Understanding the Drivers of Cloud-Based Service Adoption and Their Impact on the Organizational Performance: An Indian Perspective

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ABSTRACT

This study aims to understand the drivers of cloud-based services (CBS) adoption and its impact on the performance of Indian organizations. The conceptual model was developed using diffusion of innovation theory, technology-organization-environment framework, transaction cost economics, technology acceptance model, and balanced scorecard model. This quantitative study collected data from IT experts of 334 Indian organizations using questionnaire survey method. Data analysis using structural equation modelling reveals that among six identified drivers, credibility of cloud service provider has the strongest impact on the decision to adopt CBS, followed by top management attitude, economic flexibility, perceived usefulness, and relative advantage. While perceived ease of use of the CBS was found statistically not significant. Conversely, the impact of CBS adoption was found strongest on the financial performance of the organizations. Further, CBS’s adoption drivers and their impact on performance vary significantly on the basis of age and size of the organizations.

KEYWORDS

Adoption, Balanced Scorecard Model, Cloud Computing, Organizational Performance, Technology Adoption

1. INTRODUCTION

Information Technology (IT) is an integral part and a fundamental to support to sustain and grow a business. Cutting-edge IT tools and Web-based technologies can help organizations in improving their performance by cutting the cost of production as well as distribution, offering innovative products or services, and living up to the customer expectations by delivering high standards of customer service. Adoption of innovative technologies like cloud-based services (CBS) can help organizations in ensuring the seamless and timely flow of information between various business processes and in developing their capabilities. These organizational capabilities can be defined in terms of effective execution of business processes, workflow coordination, and resource optimization (Bhardwaj, 2000; Rai et al., 2006).

Market studies conducted during the last four to five years point out that organizations around the world are saving up to 36% of their IT costs by adopting cloud-based IT services (Versace & Perry, 2013). According to a study conducted by Zinnov Management Consulting, the adoption of CBS will drive the growth of the Indian domestic IT market, which is estimated to touch $67 billion

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by 2020 (Zinnov, 2015). Further, the Indian government’s initiatives for a digital India and variety of public and private cloud-based IT offerings from cloud service providers are considered as the main reasons why CBS’ adoption is gaining momentum in India. Thus, it is apparent that more and more Indian organizations will move to the cloud-based platform. Consequently, the study seeks to understand what factors drive the decision to adopt CBS, and how the cloud adoption impacts the overall performance of Indian organizations. With this aim, the study seeks to answer following research questions:

RQ 1: What are the factors affecting the decision to adopt cloud-based services?
RQ 2: What is the impact of cloud-based services’ adoption on the organizational performance?

The remainder of this paper is organized as follows. Section 2 introduces the concept of Cloud Computing as well as the notion of organizational performance with reference to this study. Section 3 provides the theoretical background used to develop a conceptual model to answer the research questions mentioned above. Section 4 specifies the constructs of the conceptual model as well as the hypothesis developed. Section 5 presents the research methodology, followed by section 6 that explains the data analysis done using the two-step structural equation modeling (SEM) approach. Section 7 discusses the results, and in section 8, we present the significant contribution of this study to research and practice. Section 9 summaries the conclusions and limitations of the study as well as future research possibilities.

2. LITERATURE REVIEW

2.1. Cloud-based Services

CBS bring a paradigm shift in the way IT is deployed and managed in an organization. These IT services can be provisioned on demand according to the technical requirements of the organization, be it software, hardware, database, or network. Broadly these IT services are adopted either using the Software-as-a-Service (SaaS), the Platform-as-a-Service (PaaS), or the Infrastructure-as-a-Service (IaaS) model of cloud computing.

A review of the literature reveals that the phenomenon of cloud computing or CBS has been studied from various perspectives, which can be grouped into studies related to conceptual understanding, technology issues, business aspects, and domain-specific issues of CBS (Yang & Tate, 2012; Yang et al., 2005). Further, studies look at the business aspects of CBS represented issues related to the adoption, costing, pricing, trust, privacy, and risk associated with CBS (Yang & Tate, 2012; Yang et al., 2005). This study is focused on the business aspects, specifically the adoption of CBS by organizations. Thus, the literature related to cloud-based service’s adoption was reviewed extensively. A review of the literature provides evidence of both qualitative as well as quantitative studies conducted to understand the adoption of CBS from different perspective in various countries. For example, the adoption of CBS has been studied in order to understand the benefits as well as the challenges (Alshamaila et al., 2013), opportunities and risks associated with Software-as-a-Service (SaaS) adoption (Benlian & Hess, 2011), the issue of trust faced by organizations (Wu et al., 2011), and cloud computing acting as an enabler for supply-chain management systems (Cegielski et al., 2012).

There are many reported drivers of CBS adoption at the organizational level in the literature. The majority of the studies have identified cost saving as the key driver of CBS adoption, with reference to the implementation and maintenance costs of IT infrastructure (e.g., hardware, software, and network). In addition, the pay-per-use feature of CBS helps organizations in controlling the expenditure on CBS because IT expenditure can easily be altered based on the high or low demand of IT services in an organization (Janssen & Joha, 2011, Oliveira et al., 2014). Other than cost, some of the drivers which were identified significant in cloud computing adoption studies in an organizational context...
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