topic like APOLLON's Business Model.

Second, we use observations as a source of data that were gathered during our visits at the company site. These data sources include our general impressions of the research site; participation in diverse meetings; interaction of employees; the times that employees needed to perform tasks; the location and conditions of the building; work space arrangements and furnishing of offices; observations on the technology products of the company and the presentation on products given by APOLLON's managers. This data is very fuzzy, and we analyzed them by identifying patterns through discussions in our research group (Yin, 2009).

Third, we collected archival data on the company to corroborate our interviews and observations. We did this by asking APOLLON's management for documentation, and we also searched what was publicly available on the internet. These archival sources include internal documents, brochures, bulletins, annual report, reviews, presentation materials, and APOLLON's website. Again, we analyzed the data through pattern matching in group discussions (Yin, 2009). They support our understanding of APOLLON's specific situation.

## Limitations

This study has limitations that need to be considered. As this is a single company case study, it might not

be generalizable beyond the specific parameters of its context, such as its industry, the company size, or the competitive situation in which this Business Model has emerged. Moreover, we only investigated the Danish division of APOLLON. Though the research and development department is situated in Romania, the small size of the company and the fluent and transversal communication existing across the national departments enables us to identify and discuss the company's product development processes which are essential for the Business Model understanding. Last, this study mainly focuses on the Business Model. Future studies could focus more on the external, competitive environment.

Despite the limitations, we aim for sufficient validity and reliability (Ryan et al., 2002): We ensure construct validity by using established frameworks and definitions on Business Models to reason for our results. Internal validity is increased by corroborating diverse sources of data. As to external validity, we already alerted that this study has an explanatory, illustrative character and ask for careful consideration when generalizing our conclusion. Last, we consider reliability by depicting our research protocol.

## Findings

The software company APOLLON<sup>1</sup> was founded in Norway in 1997 and expanded with national divisions to Denmark (2002), Sweden (2008) and Finland (2011). National divisions are in charge of selling, marketing and supporting APOLLON's main product, DISPATCH. DISPATCH tracks consignments. We will elaborate on the products in section 4.1. The Danish division employs 20 people. The programming department, where a majority of the coding and product development is done, is located in Romania and has 23 employees.

APOLLON operates in a niche market for outbound-logistics software. It has approximately 8,000 customers of which 1,600 are located in Denmark. APOLLON has only small and insignificant competitors in Denmark that have about 100 customers' altogether. Yet, APOLLON estimates that it just has 15% of the total possible market. Supposedly, there are still about 9,000 Danish

<sup>1</sup> We changed the name of the company and its products to offer more anonymity.



companies who could switch from their in-house software solution to the DISPATCH product family.

## Product strategy

The Product Strategy of APOLLON revolves around a product family, of which DISPATCH is the core. DISPATCH helps companies to manage their outbound logistics. All other products are built on it or are complementary. We also describe the recent changes to the product strategy. *DISPATCH* targets large company as customers who run an ERP-system, where DISPATCH gets invisibly integrated. The software accesses the widely different IT-systems of the customer's carriers. It is pre-programmed to automatically comply with the varying demands of known carriers, such as their complex printing formats. Thereby, DISPATCH decreases human errors, lowers the risk of delays and saves time by automatic compliance, avoidance of entering data twice, and one integrated ERP-system. As a recent change, APOLLON added the 'DISPATCH Portal' feature, which enables senders and receivers to track the consignment via an online portal. Another recently added feature is DISPATCH FileDrop. FileDrop enables customers to 'drag and drop' files created by the ERP-system and to use them DISPATCH. This is the simplest solution as no integration with the ERP-system is necessary.

APOLLON has recently introduced several new products: The recently added products '*DISPATCH ONLINE*', '*DISPATCH MOBILE*', and '*DISPATCH ScanApp*' focus on a different customer group. ONLINE has the exact same features as the parallel existing product DISPATCH, the only difference being that it runs fully online. Thereby, it targets a new customer base that does not have an ERP-system, especially small, newly started companies, often web-shops.

