



Article

Collaboration and information sharing in dyadic supply chains: A literature review over the period 2000–2012



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ABSTRACT

Information sharing and coordination between the agents of a supply chain are considered to be an effective strategy for improving its global performance. This paper presents an updated review of current literature examining the impacts of information sharing and collaboration strategies on supply chain dynamic performance, with particular focus on dyadic structure. To achieve this, a systematic review approach is followed over the period 2000–2012, intending to ensure that the process is reproducible and auditable. A comprehensive taxonomy is also presented, highlighting strategic and operational impacts of collaborative structures. The analysis revealed that collaborative and information sharing issues underlined 10 years ago still require further attention from researchers.

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Colaboración e información compartida en cadenas logísticas diádicas: una revisión de la literatura para el periodo 2000-2012

RESUMEN

En el campo de las cadenas de suministro, se considera que las estrategias que hacen uso de la información compartida y de la cooperación entre agentes son eficaces para incrementar los indicadores de rendimiento globales. Este artículo presenta una revisión actualizada de la literatura bibliográfica y examina el impacto de la información compartida y de las estrategias de colaboración en el desempeño de las cadenas de suministro. Se utiliza una metodología sistemática para revisar el periodo 2000-2012 para asegurar la auditoría y la reproducibilidad. También se presenta una exhaustiva clasificación de los trabajos, en la que destaca el impacto estratégico y operacional de las estructuras de colaboración. El análisis revela que determinados aspectos de la colaboración y de la información compartida, sobre los que ya se hizo hincapié diez años atrás, requieren más investigación.

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Colaboração e informação partilhadas em cadeias logísticas didáticas: uma análise da literatura para o período 2000-2012

R E S U M O

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No campo das cadeias de fornecimento, considera-se que as estratégias que utilizam a informação partilhada e a cooperação entre agentes são eficazes para aumentar os indicadores de rendimento globais. Este artigo apresenta uma análise actualizada da literatura bibliográfica e examina o impacto da informação partilhada e das estratégias de colaboração no desempenho das cadeias de fornecimento. Utiliza-se uma metodologia sistemática para rever o período 2000-2012 para assegurar a auditoria e a execução. Também se apresenta uma exaustiva classificação dos trabalhos, na qual destaca o impacto estratégico e operacional das estruturas de cooperação. A análise revela que determinados aspectos da cooperação e da informação partilhada, aos quais foi atribuído especial relevo há dez anos, requerem mais investigação.

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1. Introduction

In recent years business environments have been characterized as volatile and unpredictable due to the dynamic nature of relationships and faster changes on consumer behavior. This contributes to more demand uncertainty (Roh, Min, & Hong, 2011). This behavior and the (frequent) absence of an appropriate production planning strategy coordination and synchronization between the members of the supply chain and other inefficiencies in the supply chain have a negative impact on productivity and competitiveness (Chan, Au, & Chan, 2006). The main concern of supply chain management is how to coordinate the independent players, so that they work together as a unit, in the pursuit of the common goal in changing market conditions. Therefore, enterprises are often implementing strategies for coordination (i.e. collaboration), between the members of their supply chain, in order to make more efficient use of limited resources and to capture the knowledge of suppliers and clients, in an attempt to integrate and coordinate production and information flows through the whole supply chain (Caridi, Cigolini, & De Marco, 2005; Lejeune & Yakova, 2005; Verwaal & Hesselmanns, 2004).

Generally speaking, collaboration is the act of managing interdependencies between activities performed to achieve a goal (Malone & Crowston, 1994). Based on the analysis of Simatupang, Wright, and Sridharan (2002), collaboration in the supply chain context can be viewed as an act of properly combining (relating, harmonizing, adjusting, aligning) a number of objects (actions, objectives, decisions, information, knowledge, funds) for the achievement of the chain goal. Since the early 1990s studies of the literature have highlighted many benefits for collaboration in supply chains, for decreasing costs, inventory levels and lead times, and to increase service levels, product quality and incomes (Birendra, Srinivasan, & Xiaohang, 2007; Bowersox, 1990; Buzzell & Ortmeier, 1995; Corbett, Blackburn, & Van Wassenhove, 1999; Huang, Lau, & Mak, 2003; Li, Sikora, Shaw, & Tan, 2006; Núñez-Muñoz & Montoya-Torres, 2009; Ortiz-Vargas & Montoya-Torres, 2012; Rodríguez-Verjan & Montoya-Torres, 2009; Simatupang et al., 2002). In real industrial practice, some enterprises belonging to several industrial sectors, such as construction, automotive industry, retail, electronics, etc. have experienced the benefits of collaboration structures with other member of their supply chains (Chopra & Meindl, 2001; Rodríguez-Verjan & Montoya-Torres, 2009; Simatupang & Sridharan, 2001). However, even if all the benefits of collaborating are well-known, other studies in literature have reported some difficulties for implement such strategies (Green & Inman, 2005; Holweg, Disney, Holmström, & Smáros, 2005; Narus & Anderson, 1996; Sheu, Yen, & Chae, 2006; Simatupang & Sridharan, 2008; Spekman, Kamauff, &

Myhr, 1998). Among the principal barriers for the implementation of collaboration structures we can find: lack of technology, confidence, decision about with who collaborate, misunderstanding of concepts, principles or elements of such collaboration, different goals among enterprises, excess of (unnecessary) information and knowledge about how to use the information, inaccurate information systems and even resistance to changes (Barrat & Oliveira, 2001; Barrat, 2004; Fawcett & Magnan, 2002; Ireland & Bruce, 2000; McCarthy & Golocic, 2002; Mentzer et al., 2001; Moberg, Speh, & Freese, 2003; Sabath & Fontanella, 2002).

During the last 13 years, a lot of research about collaboration and information sharing issues in supply chain management has been published, making it relevant to conduct a review in this area. Particular focus will be given to the dyadic structure, as we will see later in this section, as this structure facilitates the understanding of much more complex supply chains.

1.1. Previous literature reviews and positioning of this paper

The current paper looks to build upon previous literature reviews focused on the impact of collaboration and information sharing on the management of dyadic supply chains. The most complete review published up to date, to the best of our knowledge, is the one of Huang et al. (2003). These authors reviewed 69 research papers published between 1991 and 2002 inclusive, mainly focusing on Operational Research and Production/Operations Management oriented journal (81.5% of works they reviewed) according to the classifications presented in the literature (for example, Stonebraker, Gil, Kirkwood, & Handfield, 2012; Winter & Knemeyer, 2013). Those works mainly implemented mathematical and simulation models to assess the effectiveness of collaboration and information sharing between the members of the supply chain. The present paper additionally considers papers published up to 2012, and includes journals from with a business-oriented management perspective of logistics and supply chains.

Other reviews have also been proposed in the literature. Terpend, Tyler, Krause, and Handfield (2008) presented a review of works published between 1986 and 2005 studying the supplier-buyer relationship. Their focus was on only four U.S.-based academic journals, which are mainly focused on the strategic and management perspective. Again, a difference from our review is twofold: first, the present paper considers more recent works (published after 2005); and second, the present review considers both operational-oriented and management-oriented journals. Kumar and Pugazhendhi (2012) proposed a short review on information sharing issues in supply chains from the technological perspective. Their paper has 36 references published between 1996

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