

8-6-2011

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## Recommended Citation

Andresen, Katja; Brockmann, Carsten; and Roztocki, Narczyz, "Business Models for Enterprise System Providers: Towards the Solution Based Procedure" (2011). *AMCIS 2011 Proceedings - All Submissions*. 236.

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# Business Models for Enterprise System Providers: Towards the Solution Based Procedure

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## ABSTRACT

Research on Enterprise Systems (ES) generally focuses on the implementation phase and issues occurring during the initial run-time. In contrast, only limited research on the selection of an ES has been conducted; a clear focus on the outcome of the selection phase from the perspective of the ES provider and the deploying company has not been presented yet. This contribution aims to close that gap by proposing a procedure to determine a business model for ES providers with the most favorable outcome for the company implementing the ES.

## Keywords

Enterprise systems, ERP, system selection, business model.

## INTRODUCTION

The substantial size of the global market for Enterprise Systems (ES) is attracting numerous providers that offer a large variety of proprietary and free (open source) offerings. This drive to capture a share of this potentially lucrative market is not surprising, as in today's digital world, it is almost impossible to manage a large company without having an ES in place. Short lifecycles combined with integration issues resulting from mergers and acquisitions of companies with various systems accelerate the necessity of regular acquisitions of new ES packages (Themistocleous and Watson, 2005).

Frequently, the ES providers follow a business model that focus on large one time revenue from selling a new ES package. In this business model, additional revenues are obtained by offering maintenance plans and consulting support to the client firm. However, over the recent years this business model apparently became obsolete. It appears that many companies became educated ES users, who are more aware of the potential problems and smartly playing numerous providers against others, hence lowering the purchase price.

It seems that it is time for ES providers to rethink this approach and to develop more realistic business models that are more customized to potential system adopters. Unfortunately, in spite of many research on other aspects of ES (Esteves and Pastor, 2001) there is not much academic research on this important and current topic. This scarcity of reports focusing on business models for ES providers motivates our research.

The remainder of our paper is organized as follows. After the theoretical background section, we discuss our methodology. In the following section, we propose our solution. The paper concludes with ideas for future research.

## THEORETICAL BACKGROUND

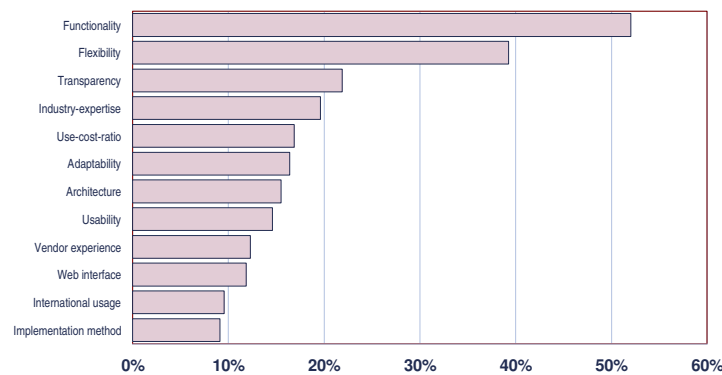
The concept of designing business models has entered serious scholarly research after (Timmers, 1998) defined and characterized business models. Following the Dot-com bubble, the research on business models continued with exemplary scholar publications which had an impact are those by (Johnson, Christensen et al., 2008; Magretta, 2002). One of the most recent procedures to develop the business models is the canvas approach developed by (Osterwalder and Pigneur, 2009) that is capable of graphically displaying a company's business model.

Although the business models became very popular in recent years (Shafer, Smith et al., 2005), only a few research studies reported specifically about the business models used by Enterprise Systems (ES) providers. Business models of ES providers have been studied by (Brockmann and Gronau, 2009) and the ecosystem of ES providers by (Sultanow, Brockmann et al., 2010).

The majority of the approaches intend to define the business model of specific companies. This business model in various cases can be used to determine financial success or failure resulting from the configuration of the value creating activities in combination with their resources and the attempt to capture the value.

The perspective taken in our contribution starts with the analysis of the problems of a company that is forced to implement or change the ES. Then, the problems of an ES provider are listed and analyzed. This simultaneous analysis of the problems of both client company searching for a new ES and ES provider enables creation of a business model for an ES provider that will solve both: his own and the client's problems.

