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A Case Study of SAP

Antero, Michelle C.; Hedman, Jonas; Henningsson, Stefan

Document Version
Final published version

Published in:
ECIS 2013 Proceedings

Publication date:
2013

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Citation for published version (APA):
Antero, M. C., Hedman, J., & Henningsson, S. (2013). Evolution of Business Models: A Case Study of SAP. In *ECIS 2013 Proceedings* Article Paper 204 Association for Information Systems. AIS Electronic Library (AISeL).

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EVOLUTION OF BUSINESS MODELS: A CASE STUDY OF SAP

Antero, Michelle C., Copenhagen Business School, Howitzvej 60, 2000, Frederiksberg, Denmark, ma.itm@cbs.dk

Hedman, Jonas, Copenhagen Business School, Howitzvej 60, 2000, Frederiksberg, Denmark, jh.itm@cbs.dk

Henningsson, Stefan, Copenhagen Business School, Howitzvej 60, 2000, Frederiksberg, Denmark, sh.itm@cbs.dk

Abstract

The ERP industry has undergone dramatic changes over the past decades due to changing market demands, thereby creating new challenges and opportunities, which have to be managed by ERP vendors. This paper inquires into the necessary evolution of business models in a technology-intensive industry (e.g., develop new offerings, engage in partnerships, and the utilize new sales channels). This paper draws from strategy process perspective to develop an evolutionary business model (EBM) framework that explains the components and processes involved. The framework is then applied to a longitudinal case study of SAP to explain how its success in a technology-intensive industry hinges on its ability to reconfigure its business model. The paper contributes to the extant literature on business models in two ways: first, by identifying and explaining the need for an evolutionary perspective; and second, by adopting different value configurations to reflect the convergence of customers, suppliers and vendors.

Keywords: Business Models, ERP, SAP

1 Introduction

In technology-intensive industries, firms have to create opportunities or respond to threats or defend market positions using various technological innovations, such as client/server, Internet, relational databases, and object orientated technologies. On one hand, firms that have the ability to adapt to technological innovations are able to explore new business opportunities and create new business models. For instance, over its 102-year history, IBM started out as a manufacturer of weighing scales, automatic meat slicers and punch card equipment. It gradually moved into IT infrastructure, hosting and consulting services. On the other hand, firms unable to change its business model fail to survive. For instance, Eastmann Kodak Co., a legend in the field of photography, although a pioneer in outsourcing its IT infrastructure (Applegate and Montealegre, 1991), was unable to survive the digitalization of its industry and filed bankruptcy in 2012.

This paper inquires into the general question of how firms manage and respond to changes in the market. Partial answers can be found in strategic literature and organizational literature (Burgelman, 1991; Daneels, 2010; Rosenbloom, 2000; Tripsas and Gavetti, 2000). However, a firm's ability to manage changes cannot entirely be explained by one theory. Zott and Amit (2007) proposed the use of business model as an appropriate framework to analyze change, for instance IT as an enabler of boundary-spanning organizational design. One key advantage of using the business model is that it bridges external forces with the internal properties of firms into a product or service offering (Hedman and Kalling, 2003). Thus, by drawing on the business model concept this paper answers the following research question: *How do business models evolve over time?*

Business model research has extensively explored components, definitions, archetypes, value creation in e-businesses, firm performance, and innovation and technology management (Hedman and Kalling, 2003; Shafer et al. 2005; Zott et al., 2011). However, much less is known about the evolutionary aspects of business models (Petrovic et al., 2001; Zott et al., 2011). Thus, this paper aims to make two principal contributions to the extant business model literature: first, develop and illustrate an evolutionary business model framework (EBM); second, incorporate various value configurations to show the convergence of customers, suppliers and vendors.

The paper will be structured as follows. It begins with a description and discussion of the EBM framework, and followed by the research methodology. Subsequently, the EBM framework is applied to a retrospective case study of how the world-leading enterprise resource planning (ERP) system provider, SAP AG, managed its business model to compete in the ERP industry. We summarize the findings through a discussion of the EBM framework in relation to theoretical and practical implications. Finally, we conclude and present future research directions.

2 A Framework for Evolution of Business Models

In the past decade, the term “business model” generated attention from both academics and practitioners regarding its theoretical and practical relevance. Business models are fundamental to describe the ways that business interacts with and relates to its customers, competitors, and suppliers in its value network (Magretta, 2002). Business models capture value creation (Amit and Zott, 2001), primary and secondary activities (Osterwalder et al., 2005), cost and value (Stabell and Fjeldstad, 1998), and the role of management (Hedman and Kalling, 2003). Additionally, the concept of business model has been treated as a set of different types, rather than integrated into a generic concept that captures a wide range of real-world scenarios. The use of the “business model” concept have evolved (Osterwalder et al., 2005) from early attempts to define and classify business models for electronic markets (Dubosson-Torbay et al., 2002; Rappa, 2004); make policy evaluation (Poel et al., 2007); analyze firm performance (Malone et al., 2006); and understand business model economics (Brousseau and Penard, 2007).

