Industry-Wide Supply Chain Information Integration: The Lack of Management and Disjoint Economic Responsibility

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ABSTRACT

Experiences from enterprise-wide integration initiatives during more than four decades indicate that industry-wide information integration could render substantial benefits. Two ways in which industry-wide integration differs from enterprise-wide integration are that there is no common management level and the economic units in the integration are the constituent units, not the industry. Management involvement has been emphasized as perhaps the most critical success factor for enterprise-wide information integration. The common economic unit enables increased costs in one part of the organization to lower the total cost in the company as a whole. In this article the authors address which consequence these two differences have for the development of information integration in four industry-wide supply chains. The authors find the existing methods for enterprise-wide information integration, such as BPR, virtually impossible to apply on industry-wide information integration and that the disjoint economic responsibility is a hampering aspect in reaching potential benefits of industry-wide information integration.

Keywords: Food Industry, Industry-Wide Integration, Information Systems Integration, Supply Chain, Integration Management

INTRODUCTION

If management commitment is the most critical success factor, what then if there is no management level? After companies have become integrated in their internal information flows there is also a need to address information integration across organizational borders in industries. During the last decades, organizational boundaries have been blurred and technological innovations have introduced the alternative of integrating business with partners higher up or further down in the value chain. This type of integration is in many aspects different from integration that takes
place inside an organization, not at least because of the absence of a higher managerial force. Industries with their cross-organizational spanning supply chains have no orchestrating function, something that could make existing integration and business process reengineering methodologies inadequate. In addition, experience from intra-organizational information integration tells that frequently what in the end becomes an efficiency gain for the organization as a whole may impose an increased burden on the single business unit – the factor of asynchronous efficiency gains (c.f. Hedman & Kalling, 2003). Asynchronous gains are possible to enforce since the organization act as one single economic unit, but this is not the case for industries which have disjoint economic responsibility.

Much is written on information integration in intra-organizational value chains and how to make it work efficiently (e.g. Alsene, 1999; Karuppan & Karuppan, 2008; Konsynski, 1993). Similarly much research has been directed towards two-part integration with inter-organizational systems (IOS) and electronic data-interchange (EDI) in Business-to-Business (B2B) and Business-to-Government (B2G) relationships (e.g. Henriksen, 2006; Krcmar, Bjørn-Andersen & O’Callaghan, 1995; Lim & Palvia Prashant, 2001; Masetti & Zmud, 1996; White, Daniel, & Mohdzain, 2005). Less is, however, known about the industry-wide value chain with focus on the whole chain from initial producers to end consumers (Browne, Sockett & Wortmann, 1995; Konsynski, 1993). The industry-wide context introduces issues of inter-organizational collaboration among several actors, an increased multitude of IS, organizational cultures and organizational objectives. Although the technical challenges of information integration may be similar regardless of intra- or inter-organizational context, the organizational and managerial challenges in industry-wide information integration needs special attention as they presents a different integration context (Neureuther & Kenyon, 2008).

This article answers to an explicit call for research by Pant, Sethi and Bhandari (2003) in which they state that “there is a need to revisit intra-organizational change management theories to ascertain if they will as effectively apply to inter-organizational or supply chain-wide change.” We do so by addressing the question which consequences the lack of management level to orchestrate the process and the disjoint economic responsibility has on development of industry-wide information integration. Our general purpose is thus to provide new knowledge on information integration in industry-wide supply chains. Our contributions to this purpose are several. We both theoretically and empirically explore two contextual circumstances to information integration in industries: the lack of common management unit and the factor of asynchronous gains. In this process we also describe and explain the existing information integration, and the lack of integration, in one particular industry – the Swedish agri-food industry. Finally, we also contribute with ideas of processes and factors that would lead to increased integration in industry-wide supply chains.

This article is structured as follows. In the next we will present previous research that can be useful for explaining information integration in industry-wide supply chains. Thereafter we will introduce our structured case study approach and the four cases in the agri-food industry that create the empirical foundation for the article. We will then discuss which aspects of our cases that is covered by existing theory and which are not. Finally we address how the barriers for information integration in industry supply chains can be overcome and draw general conclusions from our research.
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