Business Case Development for Inter-Organizational ES Implementations

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Abstract. This paper describes my PhD research on the development of business case guidelines that can be used for complex information system implementations, such as inter-organizational enterprise systems (ES). I identify problems and solutions related to the issue of estimating the costs and benefits of such complex implementations. Next to describing the research method used in my PhD project, I discuss what my research adds to the body of research and why this work is of interest for both the research community and practitioners.

Keywords: Business Case, Benefits Management, Inter-organizational ES.

1 Introduction

The focus of my research is on analyzing the business case (BC) phenomenon in the context of investment decisions on inter-organizational ES implementations. A survey by KPMG indicated that weak BC's are one of the three most common reasons for project failure [1]. This opens up the questions what makes a successful BC and how can it prevent a project from failure. Answers to these questions, in the form of BC guidelines, will be of use to ES adopters to get clarity on ES benefits and costs early in the project. Thus, they would be able to make informed decisions on how to steer their project in a way that causes the desired effects.

Conceptually there is an important difference between a business model and a BC. Business models describe why a company is in business and how the company creates value [2]. The purpose of developing a BC is to describe the main rationale behind e.g. an investment decision [3] to implement an ES. A BC enables participants to think through and estimate the expected costs and benefits of an ES for the adopting organization. Benefits and costs are the essential elements of a BC and will be the focus of our research as one can see in our research questions.

2 Research Questions & Problem Investigation

Table 1 shows the structure of my research based on the research questions. Practical problems are labeled with a "P" and describe the difference between the way the

world is experienced by stakeholders and the way they would like it to be [4]. Knowledge questions, "K", are either empirical or conceptual questions that will be answered with research; the research methods used are shown in table 1.

RQ1: P: Improve the development and use of BC's to support investment decisions about inter-organizational enterprise system (ES) implementations.
- Preliminary investigation: stakeholders, their goals, criteria to be applied to your solution.
- RQ1.1 P: Design a comprehensive benefit model.
  - o RQ1.1.1 K: Which benefit models exist? *Literature study*
  - o RQ1.1.2 K: Integrate, improve and customize those models to ES. *Conceptual modeling*
  - o RQ1.1.3 K: How do companies ensure that they realize planned benefits? *Survey, Case study*
  - o RQ1.1.4 K: How is benefits management used during the ES life-cycle? *Survey, Case study*
  - o RQ1.1.5 K: Validate the benefit model on truthful and usefulness. *Action research*
- RQ1.2 P: Design a cost model.
  - o RQ1.2.1 K: Which cost models exist and are relevant for our research? *Literature study*
  - o RQ1.2.2 K: Integrate, improve and customize those models to ES. *Conceptual modeling*
  - o RQ1.2.3 K: Validate the cost model on truthful and usefulness. *Action research*
- RQ1.3 K: Find relationships between benefits and costs.
  - o RQ1.3.1 K: Which benefits, in the benefit model, are dependent on organizational change and therefore result in additional costs? *Conceptual analysis*
- RQ1.4 P: Design a way to allocate costs and benefits to partners in a network in an economically sustainable way.
  - o RQ1.4.1 K: Identify characteristics and mechanism in place in an inter-organizational network. *Literature and Case studies*
  - o RQ1.4.2 K: How do companies decide with whom to collaborate in a network? *Case studies*
  - o RQ1.4.3 K: How do companies decide on the form of collaboration in a network? *Case studies*
  - o RQ1.4.4 K: How do business partners agree on a shared value network? *Case studies*
  - o RQ1.4.5 K: How are costs and benefits allocated among business partners? *Case studies*
  - o RQ1.4.6 K: Which techniques are used for cost and benefit allocation? *Case studies*
  - o RQ1.4.7 K: Develop a computational distribution model based on the insights from the questions above. *Conceptual modeling*.
  - o RQ1.4. 8 K: Validate the value distribution model on truthful and usefulness. *Action research*
RQ2: K: Validate the business case guidelines based on the criteria identified in the preliminary analysis. *Action research*

Table 1: Research Questions (K = Knowledge question, P = Practical problem)

A first literature search (addressing RQ1.1.1 and RQ1.2.1) showed us that academic research on the deployment of BCs during ES implementations is limited, especially with respect to defining characteristics of successful BCs. But the few publications are unanimous that the deployment of the BC during the ES implementation follow a generic pattern [5-7]. Several reviews on ES benefits [8-9] show that current benefit frameworks pay limited attention to contextual and temporal variations, socio-technical and business change, and levels of benefit realization [10]. Further, it is mentioned that current studies provide limited insights into how the variations in motivations for undertaking an ES project influence the expected and realized benefits. Following this analysis, we conclude that the limited scope of existing frameworks asks for a more holistic and detailed analysis of ES benefits, embedded in benefits management. As our research addresses these issues, we conclude that our research is of interest for the research community.

Part of the preliminary investigation is to identify the stakeholder goals; this was done with a survey conducted among 59 practitioners. It gives insights into the relevance of this topic and how the BC is deployed in practice during the implementation process. The survey results show that 30% of the respondents are

satisfied with their current BC practice. This satisfaction is positively influenced by satisfaction with both benefits management as well as cost estimation.