The review of business model components is the foundation for developing the EBM framework. The bulk of business model research focused on components, conceptual models, design methods and tools, taxonomies, methodologies (Petrovic et al., 2001), evaluation models, and adoption factors (Pateli and Giaglis, 2004). Most of the reviewed articles focused on a limited number of aspects, such as revenue model (Van Bossuyt and Van Hove, 2007), customers and competitors, and value proposition (Bouwman et al., 2007). Shafer et al. (2005) identified 42 business model components that are synthesized into four categories: strategic choice, value network, value creation, and value capture. Pateli and Giaglis (2004) found similar components wherein they identified seven recurring components: mission, target market, value proposition, resources, key activities, cost and revenue model, and partner network. They summarized their research as “...*extensive research conducted towards identifying and analyzing key components...limited research...towards identifying the logic flow...between components*” (p. 308).

The conceptualizations of the business model vary some focus on a limited scope (e.g., mainly based on e-business), while others capture a larger set of possibilities. Thus, the concept have been criticized for being unclear and superficial and lacks an underlying scientific method (Hedman and Kalling, 2003). Moreover, a recent review of Zott, et. al., (2011) continue to highlight the disagreement on what business model is and state that the current research has developed in isolated scientific silos, hence providing the motive to strive for clarity in business model research. However, they found some common themes emerge such as the potential of using the business model as an analytical framework which provides a holistic view of the firm; and emphasis on business activities to explain value creation.

Causality between components is usually discussed in terms of the revenue models or customers and competitors (Methlie and Pedersen, 2007). Hedman and Kalling (2003) proposed an alternative model to which included a longitudinal component, which is interrelated with five other causal components: customer market, offering, activities and organization, resources, and factor market. The causality chain between the components is derived from Porter’s (1991) dynamic strategy theory, while the longitudinal component is grounded in the work of Mintzberg (1998). However, both these papers fail to consider the convergence of the customers, suppliers and vendors in creating processes that support the production of a key offering which is primarily based on industrial organization (I/O) logic.

Hedman and Kalling (2003) also attempted to address the evolution of a business model and how it should be managed through a case study. However, because the production of a key offering is no longer linear, it is necessary to come up with meta-level business model concept that is generic enough to encapsulate both traditional and new business processes. Drawing on ideas from the strategy process perspective (Barnett, 2008; Daneels, 2010; Mintzberg et al., 1998; Porter, 1991), which suggest that business components are causally interrelated and firms co-evolve with its competitors over time, we propose a generic EBM framework. It is based on Hedman and Kalling (2003) and extended to include value configuration analysis (Stabell and Fjeldstad, 1998). A firm’s ability to evolve is dependent on the ability to identify various value configurations and incorporate business processes. The initial EBM framework includes four generic components: (1) market, (2) resources, (3) *business processes and value structure*, and (4) *offering*.

The *Market*-component captures the competitive space (customers, competitors, and substitutes) where technological innovations occur. It is based on Porter’s (1980) ideas of threat of substitute products or services; established competitors; new entrants; the bargaining power of the customers; and suppliers. It is critical to define and understand the potential and bargaining power and influence of various entities to set and control the rules of the game.

The *Resource*-component addresses vital resources of the firm including the acquisition of its inputs such as physical, labor, knowledge, and financial capital. It draws upon the resource base view of the firm (Barney, 1991). In the ERP industry, there are few physical resources (such as computers, server halls, and sales offices locations). Financial assets, such as money, stocks and bonds, are essential to the survival of the firm. Labor refers to people, their skills and competences and various sourcing

arrangements can be utilized to get the right people capable of doing the job. Intangible assets are brands, patents, and partners. Partners are essential particularly in the design, production, and distribution of offerings.

The *Business Processes and Value Structure*-component refer to the activities performed to acquire and transform resources into offerings and deliver it to the customer market. It is based on Porter's (1985) value chain analysis which refers to primary and secondary activities. However, since the value chain is not applicable to all businesses, we draw upon Stabell and Fjeldstad's (1998) ideas of value chain, value shop and value network. This value configuration analysis is based on Thompson's (1967) typology of long-linked, intensive, and mediating technologies. Long-linked technologies apply to firms that transform inputs to output and are labeled value chains. Intensive technologies apply to firms that solve customer problems and are called the value shop. The last type is the value network based on mediating technologies.