MOBILE has also been recently added to the product group. It targets the completely new customer segments that lack the financial strength to afford their own system: small carriers, i.e., the companies that APOLLON's current customers work with to ship their own products. By establishing business relations with them, APOLLON locks them in and thereby protects its Business Model against potential new entrants. ScanApp is the online version of MOBILE and also targets small carriers. Thereby, APOLLON's product strategy is

gradually changing from a traditional product approach aiming at a well-established customer segment to a diversified product approach aiming at a different customer segment with new types of products.

## Revenue logic

As APOLLON has currently no competitor in Denmark except for in-house solutions for outbound-logistics software, it has relatively high discretion in pricing. APOLLON's sources of revenues are one-time installations as well as monthly fees from customers using DISPATCH. The cost installation for DISPATCH varies according to the number of days APOLLON employees are at the customer's site, the hourly rate for external consultants, the number of printers, and the sophistication of desired integration (FileDrop, SQL or API). The monthly fee paid for DISPATCH varies with the number of consignments per year. Licenses range from up to 2,000 until 50,000 consignments per year. Each license covers one location and an unlimited number of users, along with unlimited service and support on phone or email.

APOLLON operates profitably and its revenues exceed its costs by far. The costs structure has three main categories: First, there are development costs. A software product is the fact that it requires large investments in the development of software, and low or non-existent marginal cost afterwards (Shapiro and Varian, 1998). Despite the fact that DISPATCH was initially developed by the division in Romania, the Danish division contributed substantially to the developments of ONLINE, PORTAL and ScanApp. A second major cost category is the helpdesk to which all customers have unlimited access to foster high loyalty. The third cost category is the administrative expenses, including office rent, traveling, salaries, marketing material, and PR related expenses.

It is highly noteworthy that—to get access to new customer segment of smaller companies—APOLLON made a radical rupture in its Business Model. Now, it gives away a newer, more modern version (ONLINE) of its highly profitable older core product (DISPATCH) for free. Astonishingly, APOLLON also grants the same, free service and maintenance to all of these non-paying customers. This try-before-you-buy has been a fundamentally new paradigm for APOLLON. The decision to create this online version of the product was

associated with the decision to target new customer segments, i.e. to cover small and medium size companies in addition to large businesses they used to have as clients. Among others, the differences between the two solutions are the lack integration into customers' ERP system and easy access to the system via the internet. Moreover, online version does not require manpower to install the system and train the staff. As for the try-before-you-buy option, it was not offered for the APOLLON users, and it is not available to everyone, but rather to small newly established businesses, who might become their potential clients. This is a major difference to similar Business Models like Gillette, where the product (razor) is free but customers are charged for the maintenance (blades) (Johnson et al., 2008; Zott and Amit, 2010). However, by offering the product and service for free for smaller companies, APOLLON thereby create sustainable value for these companies, as said by the CEO:

*"The idea is to capture the small customers who are just starting their businesses. They don't have any capital, so we have a Business Model that can assist in that particular situation."*

ONLINE is already popular in Norway, and the Danish market is expected to pick up. From the limited data available, it seems as if approximately 90% of ONLINE-customers default within one year. While the marginal cost of the product is irrelevant, APOLLON never recovers the incurred costs of service and maintenance. APOLLON tries to retain the remaining 10% of surviving customers. As they grow, APOLLON charges them as soon as they reach a certain number of consignments. APOLLON anticipates that customers—who felt well-treated in the past by having access to all features for free as well as unlimited service—will stick to APOLLON's products later. The network effect as well as switching costs would suggest this opportunity. Having introduced new products to new customer segments, APOLLON has switched its marketing strategy from concentrated to diversification integrated new products in new markets (Ansoff, 1958). This exact phenomenon is closely linked to that of innovation (Ansoff, 1968). Accessing a new market (i.e. the small companies) through a new channel (the internet) using a different strategy (freeware) is increasingly common among software suppliers (Riehle, 2012) and can

be categorized as a commercial open source Business Model with the aim of gaining revenue at a later point in time when the free open source does no longer provide the full utility (Riehle, 2012). This type of Business model is often seen within the software industry and examples are Linux, MySQL, Apache and Eclipse (Ebert, 2007). Another example is Skype who offers free calls online, but have a variety of additional features that cost a little such as phone calls to land lines and business group video calls (Skype, 2013).

