Becoming Smart, Innovative, and Socially Responsible in Supply Chain Collaboration

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Goknur Arzu Akyuz
University of Turkish Aeronautical Association, Turkey

Guner Gursoy
Okan University, Turkey

INTRODUCTION

Collaboration is rapidly emerging as an essential part of doing successful business (British Retail Consortium 2014). It has become the key to effectiveness, agility and competitiveness within the global dynamics of digital economy where competition is no longer between organizations but between supply chains (SCs), (Kim, 2006; Trkman et al., 2010; Akyuz & Gursoy, 2010, Cao & Zang, 2013; Lehoux, D'Mourse & Langevin, 2013). Because of various concerns; including rising resource costs, financial shocks, disruption in SCs, changing consumption patterns, emerging new business models and environmental issues; organisations are forced to manage an ever-changing business context. Such systemic challenges are evidently driven by multiple factors, and they cannot be resolved by any single organisation. Collaboration, two or more organisations working together to address common problems or develop opportunities, has the potential to create an overarching change for long-term sustainability. Hence, enterprises are turning to collaboration more and more to address problems too complex to deal with on their own (British Retail Consortium, 2014).

Collaboration in the context of SC is an amorphous and meta concept that has been interpreted in many different ways by both organizations and individuals. Academic definitions mainly focus on the business-to-business (B2B) internet-based technologies; while practical definitions have a wider scope (Wang, 2006).

Arshinder & Deshmukh (2008) list collaboration definitions in their study as: (a) joint planning, joint product development, mutual exchange of information and integrated information systems, cross coordination on several levels in the companies on the network, long-term cooperation and fair sharing of risks and benefits, (b) two or more independent companies working jointly to plan and execute supply chain operations with greater success than when acting in isolation, (c) a win-win arrangement to provide improved business success for both parties, (d) a strategic response to the challenges that arise from the dependencies.

Obviously, the concept is multi-dimensional, going far beyond simple transactional integrity among systems, and involving strategic-level exchange of information and decision making. It is also well-proven to be directly related with various ideas such as SC cooperation, integrity and visibility. In this context, both coordination and integrity refer to tight process couplings among SC partners. The term integration means the unified control of different processes, putting more emphasis on central control and ownership (Cao & Zang 2011), and collaboration puts more emphasis on governance through relationship.

The related literature provides sound support for the benefits accruing from collaboration; for the positive correlation with SC performance, and critical SC capabilities such as agility and flexibility (Akyuz & Gursoy, 2010; Sanders, 2007; Arshinder & Desmukh, 2008, Cao & Zang 2013, Wiengarten *et al.* 2013; Kim & Nettesine, 2013,

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Cao & Zang 2011). When organisations come together, they can combine their resources, knowledge, insights, creativity and collective leverage to create radical change in critical business areas. Undoubtedly, process of learning to collaborate may take time; it may seem complex and unfamiliar and require passion, commitment and investment; but the achievements can be significant (British Retail Consortium 2014).

In this chapter, the confusion, interchangeable and ambiguous use of collaboration terminology is explored via literature taxonomy, and a collaboration maturity model is introduced. In the next section, the relationships and precedence among collaboration-related terminologies, as well as existing maturity models are discussed by highlighting the ambiguities and interchangeable use. Then, the concepts of smartness, innovation and corporate social responsibility (CSR) are discussed as the key themes for the current understanding of SC collaboration. Motivated by:

1. The lack of consensus on terminology;
2. Maturity stages of the existing maturity models; and
3. The critical importance of smartness, innovation and CSR, a conceptual model is developed based on the maturity model offered in Akyuz, Gursoy & Celebi (2014).

The conceptual maturity model:

1. Provides a mapping of the model stages onto various SC processes;
2. Offers process-based, staged and precise descriptions of chain-level evolution of collaboration;
3. Covers advanced forms of system-level collaboration; and
4. Explicitly treats smartness, innovation and CSR in relation to CSR.

Background - Terminology and Existing Maturity Models

Extant literature related with SC collaboration highlights that it is closely interrelated with the terms: communication, cooperation, coordination, integrity, partnership, visibility, trust and synchronization. The terms of "cooperation", "coordination", "collaboration" and "integrity" are interchangeably used and sometimes refer to different evolutionary stages along a continuum of dependency among SC partners. Akyuz, Gursoy & Celebi (2014) provides a comprehensive discussion on this confusion in terminology.

Thompson & Sanders (1998) put forward the continuum of 'competition→ cooperation→ collaboration →coalescence', considering the term "*coalescence*" as the highest level of integrity and joining forces. Kim et al. (2004) refer to the Speakman et al. (1998), which treat "cooperation", "coordination" and "collaboration" as three different stages to define the transition to "collaboration". In their classification:

1. Cooperation refers to long term contracts;
2. Coordination is associated with information linkages; and
3. Collaboration is associated with joint planning, integration and sharing.

The distinction of "intra- and inter-organizational coordination" is emphasized while discussing the opportunities of the internet-based information systems (Akyuz & Rehan, 2009; Chen & Chen, 2005; Arshinder & Deshmukh, 2008; Kelle & Akbulut, 2005). This transition emphasizes that ability to cooperate leads to coordination, which in turn evolves into the collaboration across SC partners. "Joint planning" appears as a critical ability which determines collaboration, and the term "integrity" is highlighted.