Assessing inventory projects from a stakeholder perspective: Results of an empirical study

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ABSTRACT

Based on the stakeholder salience theory, in this article five inventory projects are described and analysed. Results of the case studies presented in this article show that in practice the reshaping of inventory systems often is not a linear, well-defined process but emerge during the course of the project. Most importantly, our case studies clearly indicate that the outcome of inventory projects is often heavily influenced by the interests of different stakeholders. Apparently, decisions made during the course of inventory projects are only partly based on rationality and strongly influenced by negotiation behaviour, power relationships and opportunistic behaviour of the stakeholders involved. It seems to be important to be aware of the different roles stakeholders can play during the course of inventory projects. The results presented in this article may therefore help project managers to guide projects in the area of inventory management more effectively.

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1. Introduction

In practice, projects in the area of inventory management often relate to different management areas and cover several aspects like information, planning and control. Additionally, inventory management systems in many cases also encompass an organisational dimension. Allocating authorities and responsibilities as well as creating co-ordination mechanisms between the parties involved in the inventory system for instance, are some important decisions that have to be made during the process of (re)designing and implementing inventory systems (e.g. Bonney, 1994). For this reason, the (re)design and implementation of inventory systems can be considered as complex decision-making processes, including many different aspects which relate to different management areas and which are affected by several stakeholders involved in the project (e.g. Kisperska-Moron, 2003).

Studies performed in the area of ERP-implementations suggest that different stakeholders often have different perceptions of the aim and scope of ERP-projects (Boonstra, 2006; Markus, 1983). Additionally, in many cases various stakeholders have different interests regarding the outcome of the project and it is for this reason that the outcome of projects in the field of ERP apparently is a mix of rational behaviour, political actions and negotiation behaviour of the stakeholders involved. Because the design and implementation of inventory systems is directly related to management areas like Production, Sales and Finance, there are some indications that no fundamental differences exist between ERP-projects and projects on inventory management. Similar to ERP-projects, projects in the area of inventory management are often characterised by different stakeholders being involved in the project, conflicting goals to be achieved and a dominant role of information technology (e.g. Frankel, 2006; Manthou et al., 1996).

Interestingly, only few studies have addressed the question how the design and implementation of inventory systems is affected by different stakeholders. Moreover,

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only a limited number of empirical studies are available regarding the question how cultural differences, conflicting interests and power relationships of stakeholders influence the shaping and implementation of inventory systems (Janssen, 2005). Undoubtedly, having a clear understanding of how power and interest relationships between the stakeholders influence the outcome of inventory projects can be helpful to strategic and tactical decision-making processes on inventory systems. Additionally, this understanding can also be beneficial for the effectiveness of inventory projects.

Our paper draws heavily on five case studies. Each of the case studies aimed at providing an in-depth understanding of the role and impact different stakeholders can have on the design and implementation process of an inventory management system. Starting from the notion that inventory management projects often include a planning, information and organisational dimension, a framework for assessing the influence of different stakeholders is presented. This framework is based on the stakeholder salience theory (e.g. Mitchell et al., 1997), and aims at describing and analysing the influence stakeholders may have on inventory projects. In the second part of the paper, the framework is confronted with practice. The case studies describe and analyse successive changes in the inventory system of five companies. In particular, the case studies try to reveal how actions based on the perceptions of the stakeholders have influenced the shaping of the organisation, information and planning aspects of the inventory system. The last sections of the paper elaborate on some of the main findings of the case studies. First of all conclusions are drawn about how different stakeholders can influence the outcomes of inventory projects. Secondly, conclusions are derived from our case data regarding the application and usefulness of applying a stakeholder perspective when analysing inventory projects.

2. Backgrounds

Traditionally, inventory management is often associated with volume and timing decisions. For this reason, in literature a huge amount of models and techniques is available dealing with questions like: how big should replenishment orders be, at what point in time replenishment orders should take place, and what procedures should be implemented in companies to facilitate the timing and volume decisions (e.g. Blinder and Maccini, 1991). During the last decade however, both in literature as well as in practice, there is a growing awareness that inventory management not only relates to managing day-to-day decisions but also encompasses organisational-related issues. Zomerdijk and de Vries (2003) for instance address four different dimensions that relate to an organisational perspective on inventory control. Based on an in-depth case study they argue that the allocation of tasks, the decision-making processes, the communication processes as well as the behaviour of parties involved in the inventory management system ultimately deter-

mine the effectiveness of inventory control in practical situations. In line with the results of the case study performed by Zomerdijk and de Vries (2003), de Vries (2005) presents an approach for diagnosing inventory management systems. Amongst other issues, this approach includes an assessment of the organisational embedding of the inventory management system. Clearly, the way functions and activities related to the inventory system are shaped, the overall organisational structure, the degree of formalisation of behaviour and the allocation of authorities and responsibilities regarding the inventory management system also highly influence the performance of inventory management systems (de Vries, 2005).

Not only the day-to-day performance of inventory systems is highly affected by the organisational context of the system, when confronted with the need to reassess inventory systems the outcome of the diagnosing and redesign process probably is also influenced by the organisational setting of the inventory project. It is well known from organisational literature for instance that various groups of people in organisations may have different perceptions and interpretations of information systems to be implemented (Knights and Murray, 1992; Markus, 1983). From this perspective, the shaping and design of information systems can be explained by studying the actions and attitudes of the stakeholders involved in the process of change. Especially in the field of information systems, many studies indicate that various stakeholders react in different ways when confronted with a necessity to (re)design the information system on hand. Additionally, the ultimate outcome of Information and Communication Technology (ICT) projects is often the result of political processes, different perceptions stakeholders have of the system as well as the result of an ongoing process of welcoming, rejecting and adapting different features of the system. The model presented by Orlikowski (1992) for instance suggests that technologies are modified by the stakeholders involved in the change process and that for this reason, information systems are not the result of a fixed, pre-determined set of rational design rules.

To deepen our understanding of the shaping of inventory management systems, it seems to be worthwhile to study the influence and actions of different stakeholders during the design and implementation of inventory systems. Similar to projects in the field of information systems, inventory management projects are often characterised by the existence of multiple stakeholders. In practice, representatives from the area of production, sales, planning and ICT often participate in inventory projects and it is for this reason, it is reasonable to assume that the outcomes of inventory projects are shaped by the actions of various stakeholders. Although different definitions exist of stakeholders, in our study a stakeholder is defined as an individual or a group of individuals who can affect or is affected by the redesign and implementation of an inventory system. Our study in other words, considers an inventory project as a change project and focuses on the influence different actors have on the outcome of this inventory project. Additionally, in