## **Distribution model (marketing and sales)**

The marketing of APOLLON has changed from traditional advertising to a network-based ambassadorship. In the sales division, APOLLON has switched from informal customer contacts to a more formalized CRM-system. We describe the changes in the following.

As to previous marketing practices, APOLLON has relied heavily on traditional advertising to market its products during its first years in Denmark, such as newspaper advertisement. Besides the high costs incurred, APOLLON did not see the return-on-marketing for these initiatives. Advertisements did not target the right customers in the appropriate way. Most of the successful sales were either made to customers who APOLLON identified and contacted directly (push strategy). Another marketing initiative that APOLLON still pursues is the use of an external PR consultant who tries to get APOLLON into the media with topics that are not necessarily related to its products, e.g., as an innovative employer in the Danish market.

Marketing practices have changed over the last three years. As APOLLON established itself more in the Danish market, customers independently contacted APOLLON as they were referred to the DISPATCH product by their carriers. This led APOLLON to stop advertising and to switch to a pull-strategy that involves 'ambassadors'. APOLLON defines an ambassador as someone that can credibly recommend the DISPATCH product family to a company, such as carriers, sellers of ERP-software, and logistics experts who switch jobs. By using ambassadors, APOLLON also hopes to get access to SMEs. However, we did not identify initiatives that allowed APOLLON to actively steer this ambassadorial process.

Concerning sales, APOLLON employees a sales force of four people (out of 20). In the beginning, the sales pitches were informal and relied strongly on the characteristics of the sales person. As it grew to 20 employees, APOLLON found that sharing knowledge about product features became increasingly difficult. This led to a formalized customer relationship management (CRM). For instance, it comprises the mode of contact, information packages for the customer, sales demonstration, technical requirements, and documentation of the customer relationship.

Introducing the new online and mobile products aiming at the small entrepreneurial customers, the marketing and sales can be linked to the revenue logic; by giving the new products away for free is in fact a specific marketing and sales technique which is also highlighted by the CEO

*“The idea of focusing on the small startups is to capture them later in their development. It is marketing, a way of capturing customers”.*

It is an investment in potential customers just like traditional marketing costs, and this is exactly how APOLLON sees it.

## **Services and implementation model**

Service and CRM are essential parts of APOLLON's Business Model because APOLLON generates most of its revenues from existing customers. The number of customers has not grown substantially over the last 3 years, but APOLLON has successfully managed to increase revenues from the existing customers. The stalled growth, however, is a problem for the sustainability of the Business Model, given that competitors might be interested in entering the market, and only 15% of the whole market potential is yet accessed. As described, APOLLON attempts to gain a larger market share during the next years with its new products. Customers have unlimited access to service and maintenance free of charge, as the CEO implies:

*“Of course we create profit from our software, but ultimately we create a good profit because we provide good customer service.”*

The employees in the service department are evaluated based on a “customers served ratio”, which encourages the quick resolution of problems and shortens waiting time for the customers in line. While new customers naturally require service more often, there is no sign that companies make excessive use of the service. On average, APOLLON provides service to a customer four times a year, where the service load is highest after the regular updates of the software. To underscore the importance of service, we observed that the number of employees in the service department (8)—a cost center—is twice as high as the revenue-generating sales department (4). Also, the service department occupies the most prominent and central office space at APOLLON. However, this may very well be linked to both product and marketing strategy. The service provided is part of the knowledge based product. Likewise, the service provided is a further sustainable marketing approach used to keep the customers.