Understanding the motivation for a client company to change their ES is important factor in this process. In essence, there is often a combination of multitude of reasons why companies change or implement a new ES. In a systematic research, (Gronau, 2009) found various reasons why companies change the ES as depicted in Figure 1. The most common drivers for ES implementations are the lack of functionality and the limitations in flexibility of the existing systems. Moreover, potential improvements from increased organizational transparency and industry-experience also motivate companies to implement a new ES system. A different strong driver for ES in the need for integration (Roztocki and Weistroffer, 2009). The drivers for ES implementation are depicted in Figure 1.



**Figure 1. New Enterprise Systems Implementation (adapted from Gronau 2009)**

An effective software selection process must result in the selection of the best suitable system for the existing organizational business processes. In this context, business processes are defined as various activities using inputs to create outputs, that provide value to the customers (Davenport, 1993; Hammer and Champy, 1993). Thus, a proper software selection requires a considerable amount of time, planning and continuous (re)evaluation of decisions. To ensure the best fit, a typical software selection process considers a series of steps that each captures problems to be addressed. These steps, or phases, of a typical software selection process, along their duration in weeks are depicted in **Error! Reference source not found.** and briefly described further on.

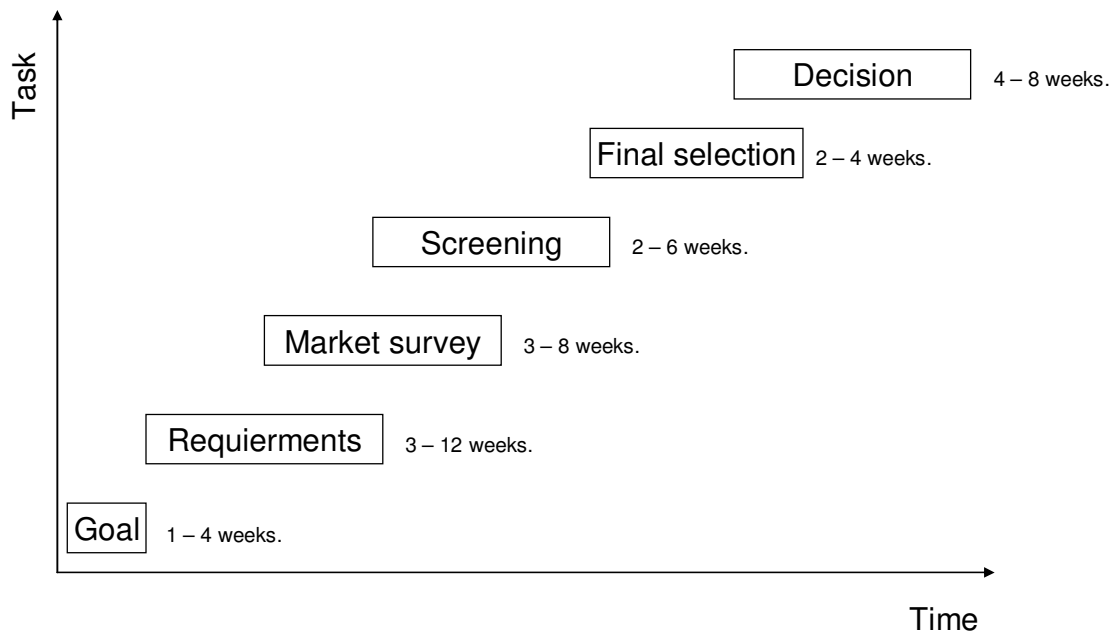


Figure 2. The ERP selection process (Gronau, 2001b)

Using the ERP selection process as an example, the major phases of software selection process can be briefly summarized as follows (Gronau, 2001a):