3 Research Methodology

This PhD research is defined as interdisciplinary and it includes elements from both conceptual as well as empirical research. It can be structured in three phases: problem investigation, solution design and solution validation [4].

Problem investigation: We conducted an extensive literature review (RQ1.1.1, RQ1.2.1 and RQ1.4.1) [11] covering scientific publications in the areas of "IS BC development", "benefits management", "cost estimation" and "ES implementation". In order to analyze if the demand for an improved BC method is also present in practice we performed a survey among practitioners. The survey results are used to support the motivation and relevance of this thesis project and further provide the basis to answer RQ1.1.3 and RQ1.1.4.

The solution design process is characterized by its iterative nature. Our initial solution proposal is based on design specifications identified in literature and our own logical reasoning (RQ1.1.2 and RQ1.2.2). The next iteration refines the solution by adding insights from several expert interviews with people from industry and academia into current BC practices and requirements for an improved BC method. Further iterations use input from the analysis of several case studies (RQ1.4).

Finally, we will validate our improved BC method by applying it in several case settings answering RQ2 (action research).

4 Solution Design

The proposed solution for my research problem is to iteratively develop a BC method including a methodology (guidelines) describing how it can be used in practice. The BC method should help to improve the ES implementation process in inter-organizational partnership structures. We further plan to provide a first validation of the method using both analytical argumentation and empirical case studies. The BC method includes estimates on benefits and costs and helps to make justified investment decisions. The BC methodology provides a step-by-step guideline that can be used to set-up the BC in the first place and further as a management tool during the entire ES implementation process. In the case that a system is implemented in a network setting involving multiple actors, each actor writes a BC on its own and jointly the actors arrive at a shared value model, describing where in the network value is created. The BC method should provide negotiation and decision support to help the actors in the development and agreement process towards a shared BC.

In order to ensure that the results of this research meet our original objectives we identify mechanisms that describe the effects our solution has in a given context. We will further identify criteria the solution has to fulfill in order to be successful. The main criteria are that our solution is usable in practice, provides reliable results and does not ask for information that the users of the BC are unable to provide.

I expect several challenges in answering my research problem, especially with respect to the applicability or usability of the BC guidelines for practitioners. This is extremely difficult to achieve, as it assumes that the complexity of the BC can be reduced at the same as more detail can be added, e.g. in order to make benefits measurable. We still need to analyze how we can solve this problem.

Comparing my work to existing work, one can observe that more and more research emerges on the topics of benefits management and BC development. However, my suggested BC method differs from the already existing approaches, as it has a total life cycle focus and includes both tangible as well as intangible benefits and costs. My solution is further focused on inter-organizational ES implementations and therefore will include negotiation and decision support, an area not very well covered in current BC and benefits management literature.

5   Conclusion

Successful BC development is a quite challenging, but important task, as it influences project success. Improving the development and use of BC's to support investment decisions about inter-organizational ES implementations is therefore my research focus. This paper analyzes the problem, presents research questions, my methodology and a first description of my solution and how it compares to existing approaches.

References

1.   Whittaker, B.: What Went Wrong? Unsuccessful Information Technology Projects, Information Management & Computer Security, vol. 7, 23-29, (1999).
2.   Osterwalder, A. and Pigneur, Y.: An e-Business Model Ontology for Modelling e-Business, in Proceedings of 15th Bled Electronic Commerce Conference – e-Reality: Constructing the e-Economy, Bled, Slowenien, (2002).
3.   Schmidt, M. J.: What's a Business Case? And Other Frequently Asked Questions, Solution Matrix (2003).
4.   Wieringa, R. J.: Design Science as Nested Problem Solving, in DESRIST, Malvern, PA, USA, (2009).
5.   Nah, F. F.-H., Lau, J. L.-S., and Kuang, J.: Critical Factors for Successful Implementation of Enterprise Systems, Business Process Management Journal, vol. 7, 285 - 296, (2001).
6.   Ross, J. W. and Beath, C. M.: Beyond the Business Case: New Approaches to IT Investment, MIT Sloan Management review, vol. 43, 51-59, (2002).
7.   Ward, J., Daniel, E., and Peppard, J.: Building Better Business Cases for IT Investments, MIS Quarterly Executive, vol. 7, 1-15, (2008).
8.   Esteves, J. and Borhorquez, V.: An Updated ERP Systems Annotated Bibliography: 2001-2005, Communications of AIS, vol. 19, 386-446, (2007).

9.   Staehr, L.: Assessing Business Benefits from ERP Systems: An Improved ERP Benefits Framework, in Proceedings of the 28th   International Conference on Information Systems, Montreal, Canada, (2007).

10.   Schubert, P. and William, S.: An Extended Framework for Comparing Expectations and Realized Benefits of Enterprise Systems Implementations, in Americas Conference on Information Systems (AMCIS), San Francisco, California, (2009).

11.   Webster, J. and Watson, R. T.: Analyzing the Past to Prepare For the Future: Writing a Literature Review, MIS Quarterly, vol. 26, xiii-xxiii, (2002).