## **Innovation**

So far, we have documented how the Business Model of APOLLON has evolved over the past 10 years. Specifically, we have emphasized substantial changes in the product strategy, the revenue logic, and the distribution model. Nevertheless, our chosen framework from Rajala et al. (2003) cannot explain why these changes happened. We therefore suggest expanding this framework by the element of ‘innovation’ as suggested by Zott et al. (2011), because innovation happens due to external and internal impulses (also see the more recent work of Rajala et al., 2012).

### **External impulses: Customer focus**

Innovation in the product strategy received impulses from the sales force. They described the customer needs and thereby provided the basis for new products like PORTAL or MOBILE. They were supported by the service department, whose employees could contribute experiences with problems that customers frequently encountered. This way, APOLLON could not only satisfy current needs of customers but also anticipate their current necessities. This phenomena can be referred to what Zott (2011) describes as a commercialization of innovative ideas and technologies where free products becomes part of the innovation process and commercialization.



The revenue logic is further connected to this type of innovation, and the case study shows a changing revenue model due to external impulses. Sales representatives and top management suggested that also carriers could be targeted as customers. Another change was that the previously profitably sold product DISPATCH was released in a more modern and better version (ONLINE) but then given away for free, including all necessary service and maintenance. This—at first sight—counterintuitive move will grant APOLLON a stronger position in the market, more market share, more locked-in customers, and higher customer loyalty. The idea also signals that in order to access SMEs, APOLLON has to adjust to the initially weak cash flows of these SMEs and postpone generating revenue to a later stage.

Innovations in distribution were moreover triggered by external impulses. APOLLON closely observed how DISPATCH spread in the market, how new customers heard about it, and how the decisions to buy were made. This led to the abandonment of advertisement (push marketing) and the introduction of ambassadors (pull marketing).

### **Internal impulses: Knowledge sharing**

The external impulses for innovation had to be processed by APOLLON through internal knowledge sharing or *open innovation* (Rajala et al., 2012). Knowledge sharing occurs informally, e.g. through the culture of openness, egalitarianism and communication that APOLLON's top management promotes.

Formalized processes include the monthly “*Second Friday Meeting*” that takes an efficient 90 minutes only. The intention of the meeting is that employees understand what is going on in the company, and to encourage debates and dialogues beyond the meeting. Typical topics include the explanation of financial and non-financial key performance indicators by CEO and CFO, state of affairs with new or large customers, practical problems of everyday work, and product-related improvements. Also, APOLLON has joined this electronic platform ‘Yammer’ to facilitate knowledge exchange within and across all divisions in Scandinavia and Romania, and the headquarters in Norway. The high degree of innovation processes in APOLLON is further sustained by both the CEO and his assistant:

*“[...] I would definitely highlight that we test A LOT of different things. And there are many things which do not succeed of course, but then there are other things where we prove ourselves and we can see that we are really good. We are quick in capturing new ideas, but also quick in testing them.”*

Exactly these elements highlight a sustainable and integrated degree of innovation in the organizational culture.

## **Discussion**

This study addresses *elements of a Business Model as well as the antecedents and consequences of a Business Model change in the software industry*. Following the framework of Rajala et al. (2003), we demonstrate how changes in technology, shifting customer demands as well as the possibility of new market entrants change the Business Model of a software company, specifically its product strategy, its revenue model towards turning profitable core products into freeware, as well as its distribution model. In the following, we will discuss if APOLLON has successfully managed to switch from its previous Business Model to a new one (Rajala and Westerlund, 2007), and what its future opportunities and challenges are.