The *Offering*-component is often referred to as the value proposition. Value is ultimately determined by how well resources improve the cost or price (or customer-perceived quality) of the offering (Barney, 1997). Based the generic strategies of differentiation and cost leadership, the value proposition is what a company markets to its existing and potential customers. Since customers associate a meaning with an offering, value propositions are not objective. Thus, it is important to identify these perceptions in order to understand the role of the offering.

Figure 1 describes logic behind four generic components that connect together. A firm in a market (1) has to identify its customer segment and develop an offering (2) in order to sell its products and services as it is compared to all available substitutes provided by its competitor. In response to technological and customer requirements resources (4) (labor, physical, intangible, and financial) are acquired from various areas of the market (1). The resources (4) are then “transformed or used” in the *business processes and value structure* (3) either as a value chain, value shop or value network to come up with an offering (2), the final product and/service that is produced.

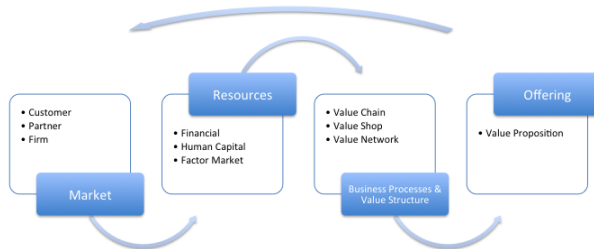


Figure 1. *Generic components of the Evolutionary Business Model (EBM) framework*

3 Research Methodology

Data was gathered from publicly available sources, including textbooks, thesis, news articles, corporate documents and information from websites of SAP as well as its rivals. We began writing SAP's narrative by identifying key events (e.g., announcement of a merger or change in strategy), which was related to business model from multiple sources of data such as corporate documents, websites, and conferences. The narrative tells the story and enables the analysis of events using theory. Subsequently, we performed a qualitative analysis of the data by applying the EBM framework (Miles and Huberman, 1994). To illustrate the causal linkages between various components of EBM framework, we used the framework to analyze the business model of an ERP Vendor in a case study (Eisenhardt, 1989; Yin, 2009).

The case was selected from the market-leader in the ERP industry, SAP AG, who has a long established record of business success in pre-packaged software since the 70s, as it entered a market that was dominated by IBM, and manage to withstand the dynamics of competition in the 90s and

outlast most of its competitors who succumbed to acquisitions in the 2000s. SAP AG is a recognized market leader by industry analysts. Instead of using a multiple-case study comparing different business models, a retrospective case study analysis of the same firm, SAP, allowed us to look at historical events and the corresponding changes to its business model after technological innovations were introduced to show how business models evolved. Prominent exemplars of retrospective case studies include Burgelman’s (1991) study of Intel’s transition from memory chips to microprocessors, Rosenbloom’s (2000) study of how NCR transitioned into an electronics-based office equipment company, and Tripsas and Gavetti’s (2000) study of how Polaroid’s obsolete business model hampered entry into digital photography.

A retrospective case study has both advantages and disadvantages (Ring and Van de Ven, 1992). A retrospective case study lends itself to the creation of a high-level story that outlines major events, transformations, and their outcomes. Some important transformation processes spans over decades, which make them are extremely hard to follow in real time. In particular, it may only be possible to ex-post determine which transformational processes provide new interesting insights to fuel theory building. The retrospective case study is not, however, appropriate to address the micro-level process of *why* decisions were taken and the cognitive processes behind these decisions, as explanations on these detailed leveled frequently becomes ex-post constructions that do not necessarily match how the process played out a few decades earlier. Therefore, we keep our analysis to those factual circumstances that can be documented and recognize the need for future real-time process studies to explain why some organizations manage to make the transitions described in the analysis.

4 Case Study

The story of SAP illustrates a case of how a software firm was able to deflect rival actions that destabilized the current mode of developing software by adopting various business models. At a time when software was developed by consultants, such as IBM, SAP challenged traditional models of developing individual customized solutions for large enterprises. “New innovations by IBM’s rivals had to be exceptionally valuable from a customer’s perspective” (Barnett, 2008, p. 155). SAP was started in 1972 by five former IBM employees with a vision of developing commercially off the shelf (COTS) application for real-time data processing. SAP changed the way software was developed and deployed (Meissner, 2000).

In 1973, all the development was done on externally located mainframe servers. SAP released its first financial accounting module, which would serve as the cornerstone of a modular series that bore the name SAP R/1 (Meissner, 2000; Neumann and Srinivasan, 2009). As shown in Figure 2, SAP’s business model focused on the large enterprises. By developing its COTS offering it changed from the “IBM way” of customized solutions to repeatable pre-packaged solutions using a value structure of value shop. It leveraged two resources: IBM mainframe servers, and its know -how of its customer’s businesses processes thus building mainframe applications that “solve customer problems”.

