Chapter 6
Managing the Cloud for Information System Agility in Organizations

ABSTRACT

In 2007, cloud computing was introduced to the IT dictionary. The theme is attracting growing interest from both the IT world and the business players who need to enhance information systems agility, reduced costs, or reduce dependence on internal IT teams when they are judged too slow. However, the fact that cloud computing, as presented by providers, increases the agility is unclear. Business managers, IT professional, and academics are querying the relationship between cloud computing and IT agility. This chapter aims to understand cloud computing's role in improving IT agility by introducing recent studies in the IS and IT management literature. This chapter argues that cloud computing impact IS performance by organizational capabilities (agility). The authors also propose a conceptual framework to improve IS agility by cloud computing based on DevOps. One of the primary motivations of this research is the lack of fieldwork when considering how cloud computing improves information systems agility.

DOI: 10.4018/978-1-5225-7826-0.ch006

INTRODUCTION

Since 2007, the year that the two leaders in cloud computing IBM and Google have invested in the construction of large data centers that can be used by students over the Internet to remotely program and research, known as cloud computing (Lohr, 2007). The cloud infrastructure was also recognized as a cost-effective model for delivering information services, reducing IT management complexity, promoting innovation and improving real-time responsiveness. For many organizations (Buxmann, Diefenbach, & Hess, 2015) and countries (Changchit & Chuchuen, 2018), cloud infrastructure has served as a platform for developing innovation and a highly qualified human resource capacity. In 2011, the US federal government estimated that 20 billion dollars of the IT investment budget, which is 80 billion dollars, would be a potential target for cloud computing solutions migration (Metheny, 2013).

Cloud Computing has had a major impact on information technology (IT) during recent decades as leading companies such as Google, Amazon and Microsoft have focused on providing more efficient, secure and cost-effective cloud platforms for organizations that are trying to redefine their business models using the concept. Cloud Computing is one of the major technologies that has revolutionized the world of computing. The IT service delivery model provides significant benefits. This enables today's organizations to adapt proactively their IT infrastructure to faced rapidly changing environment and business requirements. Importantly, it significantly reduces the complexity of IT management, enabling more use of IT. Cloud-based services offer also interesting reuse opportunities and design challenges for application developers and platform providers. Cloud Computing has therefore generated a lot of enthusiasm among technologists and researchers in general.

For many organizations, cloud computing can be a driving factor of change, enabling them to make optimal use of information and communication technologies without investing massively at the outset and avoiding the risks of getting stuck with obsolete technologies. With cloud computing, providers can provide an information and communication technology infrastructure as a service to end customers (Fernando, Loke, & Rahayu, 2013; K. H. Kim, Beloglazov, & Buyya, 2009). By using cloud computing, organizations can reduce the cost of information and communications technology acquisition and maintenance, attracting new customers, increasing revenue, preserving profitability, and improving agility (Goyal & Dadizadeh, 2009; Sean