### **The current and future challenges for APOLLON**

Relating to Rajala and Westerlund's (2007) four suggested Business Models in the software industry, our analysis suggests that APOLLON has moved from a type IV Business Model (standard offerings business) to a type II Business Model (system solution business). The latter implies offering of uniform core solution (DISPATCH) that can be modified for customers through modular components. But APOLLON still has some characteristics of its previous Business Model. According to Popp (2011), multiple Business Model characteristics—defined as a hybrid Business Model—are often necessary within the software industry. However, this type of hybrid Business Model refers to the dual value creation of software companies' product strategy: the

software as a product and the software as a service. In this respect, APOLLON has a well-defined hybrid Business Model with a high level of service and expertise offered to the customers, along with sustainable software products. Regarding the revenue logic and customer segmentation, we suggest that APOLLON should focus on a type II Business Model by improving its capabilities on the two decisive factors of Business Model choice in the software industry: the level of homogeneity of offering and the degree of involvement in customer relationships (Rajala and Westerlund, 2007):

To begin with, APOLLON achieved higher profitability with their new Business Model. The increase in costs for additional sales staff had been more than recovered in the following year by substantially increased sales.

As to homogeneity, APOLLON has diversified its product strategy by responding to the new internet-based and portable-device-related demands of customers. The change is not so fundamental that it could become a type I or III Business Model, but sufficient to give customers a reason to intensify their relationships. Rajala and Westerlund (2007) emphasize that more heterogeneous offerings are an appropriate solution for companies with a smaller number of customers such as APOLLON, whose Danish market is estimated at not more than 10,600 customers. Besides the different products that APOLLON currently possess, there are more levers of heterogeneity, such as the different possible integrations into ERP using SQL, API and File-Drop. This higher degree of customization creates entry barriers for the competition from Sweden by increasing the switching costs of the customers.

As to customer relationships, APOLLON should use the higher degree of customization to deepen relationships. At the moment, APOLLON has contact with each customer on average every three months. First, CRM is a feasible way of increasing the frequency of these contacts and to secure APOLLON a more sustainable type II Business Model. Second, APOLLON could improve its new marketing strategy of ambassadors. While we agree that it seems as a clear improvement over the previous advertising strategy, APOLLON could employ more pro-active strategies to steer the development of its word-of-mouth networks into the right direction. Third, the new revenue model where MOBILE is given

away for free needs to be secured by creating long-term bonds to the relevant SMEs. That way, the likelihood of generating future revenue increases.

The freeware strategic option, according to the APOLLON model increases future revenues, but according to Haruvy and Prasad (2005) two additional factors play an increasing role in freeware solutions; it is a beneficial strategy in order to deter a rival from entering the market and it contributes to rapid access and growth within a particular market. These factors are naturally interrelated with the long-term bond established to relevant SMEs. However, according to Riehle (2012) caution in this Business Model should be taken in this approach for product managers to carefully plan the interface of the free open access customers and the paying customers in order to avoid customer dissatisfaction. The costing structure is relevant in these considerations since it naturally establishes the maneuverable possibilities for APOLLON.

An additional challenge for APOLLON is to consider the type of innovation implied in their Business Model. The current Business Model has several closed innovation attributes. This means that the research and development is internal and not open towards external stakeholders (Rajala et al., 2012). The advantage of using a closed innovation mode is being the first to the market, securing future revenues. On the contrary, an open innovation mode reveals research and development ideas, but simultaneously innovations emerge from stakeholders needs and APOLLON could thereby create a more sustainable Business Model (Chesbrough, 2003; Chesbrough and Appleyard, 2007; Ebert, 2007; Rajala et al., 2012). Though APOLLON also indicates some open innovation, this could be more prominent, for example by sharing Yammar with the different freight companies or some of the major customers.