- **Goal** (Gronau, 2001b): The definition of goals within the software selection process is necessary to determine whether the targeted goals (Qualitative goals and budget goals) have been achieved through the introduction when analyzing the selection a posteriori. The goal definition should contain the current position and describe what kinds of changes (technical/organizational) are necessary to reach the desired state by a certain date using a determined budget.
- **Requirements** (Gronau, 2001b): Four different types of requirements exist: technical, training-related, functional, and adaptive. *Technical requirements* consist of the IT architecture after the ERP system is introduced, necessary changes and interfaces to be added. *Training-related requirements* are basically the ease of use of the new systems and refer to the amount of training necessary so employees use the system effectively. Users need less training if the ERP system is intuitive. *Functional requirements* focus of the main business processes the ERP system should include. This equals the previously defined condition one that needs to be fulfilled, so the cash inflow can be considered within the ERP ROI-Analyzer. Finally, *adaptive requirements* consist of the ability to change business processes once the ERP system is installed (Andresen, 2006).
- **Market survey** (Gronau, 2001b): After the requirements have been defined, a list of ERP system providers can be compiled through market research. According to (Pedret, Sagnier et al., 2000) sources of information can be classified as primary and secondary. Primary information is collected by the company searching for a new ERP system or on its behalf, while secondary sources contain already existing information.
- **Screening** (Gronau, 2001b): The purpose of screening ERP system providers is to reduce the number of potential ERP systems which can be implemented within a company to two or three. System providers should receive questions in written form. Questions about the number of people employed by the ERP system provider, the ability to handle business processes previously defined as very important and a brief estimate of the costs of implementation should be included. (Ziaee, Fathian et al., 2006) recommend requesting cost estimates in order to minimize overall procurement and integration cash outflows for the implementation project as a whole. (Trimi, Lee et al., 2005) argue that high risks are experienced in the installation of ERP systems, due to cost overruns and a high rate of installation time, and thus, special attention should be paid to the budget. In order to reduce this risk, (Robey, Coney et al., 2006) propose outsourcing the implementation of the ERP system to an external contractor. In this

way, a company's own IT department can save, as nobody will need to be trained on issues related to an introduction fully managed by the IT department.

- Final selection (Gronau, 2001b): In this phase, ERP system providers are invited to present their system at the client site. The basic motivation for this presentation is to let the ERP system provider use the prospective client's corporate master data to demonstrate how its ERP system creates value. This phase corresponds to the one described by (Alshawi, Themistocleous et al., 2004), where a company must determine the degree of compatibility of its existing business processes with the abilities of the ERP system of a particular provider. If the business processes within the company do not fit those in the ERP system, the provider will need to re-configure the ERP system or the company needs to adopt the business process as required from the ERP system. Often, this configuration of the ERP system is termed customizing.
- Decision (Gronau, 2001b): During this final phase of the software selection process, various contracts (e.g. purchase and maintenance agreements) are negotiated and signed.

## METHODOLOGY

Following the literature review that assessed the current status of research on business models, revenue generation by ES providers, and drivers for ES implementation, we decided to use action research (Rapoport, 1970; Susman and Evered, 1978) as the main tool to build our Problem Solution Business model. The main reason for choosing action research as the main research methodology was the extensive consulting experience of one co-author in working with ES providers.

Subsequently our actions research followed the five phases suggested by Susman and Evered (1978): *diagnosing* phase, *action planning* phase, *action taking* phase, *evaluating* phase, and *specifying learning* phase.

In the *diagnosing* phase, one of co-author selected several German ES providers which could be used for this study. In particular, the most suitable ES providers for our action research appeared those that were not satisfied with their existing business models and searched for better alternatives. One of the reasons for the discontent with their current business model was the revenues from license sales and maintenance fees are shrinking while customers demand software as a service.

In the *action planning* phase, the key employees of the ES providers were familiarized with the ideas behind the business models and various options were discussed. One of the issues executives of ES providers face is the increased need of data security by their customers. A second issue that was addressed during the phase was to select companies that would form part of the experimental customer group. Through workshops it was determined that service companies should receive the experimental offering, since during the execution of their processes master data instead, of transaction data, is processed.

In the *action taking* phase, based on the previous discussions a new fee schedule was offered to a selected, small group of potential clients. Further on, a higher level of support was offered to customers that decided to transfer their master data into the ES provider's cloud. The support targets two issues: First, the physical transfer of the master data into the cloud, and second a faster response to questions asked by the employees of the implementing company since the ES provider strategically locks in the customer by storing its data.

In the *evaluating* phase, the outcomes of the new fee policy were discussed and compared with the old model.

Finally, in the *specifying learning* phase general findings were identified.

## AN APRIORI AND A POSTERIORI BASED APPROACH

The basic idea of designing the business model presented in this contribution contains an evaluative component which consists of determining changes in the business model over the course of time. The authors of this contribution suggest that through the observation of the business model components through the course of time an evolution would be observable which consist in components that are added, modified, or eliminated due to financial failure. The necessary data was collected in the various phases of actions research described earlier.

