Chapter 39
Evaluation of Cloud System Success Factors in Supply–Demand Chains

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ABSTRACT

Cloud systems could help companies to optimize the structure and operation of supply chain and improve organizational performance into a higher level. In this chapter, the advantages and basic operation methods of cloud computing are analyzed, and the essential factors that contribute to the success of the cloud system are evaluated through some business examples. Supply chain firms rely on cloud system to share resources and to achieve integration through the Internet. Cloud systems could transform customer relationship and internal operation to achieve sustainable competitive advantages. Cloud services are providing the ability to share information to the supply chain at any time anywhere. This chapter explores the relationship between supply chain organization and cloud computing. This chapter also discusses the benefits and advantage to evaluate of cloud system in successful factors.

INTRODUCTION

The continuous development of market economy, the increasing competition among the companies has led supply chain firms to seek computing system models to optimize their supply chain activities. Companies are facing more and more challenges, as world economy experiences faster globalization and increasing informational changes. Current business environments require supply chains to be more flexible to respond to multiple types of customer's individual requirement and the fluctuating market demands (Soliman, 2013a).

Cloud Computing allow companies to use timely technology services by using pay-per-use basis. It helps them to accelerate their technological agility and responsiveness in the global business environment (Carcary, Doherty & Conway, 2014). Cloud systems models enable omnipresent, convenient, timely network approach to a shared pool of configurable computing resources, like networks, storage,

and services, that can be rapidly assigned and distributed with minimal management effort or service provider interaction' (Cheng et al, 2014).

While cloud systems are seen as new technology that can provide several advantages, both strategic and operational, its rate of growth has not been as fast as expected. However, many supply chains have recognized the capability of cloud systems to generate new business models and promote sustainable competitive advantage (Berman et al 2012).

Success factors from a strategic perspective include selecting the right type of cloud system, taking into account current business processes, scalability and agility, visibility, and effective partner realtionship and sustained use. However from a commercial perspective the factors should also include the location and legal entity of cloud system providers, in addition to agreements and service levels (Soliman, 2014a).

Cloud computing system adopts technologies such as platform management technology, data management technology and standardization technology and virtualization technology in supply chain collaboration management (Animesh & Megha, 2013). Flexibility of complex supply chain is a major benefit in efficient supply chain management.

In comparison with traditional computing system, cloud computing has the ability able to expand power, being deployed rapidly to support requirement and reduce to support infrastructures. Organizations can control the capacity more accurately through using cloud system (Animesh & Mega, 2013).

In current economic environment, cloud system integrates all the resources in a functional structure to improve the effectiveness and competitiveness. (Cloud to success, 2013). Application of cloud computing system is the future development trend of the supply chain. The use of cloud system and technology can reinforce the comprehensive and efficient integration of internal and external resources. In global supply chain tendency, cloud system could manage the supply chain involved different suppliers and provide value-added, professional and effective services for customers (Soliman, 2014b). Cloud computing is all about uniformity and computability. All things around and related with the supply chain are all acting as one, driven and controlled by cloud system. However, cloud system still has some difficult to be adapted in organization. There are potential issues like the inadequate understanding about the span, scope and implementation of cloud system. While cloud system brought many benefits, the success factors are for the organizations to use the IT-related capability to leverage cloud-provided resources (Soliman, 2014c). The IT capabilities of organization, network technologies are all provide a healthy environment to develop the constantly competitive advantages. Management and market factors being equal, organizations that develop and strengthen their IT-related capabilities are likely to realize greater value from their investment compared to organizations that implement only a cloud resource (Garrison, Kim & Wakefield, 2012). Not all the companies realize that cloud system is imperative under such a business circumstance. The application of cloud computing system still needs to deploy and keep improvement constantly.

Cloud systems in supply chain management involve five components included forecasting and planning, sourcing and procurement, inventory management, product development, and logistics management. According to Gutierrez (2013) the current trend is the movement to outsourcing of the supply chain IT systems to the "clouds". The essential factors for the success of cloud system implementation could be grouped into three clusters of factors including Technical, Managerial and Organizational factors (Soliman, 2012).

Technical Success Factors: Technical capability represents physical assets (such as computers, cluster servers, and data-bases) or numerous resources safely to provide a flexible and scalable foundation of the company. Cloud system could provide the service that is securely accessed by its end users. Cloud com-

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