An Assessment Method of the Integrated E-Commerce Readiness for Construction Organizations in Developing Countries

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ABSTRACT

A growing volume of literature proclaims the benefits of e-commerce for construction organizations in developing countries. However, it is questionable on what are determinants of a successful implementation of e-commerce in such a context. Furthermore, lacking a model or a method through which to discuss and assist for construction companies in improving their success rate of the implementation. This paper proposed such a method called the “integrated” e-commerce readiness method (IECR). In this method, the role of an organization’s perception of operating environment is highlighted, and e-readiness of an individual organization is considered as an integrated power of the internal and external resources.

Keywords: Construction Organization, Developing Country, E-Commerce, E-Readiness, Integrated E-Commerce Readiness Method (IECR)

INTRODUCTION

The literature has shown the implementation of Internet-based technologies help to achieve business targets, bring about changes in a construction organization, its current practices, systems, processes and workflow (Ruikar et al., 2006). However, Lou (2010) cited that 75% of information technology (IT) investments within construction organizations fail to meet their business objectives, 40% of IT projects failed to deliver tangible benefits, and less than
50% were completed on-time and on-budget. Moreover, the fact also shows that the uptake of e-business in construction industry has been limited and ineffective as in comparison to other industries in both developed and developing countries (Anumba & Ruikar, 2002). There is relatively much systematic information on what drives or obstructs e-commerce diffusion/adoption in construction industry in developed countries but very little in developing countries. Especially, the literature has not paid much attention on the investigation of the determinants of successful implementation of e-commerce in such a context. This paper posited that the notion of e-readiness provides a strong investigating power in such a research. As a result, an “integrated” e-commerce readiness method (IECR) was introduced, which supports better in the investigation of determinants of a successful implementation of e-commerce by construction organizations.

THEORETICAL BASE

According to the review of the literature on e-commerce adoption, the authors found that most of the models and frameworks have not given a comprehensive account for e-commerce technologies’ adoption. Each of them has a certain assumption about the source of impact factors on adoption of IT technologies and provides different explanations on the situation of adoption of e-commerce or IT in general in a specific context. Previous models and studies were developed from a wide variety of perspectives, such as managerial imperative, organizational imperative, technological imperative, environmental imperative; and interactionism (which allows for treatment of multi-perspectives and their interaction in one dynamic framework) (Molla & Licker, 2005a). Models based on these theories have different foci, and are designed to examine different aspects of Innovation by Businesses, such as adoption, diffusion of IT, and the success level of implementation of IT. Molla & Licker (2005a) stated that models that based on the interactionism perspective have more explanatory power. Generally, there is no comprehensive model for every study’s objectives.

In relation to IT diffusion, the e-readiness literature has emerged since 1998. The first efforts in defining e-readiness were undertaken in 1998 by the Computer Systems Policy Project (CSPP) when it developed the first e-readiness assessment tool known as Readiness Guide for Living in the Networked World. There have been many study carried out and acknowledged the role of e-readiness in IT innovation in general. Firstly, Soares & Reis (2008) and Lou (2010) acknowledged together that e-readiness is a dominant factor to the rate of success of e-commerce implementation. A research of Molla (2004) on the impact of e-readiness on the e-commerce success in developing countries found that some 41% of the variation in the success of e-commerce development is explained by organizational e-readiness factors. Secondly, e-readiness assessments can help stakeholders make difficult decisions on how to use scarce resources and how to turn existing strengths into new revenues. E-readiness assessments can also reveal which bottlenecks are worth the investment of time and money to be removed, and can be worked around (Bridges.Org, 2005; Mutula & Van Brakel, 2006; Cid, 2006). Higher levels of e-readiness create a ripple effect and increasing the competitiveness of national economies and enterprises, and their ability to create wealth, and hence, employment and empowerment to local communities, eventually leading to poverty reduction. Finally, in a study on a construction organization’s willingness to participate in e-bidding, Aibinu & Al-Lawati (2010) found that the non-readiness of business partners is one of two the underlying barriers that need to be addressed when introducing e-Bidding. So, a “readiness” assessment was seen as one of the key initial steps for implementing the technologies, such as e-commerce (Neef, 2001; Mutula & Van Brakel, 2006).

However, the literature of e-readiness does not provide a conceptually strong, theory-based model to investigate the success rate in implementing IT in general, e-commerce
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