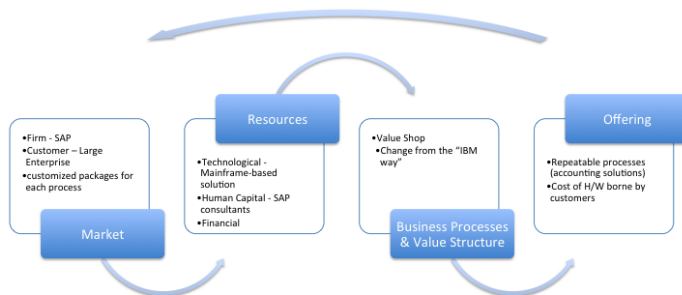


Figure 2. SAP’s EBM in the beginning ‘70s

In 1974, the first technological shift occurred when SAP converted the financial accounting module from the IBM DOS to the IBM OS operating system, a change that enabled multiple applications to

run concurrently. The development process further evolved and a module for asset accounting was developed. One of SAP's customers, John Deere, played a significant role in the internationalization of SAP's product when SAP was requested to develop a multi-lingual version of the SAP's module in 1975 (Neumann & Srinivasan, 2009). Within the next years, modules for purchasing, inventory management, invoice verification, and data integration were released.

It was not until 1979, when SAP began running its own development environment and servers, and its own data center. Later that year, SAP made an in-depth examination of IBM's database and dialog control system, which led to the release of SAP R/2. The following year, a sales and distribution application module was built based on a customer's development specifications (Neumann and Srinivasan, 2009). SAP continued to use joint development with customers to develop and enhance the mainframe-based R/2 system. By 1983, the production planning and control module was released.

In 1984, SAP expanded internationally and its first subsidiary, SAP International AG, was founded in Biel, Switzerland (Meissner, 2000). SAP's own data center grew and hosted four servers with a total of 64MB of main memory used for software development. Its first US headquarters was established the next year. Its subsequent growth in employees, reaching 300, pushed SAP to restructure and create different departments. After 3 years of work, the human resource management module was completed.

As shown in Figure 3, SAP's business model focused on developing its offering (i.e., modular solutions for multiple business processes) for a large enterprise. SAP continued to use a value shop configuration in its operations but the technological change in the operating system enabled SAP to develop other modules. It also leveraged the joint development efforts with the customer to develop new application modules and expand internationally. As SAP's market expanded, it was able to expand its internal resources (e.g., data center, growth of employees) to support the production of its offerings.

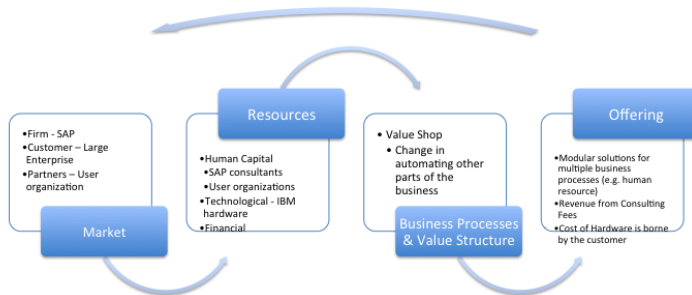


Figure 3. SAP's EBM Maturing in the '80s

Building on SAP's prior activities that leveraged its customers to gain the necessary knowledge to build new applications, it held its first user conference in Karlsruhe, Germany, in 1987. It also aspired to establish a platform that would enable current and potential users to share experiences. Additionally, it established SAP Consulting to support new customers. In 1990, SAP strengthened its financial base by raising DM 85 million in the capital market to further develop SAP R/2 and the new SAP R/3 system. In an effort to increase its target market, SAP acquired 50% of Steeb and 100% of CAS, both software companies focused on medium-size market.

Owing to the development of distributed computing, the possibility to develop new applications using UNIX workstations and personal computing increased in the '80s. Moreover, IBM's new generation of servers (i.e., AS/400) showed the potential for SAP's software to be available to medium-size customers. At that time, SAP's rivals - such as Baan Corporation, developed solutions on UNIX systems - focused on modular solutions for both large- and medium-size enterprises. In 1991, the first modules in the new SAP R/3 system were showcased at CeBIT. With its client-server concept, uniform graphical interface, dedicated use of relational databases, and support for servers from various manufacturers, R/3 was now available to the medium-size market, and to branch offices/subsidiaries of larger corporations.

As shown in Figure 4, the technological change introduced by UNIX and personal computing, and availability of substitute offerings compelled SAP to develop new offerings—i.e., modular solutions for multiple business processes for medium-size enterprise. To make this change, SAP needed to raise the necessary funds to develop the new offering, demonstrate the offering in a road show to verify the demand before scaling up its operations. It also anticipated the need to find additional resources (e.g., IBM AS/400 and labor) to implement its solution, so SAP changed its value structure from value shop to a value chain to allow it to work with partners. Its two-tiered approach enabled it to target specialized industry verticals with its logo partners, develop different product lines on multiple platforms and change its sales and distribution to include implementation partners (Meissner, 2000).

