

Technology adoption in diffusion of innovations perspective: introduction of an ERP system in a non-profit organization

Marília Queiroz Miranda, Josivania Silva Farias, Carolina de Araújo Schwartz,
Juliana Pascualote Lemos de Almeida*

Universidade de Brasília (UNB), Brasília, DF, Brazil

Received 26 October 2015; accepted 5 February 2016

Available online 12 May 2016

Abstract

This study aimed to describe the adoption process in light of the diffusion of innovations and technologies of the management system enterprise resource planning in a non-profit organization, considering inhibiting and facilitating factors of this process and innovations or arising benefits. A descriptive qualitative approach was conducted through a case study. Triangulation of researchers was used in the content analysis of the empirical evidences obtained through 17 structured interviews. It was concluded with this study that the facilitating factors outweigh the inhibiting factors of the adoption of the system. With regard to innovations arising from the adoption of this technology, it was found that there were process and administrative innovations through the implementation of new processes, practices and structural organization, which resulted in the effective reach of the organization's objective, with respect to the compliance for business customers which had as goal to adjust themselves to the standards of minimum quotas for hiring young apprentices.

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Keywords: Technology adoption; IT; Innovation

Introduction

The adoption of a new technology, which can result in innovation, is justified by the goal of “changing the organization's status quo in search of improvements” translated in offering a product or service satisfactory to the customer (Dias, 2000, p. 52).

Seeking improvements in order to remain competitive in the market, organizations today have found in the reorganization of its processes an alternative to meet cost-cutting requirements and improvement of its internal resources. Thus, the information system through information technology (IT) is an aid in the

search for solutions and to identify opportunities for innovation and development (Mussi & Canuto, 2008).

In this regard, Farias, Guimarães and Vargas (2012, p. 27) state that “innovation in organizations usually involves changes in the culture and organizational behavior, resulting in change.” However, the change may not be committed to adopting new technologies and innovations do not take into account the essential steps to effect this process. The diffusion process of technologies and innovations is complex and, according to Rogers (1983), follows a set of stages that will be discussed in this paper. The conceptual framework for the decision-making process of innovations proposed by Rogers (1983) was adopted because this theoretical framework can also be used in the study of how individuals, groups or organizations adopt and diffuse technologies that can result in the proliferation of innovations in the case of be achieved demonstrable benefits. The new technologies have caused significant changes in the organizational production (Motta, 2001) and those changes can be in episodic

* Corresponding author.

E-mail: juliana.pascualote@gmail.com (J.P.L. de Almeida).

Peer Review under the responsibility of Departamento de Administração, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo – FEA/USP.

<http://dx.doi.org/10.1016/j.rai.2016.02.002>

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or continuous order, thus creating conditions for the occurrence of innovations (Weick & Quinn, 1999).

Venkatesh et al. (2003) indicated the need for further research focusing the process by which individuals adopt technologies and the factors influencing its use, as well as in understanding of the degree to which information systems (IS) and information technology (IT) are perceived as successful (such as ERP) for organizations, in the adoption of technologies perspective.

This study may contribute to the extension of knowledge about the adoption of information systems and technologies (IT) applied to the management of nonprofit organizations, proposing the improvement of the service offered to society. Often organizations have neglected the generation of learning and innovation, do not taking into account that these two capabilities can be fundamental in the search actions for sustainability in the market (Mendonça & Araújo, 2005).

Considering the above-mentioned issues, this study aimed to describe, in view of the diffusion of innovations and technologies, the adoption process of an enterprise resource planning (ERP) a management system in a non-profit organization, considering hindering factors and facilitators of this process and possible innovations or gains.

Theoretical approach

Technology is a “potentiator source of possibilities and options” (Kelly, 2012, p. 42), allowing savings of time and costs to organizations. Its technique nature and method are closely associated to knowledge that when applied to practice can provide competitive advantage for companies in the economic scenario.

Zawislak (1994, p. 3) addresses the technology through knowledge, that is, of “new ideas, new appliances, new methods, new techniques and new technologies” that influence and generate development. Knowledge is linked to the nature of technology, and can be respected by *techne* and *episteme*, being the *techne* the know-how, i.e. an implicit knowledge for the practice (*savoir-faire*) about something and *episteme* the universal, analytical, cerebral knowledge, based on theory, impersonal, i.e., that is Scientific. So it has technology as the *techne* that is associated with the *logos*, aiming the logical analysis of phenomena.

Technology can initiate the development and, therefore, organizations adopt new technologies aiming to improve internal processes and, thus, to offer better services and products to the market, remaining themselves competitive (Zawislak, 1994). It is in this perspective that it is presented the information technology (IT), one of the elements related to the information systems (IS) (Laudon & Laudon, 2007; O’Brien, 2004).

The enterprise resource planning (ERP), technology addressed in this research, is a tool which uses modular software packages (or applications) connected to a common central database that allows the integration of the organization in its different business stages (Moura, 2006). Thus, provides information on the production process, allowing decision-making at various levels in an appropriate way and in perfect time, from information integrated into a single database. Once there

is consistency in the data, it is possible to make comparisons, to avoid repetition, redundancy and bureaucracy in the use of information for decision support. This paper proposes that all these benefits can contribute to changes and even innovations.

Technological innovation is the main engine of economic development (Arthur, 2011). At the organizational level, it is one of the bases used to adapt to the rhythm of the market dictated by globalization (Mussi & Canuto, 2008). According to Stal (2007), innovation is the development of a new method, device or machine that, on the market, could change the way in which things happen. This change has to be transformative in bringing improvements (Tigre, 2006). According to the Oslo Manual (OECD, 2010, p. 12), “innovation is clearly part of a business strategy based on transforming ideas into value. Generally, improved goods, services or processes” and can be configured as product, process, marketing and organizational innovation.

Regarding the nature of change, Weick and Quinn (1999) distinguish this in: continuous change (tends to be cumulative, continuous, engaging and emerging, which occurs in day-to-day through upgrades of production processes and social practices) or episodic change (tends to be abrupt, infrequent, discontinuous and intentional, caused by an external factor when organizations face periods of differences and changes from its equilibrium condition). Both create conditions for innovations. Thus, the adoption of IT can promote changes in strategy, culture, processes and structure (Graeml, 2000) which may lead to organizational innovation.

Innovation studies can hardly do without concerns about the spread. This paper argues that, from a theoretical point of view, also in studies on adoption of technologies there is a process or set of stages that establish different schemes relating to chained decisions that can make the technology adopted achieves confirmation (Rogers, 1983), thus contributing to innovation.

Cooper (1990) proposed the Stage-Gate model that shows the process by which a product is designed and have to add to the study of innovation and diffusion of technologies. The model has five phases and five decision points which define the continuity or discontinuity of an innovation project, namely: (1) preliminary investigation to probe the viability of the project; (2) further investigation; (3) product development; (4) testing for validation and (5) release of the product on the market (Cooper, 2000).

Tornatzky and Fleischer (1990) discuss the technological innovation process from different perspectives, namely: the user’s perspective (people), the Working Group, the firm or the environment. Thus divided into two main segments, it has been the developer’s perspective and user’s perspective. Some steps inherent in almost all perspectives and stakeholders are aware of the problems, selection of corresponding standards, and commitment to the adoption, implementation and routinization. There are different elements involved in this process, such as various activities and events, individual decisions and behaviors. This model features from the early stages of developing a new technology to effective use, considering several rounds of feedback, making iterative process.

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