## SOLUTION BASED PROCEDURE

The action research led to the Figure 3 which is explained further on. On a high level of abstraction, the problems of the customers as well the providers are determined. The solution consists in aligning both problems, creating a commercial opportunity by solving the problems at the same time. Additionally, the authors suggest that an a priori and posteri point of view should be taken to determine the degree in which the problems are solved over the course of time.

The customer encounters problems during the course of time which can be either system related or business process related. Due to technological changes the currently deployed ES could be perceived as obsolete by the employees. After determining that an obsolete system shall be replaced, the next problem is faced is to select the most adequate ES. After selecting an ES, it needs to be implemented which requires a lot of time from the human resources working at a company. The next problems results in maintaining the system, which includes updating the processes inherent to the system according to changes in legislation. The last problem faced is the one of system termination which is to determine when the old ES should be turned off.

The ES provider faces a variety of different challenges. The need for positive cash flow is inherent since cash flows are needed to cover the ongoing costs. The next problem is marketing related, particularly promotion related. Brand awareness needs to be created to ensure that the ES provider is part of the potential customer’s evoked set. Further on, a smooth implementation also needs to be assured. Implementation can be defined as smooth if the majority of the customer’s employees use the ES with a minimum amount of training. Further on, maintenance needs to be cost effective since it is supposed to provide a vast proportion of ES providers income. The last problem faced by an ES provider is customer retention which should make customers feel that the system they are currently using is adequate for them and will continue using it.

The business model for ES providers aims to solve problems of the customer and the ES provider. If the ES provider has a business model that alleviates the customer from its problems and does so with the own problems, while positive cash flow is generated it can be classified as suitable. The next solution is a component based ES, allowing the customer to select the components that are of most beneficial. Value creation can occur through different services offered. For example value could be created by training the users on how to use the system or how to migrate data from the customer into the cloud. Value capturing refers to minimize the own costs in order to receive the highest cash flow with a given cash inflow.

If problems and solutions are compared at various moments an evolution can be determined and seen. This evolution can help an ES provider have a better insight into his customers’ needs.

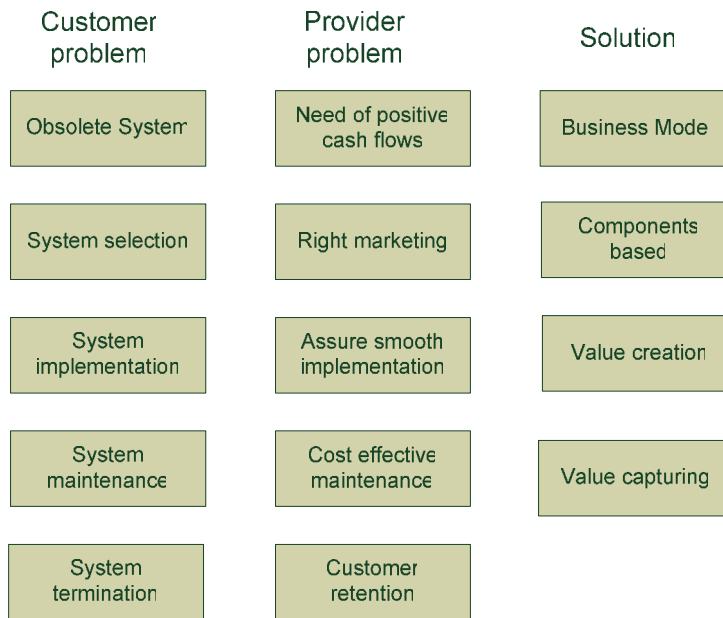


Figure 3. Solution Based Procedure: Components Based Value Creation and Revenue Capturing.

## **CONCLUSION AND FUTURE RESEARCH**

The findings in this study are based on action research. The authors propose to follow up the results through a quantitative survey which should provide more reliable data. In addition to the quantitative approach, various case studies could be conducted in order to enrich the findings.

Though the action research was performed in Germany the authors perceive that the findings could be generalized and applied within developed countries in the European Union. In order to determine possible differences between the countries, a study comparing US and European ES providers should be conducted. The study could also be extended to emerging and transition economies located in Europe and Asia, since, these economies are continually gaining more importance. The proposed Solution Based Procedure, seems to be in particular useful for the small but fast growing ES providers located in emerging economies that are still in the process of building their brands (Dobija, Klimczak et al., 2010).