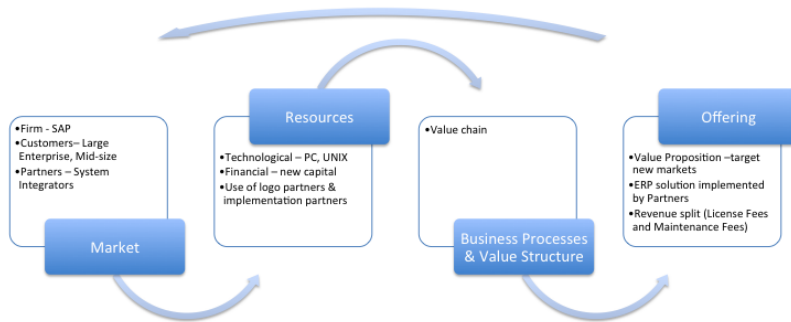


Figure 4. SAP EBM in the '90s

After the launch of R/3 in 1992, SAP changed its partner strategy to include independent consulting firms. In 1993, SAP took on another technological leap when it introduced its joint strategy with Microsoft – i.e., enhance SAP R/3 to operate on Windows NT operating system which was launched in 1996 (SAP, 2010a, 2010b). Together with Microsoft, SAP was able to develop a business applications protocol interface (BAPI), a standard to connect to various applications. Using open interfaces, customers could now connect online applications to their SAP R/3 systems.

SAP improved its technological base and subsequently released a version of SAP R/3, which supported kanji characters, to the Japanese market. R/3 was also compatible to SUN hardware, enabling it to run on all RISC platforms. SAP focused on the retail industry by acquiring a 52% shares in DACOS Software GmbH. By 1995, SAP used system resellers to put emphasis on medium-size companies. Later that year, SAP, developed telecom industry solutions with Deutsche Telekom AG.

SAP also continued to involve customers in its development processes. At one time, it had 4,300 guests at the European SAPPHIRE event in Vienna and over 8,000 attendees flock to the corresponding U.S. event. In 1998, a new interface was launched – EnjoySAP – at SAPPHIRE in Los Angeles. SAP had planned to make its software easier to learn, faster to work with, and simpler to customize to customers' needs. This reorientation combined e-commerce solutions with SAP's existing ERP applications on the basis of cutting-edge Web technology. To support the Internet focus, a German Internet subsidiary e-SAP.de was founded, marking its presence in the Internet age. New applications for market places and portals were developed and SAP outsourced its development efforts to its SAP Portals subsidiary and started a partnership with Commerce One and the acquisition of TopTier. Additionally, a new platform was launched in 2004—i.e., SAP NetWeaver (SAP, 2012). This platform enabled SAP to offer fast, open, and flexible business applications that supported end-to-end business processes based on SAP or other systems.

SAP Labs China marked the 9th opening of a development location outside of Walldorf, Germany. Along with other research centers in India, Japan, Israel, France, Bulgaria, Canada, and the United States, SAP sold its expertise to its customers. The industry subsequently experienced a period of consolidation and witnessed several mergers and acquisitions, including SAP. SAP also put in place a new technological vision when it introduced its plans for enterprise service-oriented architecture (SOA). Shortly after SAP released in 2006 its SOA-enabled ERP, SAP made several acquisitions – e.g., Pilot Software, Yusa, OutlookSoft, Wicom, and MaXware – the following year. In 2008, SAP

also purchased Business Objects, a company specializing in business intelligence applications (SAP, 2012). In 2010, it acquired Sybase, the largest business software and service provider specializing exclusively in information management and mobile data use, in order to strengthen its position in producing solutions for mobile/real-time applications.

As shown in Figure 5, the Internet invoked a technological revolution that required a change to SAP’s business model and develop new offerings—i.e., an Internet based solution for small-, medium- and large – enterprises. The change required the use of various resources from its partners, customers and competitors which changed its a value structure from a value chain to a value network allowing it to have the agility to make multiple combinations of its offering to suit the customer demands.

