Chapter 69
The Role of Cloud Computing in Global Supply Chain

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ABSTRACT
This chapter reviews the role of cloud computing in global supply chain, thus describing the theoretical and practical concepts of cloud computing and supply chain management (SCM); the significance of cloud computing in global supply chain; the overview of electronic supply chain management (e-SCM); and the organizational information processing theory within global supply chain. The utilization of cloud computing is necessary for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and achieve continuous success in global business. Therefore, it is essential for modern organizations to examine their cloud computing applications, develop a strategic plan to regularly check their practical advancements, and immediately respond to the cloud computing needs of customers in global supply chain. Applying cloud computing in global supply chain will extremely improve organizational performance and reach business goals in the digital age.

INTRODUCTION
For modern organizations competing in the greatly potential markets, the search for new sources of competitive advantage is necessary in order to sustain in the social media age (Kasemsap, 2015). In the globalized world with its ever-changing economic conditions, enterprises are urged to react on threats and opportunities in an adjustable manner (Krumeich, Weis, Werth, & Loos, 2014). The use of cloud computing technology is increasing among customers and information management development focuses on the increased cost and time efficiencies derived from using innovative services (Ratten, 2014). Supply chain management (SCM) is a highly integrative discipline, which is jointly connected with key management functions such as strategic management, marketing, and finance (Kaufmann & Saw, 2014). Stable supply chain processes in a dynamic environment support enterprise competitiveness (Ivanov & Sokolov, 2012). Supply chain practically shapes competitive management prospect (Christopher, 2012).

Cloud computing has become a rising paradigm in the information and communication technology (ICT) industry (Hung, Bui, Morales, Nguyen,
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& Huh, 2014), with wide benefits extending to diverse areas including cost cutting, better management of business (Sagar, Bora, Gangwal, Gupta, Kumar, & Agarwal, 2013). Cloud computing has been envisioned as key technology to achieve economy of scale in the deployment and operation of information technology (IT) solutions (Chen, Wu, & Vasilakos, 2014). Cloud computing is an ascending technology that has introduced a new paradigm by making a computational model possible (Durao, Carvalho, Fonseka, & Garcia, 2014). Cloud computing is the new era of information processing and has proved its benefits in high scalability and functional diversity (Shon, Cho, Han, & Choi, 2014). Cloud computing has emerged as the latest development in IT (Yoo, 2011) that embodies economic advantages in terms of the increased efficiency in modern organizations (Gottschalk & Kirn, 2013).

Cloud computing is the modern computing paradigm that transparently distributes ICT resources (Ranjan, Buyya, Leitner, Haller, & Tai, 2014). Cloud computing is functionally utilized by a large number of innovative organizations (Rajaraman, 2014). Cloud computing produces the high quality, on-demand services with service-oriented architecture (Wang, Liu, Sun, Zou, & Yang, 2014). Cloud computing services have become more cost effective and technically flexible than traditional solutions (Stieninger & Nedbal, 2014). Cloud computing has the potential to reshape the landscape of the IT industry (Yu, Sheng, & Han, 2013). The dimension of IT relates to a high dependency of modern organizations regarding information system infrastructure (Bajgoric, 2014). The Internet has been employed in multidimensional ways in various supply chains (Durowoju, Chan, & Wang, 2011). Cloud computing for customers is an increasing subject of discussion in business world because of its rapid emergence as an innovative marketing technology (Stein, Ware, Laboy, & Schaffer, 2013). There is a global increase in the utilization of cloud computing services as more people use the Internet to access, transfer, and store electronic information (Leymann, Fehling, Mietzner, Nowak, & Dustdar, 2011).

SCM as philosophy has both theoretical and managerial implications, and is positively related to organization’s orientation, recognizing the way that the organization integrates supply chain implications throughout decisions that the organization makes (Ellram & Cooper, 2014). As the industrial environment becomes more competitive, SCM has attained growing attention from practical and academic societies as an essential discipline (Shafieezadeh & Sadegheih, 2014). Organizations adopt cloud computing technologies that align with their SCM strategy and enable them to generate organizational capabilities effectively utilized to facilitate business performance (Wu, Cegielski, Hazen, & Hall, 2013). As organizations look for ways to enhance competitive advantage by leveraging their supply chains (Barney, 2012; Hunt & Davis, 2012; Priem & Swink, 2012), many IT solutions have been realized to improve management effectiveness and supply chain process performance (Fawcett, Wallin, Allred, Fawcett, & Magnan, 2011). Cloud computing helps organizations to maintain the alignment between supply chain initiatives and IT, thus promoting organizational agility (Vickery, Droge, Setia, & Sambamurthy, 2010).

The strength of this chapter is on the thorough literature consolidation of cloud computing in global supply chain. The extant literature of cloud computing in global supply chain provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of cloud computing in global supply chain to appeal to different segments of cloud computing in global supply chain in order to maximize the business impact of cloud computing in global supply chain.