Zott (2011) identifies several areas of literature within business model innovation. In particular, open innovation and collaborative entrepreneurship (Miles et al., 2006) are highlighted as emergent strategies within knowledge based companies like APOLLON. Likewise, the open innovation is closely related to possibilities of facing Business Model changes due to an incorporated flexibility in the organizational culture which has been proven essential in sustaining global competitiveness (Calia et al., 2007; Rajala et al., 2012). This type of in-

novation due to increased competition which directly forces organizations to change some of their core business model is similar to evolutionary change where survival in a competitive environment forces organizations to adapt their business concepts accordingly (Ven and Poole, 1995). Though at this point, APOLLON appears to purposely adopt the freeware approach, the innovative approach to other markets with diversified products is not necessarily similar to other evolutionary companies like SAP who became a market leader through cooperation with IBM (Leimbach, 2008). Similarities, however, can be found in the adaptability of capture opportunities at the right moments which exactly represent the dynamic transformational strategy approach found in evolutionary business models (Demil and Lecocq, 2010).

## Contributions

More specifically, our study has several implications for Business Models in the software industry. First, we demonstrate that the framework of Rajala et al. (2003) can reasonably well describe a Business Model in the software industry. Our case study suggests that this framework should be extended by the element of *Innovation* to be better able to explain where innovation comes from and why Business Models change. This can successfully be combined with elements from the Business Model change literature which through, for example, evolution capture some of the emergent strategies in software companies. Most notably, the case has illustrated that the product change was induced by new technological possibilities and client needs, rather than by the general desire to be innovative in the field. This is because APOLLON does not face fierce competition, which does not require them to be highly innovative. We did not find any indication that APOLLON considered competitive forces or other companies' experiences. The innovation was mainly driven by technology and clients.

Second, we use the four Business Model types suggested by Rajala and Westerlund (2007) to categorize the Business Model of APOLLON. Our case study illustrates that the switch from one Business Model to the other such as APOLLON did not require a rearrangement of the elements of the Business Model, such as different products, revenue models or distribution models. We thereby contribute that the focus on the practical

implementation of Business Models deserves the attention of future research. Additionally, this witnesses a neglected importance of flexibility and adaptation in the organizations Business Model where the Business Model frequently is identified as a static description of how the organization create value for consumers which partly supports the findings of Johnson, Christensen and Kagermann (2008), Casadesus-Masanell and Ricart (2010), and Rajala, Westerlund and Møller (2012). This particular case has demonstrated how increased organizational complexity, rapid growth in software industry and lack of entry barriers to the software market supports a growing need for emergent strategy tools which should be incorporated in the Business Model design in order to capture a holistic approach and management control system for the organizations.

## Future research

Innovation was a central driver of change in the case study presented here. We suggest that this element should be added to the framework of Rajala et al. (2003). Yet, there are several other elements that are seen either as external to a Business Model in the software industry, or that not mentioned yet. Future research could investigate such elements, e.g., the role of different employee capabilities, dealing with uncertainty by the top management, or mechanisms by which the networks of sales representatives function.

## Conclusion

This study contributes by illustrating a Business Model in the software industry, as well as the antecedents and consequences of Business Model change. Thereby, we challenge existing theory in this field and suggest that innovation has not been sufficiently addressed when explaining Business Model change in the software industry. Our case study gives an example how Business Model change can be better understood if both the origin and the role of innovation are more appreciated.

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## About the authors

**Margit Malmlose** is an Assistant Professor in Management Accounting & Control at Aarhus University. She has previously worked as a Financial Controller for CIM gruppen A/S. Her publications include the journal of Critical Perspectives in Accounting. Her research interests include Business Models and management accounting in the health care sector.



**Rainer Lueg** is Associate Professor for Management Accounting & Control at Aarhus University. Previously, he worked as a consultant with McKinsey & Company. He has published in a number of journals, including Academy of Management Learning & Education, Management Accounting Research and Business Strategy and the Environment. His research interests include business models and strategic performance measurement systems.



**Sevar Khusainova** holds degrees in Law, Economics and International Management. She has worked for a number of international organizations. She is an experienced trainer and facilitator. Her professional and academic interests lie within the domain of strategic business development and corporate legal strategy.