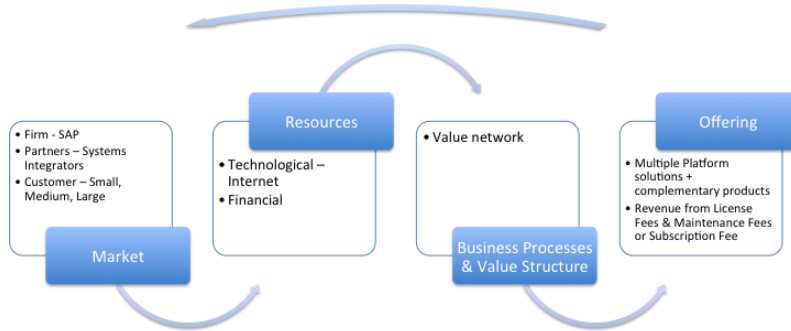


Figure 5. SAP’s EBM in the ‘00s

5 Cross-case analysis of SAP’s business models over time

The SAP case study reveals that changing the underlying business model components increased the viability of SAP and come up with new offerings. Key to making the change is the ability to recognize and incorporate technological innovations in the market, manage resources and create business processes and value structure. Its success can further be attributed to its close relationships with the customers, awareness of market substitutes, ability to raise capital and change its business processes and value structure. Thus, underscoring the importance of having a process perspective in the business model to incorporate the feedback mechanism that links the offering back to the market. In the case of SAP, it adapted various business processes in order to change (summarized in Table 2). In the early 70’s and 80’s SAP followed a business model that is associated to intensive technologies to firms solve customer problems, thus requiring a business process that supports a value shop. In the 90s, the increased demand for SAP’s products necessitated collaborative arrangements with systems integrators. This changed the offering to be a long-linked technology, where SIs transforms SAP’s ERP core package (inputs) to customized solutions (output) by following a process associated to a value chains. In the recent years, SAP began producing a mediating technology (i.e., a combination of the ERP core package plus complementary solutions) thus requiring a value network to coordinate multiple partners, customers, and even competitors to come up with a solutions.

Moreover, the introduction of radical innovations in the ‘90s and the ‘00s, made it possible for SAP to tap new markets which had a corresponding change to its resource allocations, thus requiring new value structures to come up with its new offering. In contrast to the ‘70s and ‘80s where SAP also made a change to its business processes to come up with its initial business model, the absence of a major technological shift did not require a revolutionary change to its business model.

Components	Event period			
	1970s	1980s	1990	2000
Market	SAP as an alternative	SAP offers ERP	SAP offers ERP	SAP produces

	to IBM's customized solution for Large Enterprises	solutions to Large (i.e., Multinational corporations) and Medium-size Enterprises	solutions to Large and Medium-size Enterprises with vertical focus	different products for Multiple target markets (Small- Mid- and Large Enterprises)
Resources	<ul style="list-style-type: none"> • Technological - Mainframe-based solution • Human Capital - SAP consultants • Financial 	<ul style="list-style-type: none"> • Human Capital <ul style="list-style-type: none"> • SAP consultants • Joint development with user organizations • Technological - IBM hardware • Financial 	<ul style="list-style-type: none"> • Technological – PC, UNIX • Financial – new capital • Use of logo partners & implementation partners 	<ul style="list-style-type: none"> • Technological – Internet • Financial
Business Process/Value Structure	Value Shop Use Customer Resources to produce the solution	Value Shop Use Systems Integrators to Implement the Solutions	Value Chain Use Systems Integrators to Implement the Solutions	Value Network Use customer resources (e.g., User Groups to gain ideas), Uses Competitor's (e.g., Microsoft's Windows NT in 1996) complementary products Use Partners (e.g., COIL in Palo Alto)
Offering	Pre packaged software	Modular Pre-packaged Solutions (e.g., Accounting Solutions, Human Resources)	ERP Software on UNIX and PC	ERP plus complementary offerings (e.g., PLM, WFM, SCM, CRM, HRM, Data Analytics, Mobile/Real Time Reporting)

Table 2. SAP's Business Model Evolution

We can glean from SAP's experience that various external conditions triggered a need to change one component of SAP's business model (as summarized in Table 2). In the '80s, SAP brought about a change in its internal business process operations, which resulted to a change was evolutionary. In particular, the technological change in IBM's operating system made the system capable of multitasking, thus giving the possibility to build other modular solutions. In contrast, when a technological change provided the potential to develop a new offering to capture a new market, SAP needed to change the underlying value structure. The changes in the value structure not only provided a means to produce the offering, but it also captured part of the value that was being delivered. The change enabled SAP to tap new markets and increase its financial resources and expand. A similar change was witnessed in the '00s when the value structure permitted SAP to have multiple partnerships that resulted in a myriad of offerings for a wider range of customers.

6 Theoretical and practical implications

The EBM framework is based on the idea of value configurations (Stabell and Fjeldstad, 1998). Since business model research has mainly been explored to understand components of business models, value creation in e-businesses, and firm performance, this paper heeds the call of Zott and Amit (2011) to explore and integrate theories that can explain innovation of business model. It addresses the relationships between the components both causally and longitudinal (Hedman and Kalling, 2003) through the integration of various components from business model literature into an EBM framework, as illustrated in a case study from the ERP sector.