This contribution provides a guideline for ES provider executives to determine which changes of their business models could be performed to increase the profitability. The focus on solving the customer's problems and by doing so solve the own problems is perceived as the most adequate to create a sustainable competitive advantage in turbulent times.

## REFERENCES

1. Alshawi, S., Themistocleous, M., and Almadani, R. (2004) Integrating diverse ERP systems: a case study, *The Journal of Enterprise Information Management*, 17, 6, 454 - 462.
2. Andresen, K. (2006) Design and Use Patterns of Adaptability in Enterprise Systems, Gito Verlag, Berlin.
3. Brockmann, C., and Gronau, N. (2009) Business Models of ERP System Providers in (Eds.) *Proceedings of the AMCIS 2009*, San Francisco, USA,
4. Davenport, T. (1993) Process Innovation: Reengineering work through information technology, Harvard Business School Press, Boston.
5. Dobija, D., Klimczak, K. M., Roztocki, N., and Weistroffer, H. R. (2010) Market Reactions to Investments in Information Technology: Insight from Warsaw Stock Exchange in (Eds.) *Proceedings of the Proceedings of the Sixteenth Americas Conference on Information Systems*, Lima, Peru, August 12-15, 2010.,
6. Esteves, J., and Pastor, J. (2001) Enterprise Resource Planning Systems Research: An Annotated Bibliography, *Communications of the Association for Information Systems*, 7, 8, 2 - 51.
7. Gronau, N. (2001a) Auswahl und Einführung industrieller Standardsoftware, *PPS-Management*, 6, 14 - 18.
8. Gronau, N. (2001b) Industrielle Standardsoftware, Oldenburg Verlag, München.
9. Gronau, N. "Enterprise Systems Knowledge: A New Way to Detect Changes in the ERP Market in Central Europe," in: *AMCIS*, San Francisco, 2009.
10. Hammer, M., and Champy, J. (1993) Reengineering the corporation, Nicholas Brealey, London.
11. Johnson, M. W., Christensen, C. M., and Kagermann, H. (2008) Reinventing You Business Model, *Harvard Business Review*, 86, 12, 50 - 59.
12. Magretta, J. (2002) Why Business Models Matter, *HARVARD BUSINESS REVIEW*, 80, 5, 86 - 92.
13. Osterwalder, A., and Pigneur, Y. (2009) Business Model Generation, Osterwalder Strategy Foundation, Lausanne.
14. Pedret, R., Sagnier, L., and Camp, F. (2000) La investigación comercial como soporte del Márketing, Ediciones Deusto S.A., Bilbao.



15. **Rapoport, R. N. (1970) Three Dilemmas in Action Research, *Human Relations*, 23, 6, 499 - 513.**
16. **Robey, M., Coney, D., and Sommer, R. A. (2006) Contracting for implementation of standard software, *Industrial Management & Data Systems*, 106, 4, 562 - 580.**
17. **Roztocki, N., and Weistroffer, H. R. (2009) The impact of enterprise application integration on stock prices, *Journal of Enterprise Information Management*, 22, 6, 709 - 721.**
18. **Shafer, S. M., Smith, H. J., and Linder, J. C. (2005) The power of business models, *Business Horizons*, 48, 3, 199-207.**
19. **Sultanow, E., Brockmann, C., and Gronau, N. (2010) Enterprise systems ecosystem: A case study based comparison of software companies in AIS (Eds.) *Proceedings of the American Conference on Information Systems*, Lima, Peru,**
20. **Susman, G. I., and Evered, R. D. (1978) An Assessment of the Scientific Merits of Action Research, *Administrative Science Quarterly*, 23, 4, 582-603.**
21. **Themistocleous, M., and Watson, E. (2005) EJIS special issue on making enterprise systems work, *EJIS*, 14, 2, 107 - 109.**
22. **Timmers, P. (1998) Business Models for Electronic Markets, *EM - Electronic Markets*, 8, 2, 3 - 8.**
23. **Trimi, S., Lee, S. M., Olson, D. L., and Erickson, J. (2005) Alternative means to implement ERP - Internal and ASP, *Industrial Management & Data Systems*, 105, 2, 184 - 192.**
24. **Ziaee, M., Fathian, M., and Sadjadi, S. J. (2006) A modular approach to ERP-System selection, *Information Management & Computer Security*, 14, 5, 485 - 495.**