Chapter 13
Cloud Computing Deployment Model for Ethio Telecom

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ABSTRACT

Successful adoption of cloud computing requires identifying a cloud computing deployment model that best fits its needs. This research aims to propose a cloud deployment model that fits the need of Ethio telecom and to assess its readiness to adopt the potential deployment model. Data were collected via questionnaire survey, document analysis, and interviews. A document analysis is conducted to understand Ethio telecom infrastructure and services. A questionnaire was used for conducting a readiness assessment of Ethio telecom to adopt the proposed model in three major phases using Gartner Magic Quadrant. Result of the assessment shows that core business/competitive position is a barrier to six IT services and applications; standardization is a barrier to four IT services and applications, compliance is a barrier to four IT services and applications, service type is a barrier to four IT Service and applications, and importance or availability are barrier to three IT Service and applications. Based on the results, recommendations for practice are forwarded for management intervention.

BACKGROUND

Cloud computing (CC) represents a paradigm shift in the way information technology resources and services are delivered (Sabi et al., 2016). It is defined by the US National Institute of Standards and Technology (NIST) as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (examples - networks, servers, storage, applications, and services) that can be rapidly provided with minimal management effort or service provider interaction (Mell and Grance, 2019). It is especially attractive to organizations due to its many advantages which include the high-performance capabilities it offers, its low entry costs, universal access, flexibility, availability, and scalability (Zhang et al., 2010).

Adopting cloud computing changes not only the technology used by an enterprise but also how business operations are managed (Raj and Periasamy, 2011). Besides, switching enterprise resources to a cloud involves decisions at the strategic and operational levels and could potentially impact all aspects of the firm (Andrikopoulos et al., 2014). However, with the advantages offered by cloud computing, both strategically and operationally, there is still a relatively slow adoption rate. Slow adoption of cloud computing may be because of some of the potential pitfalls of the technology such as security concerns, failure downtime resulting from server maintenance or unforeseen outages, implementation complexity and compatibility issues (Low et al., 2011). Data lock-in and data ownership related issues are also concerns that firms face during cloud adoption (Alvarez, 2011).

The migration of IT services to the cloud can reshape the enterprise's IT landscape and can heavily impact its business strategy and performance (Birhane, 2018). Switching the service to the wrong cloud model can also result in low performance. Since there are several cloud computing deployment models that firms can adopt and each model architecture offers different advantages and constraints, many firms find it as a great decision challenge to identify the right model that will optimally address their business needs [8]. Hence, selecting the wrong cloud deployment model for cloud service can be operationally costly and potentially could harm a business strategy. Besides the potential risks and the decision concerns, there is little guidance available from industries and scholars on how to adopt this technology from the firms' context (Ferguson-Boucher and Convery, 2011).

Currently, cloud service providers are offering a wide range of cloud-based ICT solutions. However, the acceptance and usage of these services in Ethiopia are slow and discouraging. To ensure successful adoption of cloud computing and to properly manage changes that occur because of cloud computing, an organization needs to identify what kind of cloud computing deployment model fits the organization's needs and what must be fulfilled before adopting the potential deployment model (Rountree and Castrillo, 2014).

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