This paper enables a broader and in-depth investigation of business models both from a practical and theoretical perspective. From a practical perspective, the model may be used as an analytical tool for managers to better understand the value creation logic and the interrelationships between internal and external components. It also allows both practitioners and researchers to view the business process not as a sequential process (i.e., value chain) but an evolutionary process that may take the shape of various value configurations. Theoretically, the EBM framework enables researchers to relate different findings to an integrated framework that can be used as a checklist to analyze different components and their relationships. It also allows other researchers to focus on specific elements that can explain the value creation processes inherent in business models in a longitudinal study.

Although this paper cannot claim to be exhaustive, it offers reasonable insights into ERP Industry business models. The results presented in this paper have several important practical and theoretical implications. Firstly, the concept of business model has primarily been based on industrial organization (I/O) logic and value chain logic reflecting components that imply sequential access from the supplier-firm to customer. As a result, the business model includes primary activities such as inbound logistics, outbound logistics, marketing, sales, and operation, which are less applicable to an industry with processes that converge. Consequently, important aspects of how the business model evolve and create value and how firms collaborate may be missed when changes to business models are only investigated in relation to new emerging technologies (see for example Ballon, 2007). Secondly, research on business models has not been applied to the ERP Industry, which possesses unique characteristics based on the notion of value configurations (Stabell and Fjeldstad, 1998)The discussion of the EBM framework contributes not only to the business model literature but also to the ERP Industry.

We recognize that the concept needs further and broader theorizing to increase its explanatory power. Future research can be made using comparative studies of business models in countries or industries, in order to relate past and future knowledge to each other. There is room for studying the relationship between business processes within the ERP Industry. One area could be related to the business processes of network promotion and contract management, service provision infrastructure operation, product-service systems and service engineering. Another potential area of study is to investigate how ERP industry firms collaborate with partners both in delivering the value propositions using other business processes such as outsourcing. Various sourcing arrangements (e.g., role of partner network, customers and external agencies) have changed the way an offering is produced and have been neglected in most pertinent research on business models in ERP Industry.

7 Conclusion

This paper presented an EBM framework with four components that can be explained by underlying theories based on business model literature. The generic business model concept is summarized in four components and their relationships enhance our understanding of business models providing an alternative that can be used to study business model transformation. The causality between components and the longitudinal dimension resolve the critique posed by Pateli and Giaglis (2004). It contributes to business model literature by identifying and explaining the need for an evolutionary perspective on business models, building on the work of Petrovic et al. (2001).

There are many different interpretations of the business model concept both in terms of components and causalities. However, based on the reviewed material and the EBM framework we believe there is a need for further study of the evolution of business models to allow a firm to come up with a new offering. By adapting the EBM framework to the ERP Industry to illustrate the casual complexity among business model components and the evolution of business models we contain previous criticism held against business models (i.e., unclear definition, cf. Magretta (2002)).

The EBM framework provides a holistic and longitudinal view of the firm as it conducts various activities aimed at value creation. Therefore, instead of speaking about core business processes, we propose that the offering should be explained in terms of the business process and value structures,

resources, and market and the causalities between these components as an evolutionary process. The EBM framework also captures various value configurations (Stabell and Fjeldstad, 1998) that allow it to include traditional and non-traditional business models that deal with the convergence of customers, suppliers and vendors. Thus, departing from the conventional business model literature that focuses on value creation by individual firms based on I/O logic. By incorporating different value configurations, we provided an integrated business model framework, which was illustrated using a case from the ERP Industry. This raises the level of analysis that has been almost absent in the reviewed literature, cf. Amit and Zott (2001). It also implies that research should not neglect resources and the processes that have to be performed to deliver an offering to the market. The inability to change the business processes or activities that correspond to technological revolutions is something that, in some cases, has been the cause for major failure.

