

Chapter 117

Understanding Intentions to Switch Toward Cloud Computing at Firms' Level: A Multiple Case Study in Tunisia

Zouhour Smaoui Hachicha

Sfax University, Sfax, Tunisia

Karim Mezghani

Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia & University of Sfax, Tunisia

ABSTRACT

This research aims to study intentions to switch toward cloud computing at firms' level. As a new way to deploy information technologies (IT) within firms, switching toward cloud computing remains a hard decision that depends on several contextual factors. While several studies have focused mainly on technological aspects, this research adopts a multidimensional perspective by combining the Technology-Organization-Environment (TOE) framework with a two-factor theory perspective. Doing so, the authors attempt to propose a research model that can be useful to deeply understand how firms perform when thinking about switching toward cloud-based solutions. A multiple-case study within five Tunisian firms has been conducted to contextualize the research model and give it more explanation power. The Tunisian context should be interesting, as cloud computing adoption is a new topic that is not sufficiently studied in developing countries, particularly in those characterized by an economy in transition. Data have been collected by semi-structured interviews and coded using the Nvivo software. The analysis of interviews content shows that the expected switching benefits and risks play a mediating role between TOE factors and intentions to switch toward cloud computing. Indeed, the authors found some different results within cases revealing the dual effects of technology, organization, and environment factors on intentions by generating different expected switching benefits and risks. In light of these results, some recommendations are proposed to decision makers in this area.

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1. INTRODUCTION

The development of smartphones and the use of Web-based applications, combined with the specific benefits of cloud computing, push many organizations to adopt cloud-based solutions. According to Ried and Kisker's (2011) conservative estimates, the global cloud computing market will reach \$241 billion in 2020 (Cheng et al., 2016).

Cloud computing provides "cost advantage, scalability, flexibility, access of the shared resources automatic updates and upgrades to the organization" (Gangwar et al., 2015, p. 108). By the way, computing resources could be accessed on an as-needed basis from any connected device and location over the Internet (Laudon and Laudon, 2012). The vendor is responsible for running and maintaining the cloud-based solution and correcting defects (Choudhary and Zhang, 2015).

Besides these drivers, it is argued that many software vendors "are in the process of developing hosted or cloud solutions as the market moves to a cloud environment" (Arnesen, 2013, p. 47). Thus, many firms would be likely "pushed" to switch toward cloud computing, especially as this switching would not necessarily involve additional investments on IT infrastructure (Mezghani, 2014).

However, cloud computing is still presented as a risky alternative, which makes many firms reluctant to switch. According to Chen and Wu (2013), privacy, security, and switching costs remain major barriers to adopting the on-demand model. Indeed, when adopting cloud-based solutions, firms accept to put data on a third party, so many managers would perceive that the confidentiality and security of business data would not be guaranteed (Benlian and Hess, 2011). Considering these benefits and risks, firms find it difficult to decide about switching toward cloud-based solutions. The firms' readiness degree and the environmental context play also important roles in such decision. According to Wu et al. (2016), the adoption of cloud computing is an organizational strategic decision-making.

Tunisian firms seem concerned with this switching challenge, as they operate in an economy in transition. In fact, Tunisia is a developing country facing a transition context that is characterized by an insecure environment with unexpected events, financial problems, less trust in external partners and survival difficulties for firms (Chaabouni and Very, 2015; Mzid, 2015). On one hand, cloud computing could be a real alternative for Tunisian firms to develop their business by offering them, according to Schniederjans and Hales (2016), the option of virtualization positively associated with economic performance. On the other hand, such computing remains a risky choice, considering the current additional global pressures. Moreover, although cloud computing can be considered as a driver for improving an organization's competitiveness, cloud adoption concerns are not sufficiently studied in the Arab context (Mezghani and Ayadi, 2016). Thus, this research attempts to give an understanding of why firms may switch or not toward cloud computing by developing a research model and then conducting interviews within five Tunisian firms (which have not adopted cloud computing yet).

From a theoretical perspective, proposing a research model could give a deep understanding about factors explaining intentions to switch toward cloud computing at a firm's level. Indeed, "some studies focus on the opportunities and risks of adopting cloud computing but without going into details to importance and effectiveness of adoption factors" (Gangwar et al., 2015, p. 107). The decision of focusing on a firm's level is explained by the fact that individual intentions may be insufficient to deeply understand cloud adoption. While several studies have focused mainly on technological aspects, this research adopts a multidimensional perspective by combining the TOE framework with a two-factor theory standpoint. Within cloud computing literature, researchers have mainly concentrated on technological aspects and

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