Chapter 7
How to Improve Knowledge Exchange by Using Internet Technologies:
An Empirical Study in Small and Medium-Sized Enterprises

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ABSTRACT

This paper seeks to extend previous studies on the use of Internet technologies and knowledge management by analyzing factors affecting Web knowledge exchange in small and medium-sized enterprises (SMEs). More specifically, by drawing on the technology-organization-environment framework, a model to examine how distinct contextual factors influence Web knowledge exchange in SMEs is developed. The hypotheses are tested by using structural equation modelling on a large sample of Spanish SMEs from different industries. Results suggest that IT expertise and commitment-based human resource practices positively affect Web knowledge exchange, with the latter being the strongest factor in our proposed model. In contrast, a negative relationship is found between competition and Web knowledge exchange.

1. INTRODUCTION

With the advent of the Internet and open standards technologies and the associated reduction of communication costs, firms are migrating toward the Internet platform (Zhu et al. 2006) and cloud computing environments (Hsu et al., 2014). As a consequence, effective adoption and use of Internet technologies have become management concerns (Soto-Acosta and Meroño-Cerdan, 2008; Meroño-Cerdan et al., 2008b).

The characteristics of rapid search, access, retrieval and exchange of information make Internet technology suitable for collaboration and knowledge exchange between organizational members (Lucio-Nieto, et al., 2012). One of the main characteristics of the Internet-based digital platform is that it is founded on the democratization of knowledge, so it facilitates the appearance of natural flows of collaboration and knowledge which, in turn, may favour creativity and innovation (Lucio-Nieto, et al., 2012; Pérez-López and Alegre, 2012). Thus, it is important to understand the key factors that facilitate and motivate the use of Internet technologies for knowledge exchange within firms. Competitive pressure has been defined in various studies as a key determinant of firm's readiness to accept new technology (Bayo-Moriones and Lera-Lopez, 2007; Sila, 2013; Teo et al., 2006). At the same time, the literature considers that technological factors are important drivers for the adoption and implementation of IT innovations (Aboelmaged, 2014; Ramdani et al., 2013). However, beyond technological and the environmental factors, research has recognized the importance of organizational factors in influencing Internet technologies adoption and use (Aboelmaged, 2014; Gu et al. 2012; Lian et al., 2014; Sila, 2013). Organizational factors may restrict or facilitate the implementation and usage of Internet technologies. In this sense, the literature suggests that organizational human resource (HR) practices that create a commitment-based environment influence the interactions, behaviours and motivation of employees (Collis and Smith, 2006). HR practices may therefore affect the organizational social climate that motivates employees to work together and exchange knowledge by being organizational enablers of technology use.

Furthermore, small and medium-sized enterprises (SMEs) are of great importance for economic growth, employment and wealth creation. For example, in Europe, SMEs represent around 99% of the total number of firms (Lopez-Nicolas and Soto-Acosta, 2010). However, studies in the literature tend to examine Internet technology adoption and use in large businesses, with very few recent studies analyzing Internet technologies adoption and use in SMEs (e.g. Aboelmaged, 2014; Chang et al. 2012; Chong et al. 2009; Lopez-Nicolas and Soto-Acosta, 2010; Huy et al. 2012; Ramdani et al., 2013). Findings from studies examining large companies are unlikely to be generalizable to SMEs because of various differences between these types of firms (Bhagwat & Sharma, 2007; Lopez-Nicolas and Soto-Acosta, 2010). Moreover, although businesses have extensively adopted Internet technologies, actual use is an important link to business value and such a link has been found to be especially lacking in SMEs (Devaraj and Kohli, 2003).

To respond to the above-mentioned gaps in the literature, this paper develops a conceptual model, grounded on the technology-organization-environment (TOE) framework, to analyze the key factors that facilitate Web knowledge exchange and it uses a large sample of SMEs from different industries for hypothesis testing. The paper consists of six sections and is structured as follows: The next section presents the literature review and hypotheses. Following that, the methodology used for sample selection and data collection is discussed. Then, data analysis and results are examined. Finally, the paper ends with a discussion of research findings, limitations and concluding remarks.

2. THEORETICAL BACKGROUND AND HYPOTHESES

The technology-organization-environment (TOE) theory (Tornatzky and Fleischer, 1990) has emerged as the main theoretical framework to analyze factors which affect the adoption and use of different ITs including: cloud computing (e.g. Hsu et al., 2014; Lian et al. 2014), electronic business (e.g. Bordonaba-Juste et al., 2012, Sila, 2014; Soto-Acosta and Meroño-Cerdan, 2008, Xu et al., 2004), electronic collaboration

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