References

- Amit, R. and Christoph, Z. (2001). Value creation in E-Business. *Strategic Management Journal*, 22 (6/7), 493-520.
- Applegate, L.M. and Montealegre, R. (1991). *Eastman Kodak Company: Managing information systems through strategic alliances*. Harvard Business School Case Series. Cambridge, Massachusetts: Harvard Business School.
- Ballon, P. (2007). Business modelling revisited: The configuration of control and value. *Info*, 9 (5), 6-19.
- Barnett, W.P. (2008). *The Red Queen Among Organizations: How Competitiveness Evolves*. Princeton, New Jersey: Princeton University Press.
- Barney, J.B. (1997). *Gaining and Sustaining Competitive Advantage*. Reading, Massachusetts: Addison-Wesley.
- Bouwman, H., Zhengjia, M. and Limonard, S. (2007). Business model for IPTV service: A dynamic business model framework. Paper presented at the European Regional International Telecommunications Society (ITS) Conference, Istanbul, Turkey.
- Brousseau, E. and Penard, T. (2007). The economics of digital business models: A framework for analyzing the economics of platform. *Review of Network Economics*, 6 (2), 81-114.
- Burgelman, R.A. (1991). Intraorganizational ecology of strategy making and organizational adaptation: theory and field research. *Organization Science*, 3 (2), 239-262.
- Daneels, E. (2010). Trying to become a different type of company: Dynamic capability at Smith Corona. *Strategic Management Journal*, 32 (1), 1-31.
- Dubosson-Torbay, M., Osterwalder, A. and Pigneur, Y. (2002). E-business model design, classification, and measurements. *Thunderbird International Business Review*, 44 (1), 5-23.
- Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management*, 14 (4), 532-550.
- Hedman, J. and Kalling, T. (2003). The business model concept: Theoretical underpinnings and empirical illustrations. *European Journal of Information Systems*, 12 (1), 49-59.
- Magretta, J. (2002). Why business models matter. *Harvard Business Review*, 80 (5), 86-92.
- Malone, T.W., Weill, P., Lai, R.K, D'Urso, V.T., Herman, G., Apel, T. and Woerner, S.L. (2006). *Do some business models perform better than others?* Boston, MA: MIT Sloan School of management.
- Meissner, G. (2000). *SAP: Inside the Secret Software Power* (J. U. Lorenz, Trans.). Verlag, Hamburg: Mc-Graw-Hill.
- Methlie, L. B. , and Pedersen, P. E. (2007). Business model choices for value creation of mobile services. *Info*, 9 (5), 70-86.
- Miles, M.B. and Huberman, A.M. (1994). *Qualitative Analysis* (Second ed.). London: Sage Publications.
- Mintzberg, H., Ahlstrand, B.W. and Lampel, J. (1998). *Strategy Safari: A Guided Tour through the Wilds of Strategic Management*. New York: Free Press.

- Neumann, C. and Srinivasan, J. (2009). *Managing Innovation from the Land of Ideas and Talent: The 10-Year Story of SAP Labs India*. Berlin: Springer.
- Osterwalder, A., Pigneur, Y. and Tucci, C.L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems*, 15 (1), 1-25.
- Pateli, A.G. and Giaglis, G.M. (2004). A research framework for analysing eBusiness models. *European Journal of Information Systems*, 13 (4), 302-314.
- Petrovic, O., Kittl, C. and Teksten, R.D. (2001). *Developing business models for eBusiness*. Working Paper Series.
- Poel, M., Renda, A. and Ballon, P. (2007). Business model analysis as a new tool for policy evaluation: Polices for digital content platforms. *Info*, 9 (5), 86-100.
- Porter, M.E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12 (S2), 95-117.
- Porter, M.E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- Porter, M.E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- Rappa, M.A. (2004). The utility business model and the future of computing services. *IBM Systems Journal*, 43 (1), 32-42.
- Ring, P.S. and Van de Ven, A.H. (1992). Structuring cooperative relationships between organizations. *Strategic Management Journal*, 13 (7), 483-498.
- Rosenbloom, R.S. (2000). Leadership, capabilities, and technological change: the transformation of NCR in the electronic era. *Strategic Management Journal*, 21 (10-11), 1083-1103.
- SAP. (2010a). *The History of SAP: The Age of E-business (1992-2001)*.
<http://www.sap.com/about/company/history/1992-2001/index.epx>
- SAP. (2010b). *The History of SAP: The SAP R/3 ERA (1982-1991)*.
<http://www.sap.com/about/company/history/1982-1991/index.epx>
- SAP (Producer). (2012, 25 April 2012). *The history of SAP: Overcoming limits: From e-business to in-memory (2002 - 2012)*. Retrieved from <http://www.sap.com/corporate-en/our-company/history.epx>
- Shafer, S.M., Smith, H.J., and Linder, J.C. (2005). The power of the business models. *Business Horizons*, 48, 199-207.
- Stabell, C.B. and Fjeldstad, Ø.D. (1998). Configuring value for competitive advantage: On chains, shops, and networks. *Strategic Management Journal*, 19 (5), 413-437.
- Thompson, J.D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. New York: Mc Graw-Hill.
- Tripsas, M. and Gavetti, G. (2000). Capabilities, cognition, and inertia: Evidence from digital imaging. *Strategic Management Journal*, 21 (10-11), 1147-1161.
- Van Bossuyt, M. and Van Hove, L. (2007). Mobile payment models and their implications for NextGen MSPs. *Info*, 9(5), 31-43.
- Yin, R.K. (2009). *Case Study Research: Design and Methods (Vol. 5)*. Thousand Oaks: SAGE.
- Zott, C. and Amit, R.H. (2007). Business model design and the performance of entrepreneurial firms. *Organization Science*, 18, 181-199.
- Zott, C., Amit, R.H. and Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*. 38, 375-414