

# Chapter 69

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

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### ABSTRACT

*Collaboration is one of the key themes defining the competitive advantage of supply chains (SCs). In the web-based global business arena witnessing Industry 4.0, collaboration across SC partners has to be smart, innovative, and socially responsible to form value-creating networks. After exploring various concepts related with SC collaboration, this chapter proposes a conceptual maturity model for SC collaboration in increasing levels of integrity and collaboration scope. The model is unique in establishing a standardized conceptual base; providing a systematic, process-oriented, and holistic view for multi-partner SC maturity; offering precise mapping of SC processes onto stages with full process coverage; extending CPFR model; defining maturity stages for advanced, strategic collaboration types (like collaborative performance and risk management, collaborative systems assurance and development, collaborative innovation); explicitly incorporating smartness, innovation, and social responsibility concepts; and treating relatively recent terminology such as “virtual networks” and “coalescence.”*

### 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

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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, 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:

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