Absorptive Capacity and ERP Implementation in Indian Medium-Sized Firms

Seema Sharma, Centre for Innovation, Knowledge and Enterprise, The Open University Business School, Milton Keynes, UK

Elizabeth M. Daniel, Management of Knowledge and Innovation Research Unit, The Open University Business School, Milton Keynes, UK

Colin Gray, Human Resources Research Unit, The Open University Business School, Milton Keynes, UK

ABSTRACT

Whilst absorptive capacity has been identified as an important contributor to the effective implementation of IT systems, previous studies have failed to explicitly consider the contribution of individual and organizational knowledge processes. Nine case studies of Enterprise Resource Planning (ERP) implementation were undertaken. The case studies were all undertaken in SMEs in a developing country since this is an important but under researched area for the application of the concept of absorptive capacity. A particular implication of the findings is that firms lacking knowledge of IT implementation cannot simply seek this from external sources but must develop internal organizational knowledge processes if their implementations of IT systems are to be effective. This finding is particularly pertinent to the developing country and SME context of this study, where low levels of experience within the firm and the loss of experienced staff are found to impact on the development of absorptive capacity.

Keywords: Absorptive Capacity, Developing Countries, Enterprise Resource Planning (ERP), Knowledge, Small-Medium Enterprises (SMEs)

INTRODUCTION

The past two decades have seen some of the most turbulent times for the world’s developed and emerging economies. The ability of organizations to survive and prosper in dynamic environments has been linked to their ability to assimilate and apply new knowledge (Grant, 1996; Nonaka & Takeuchi, 1995; Spender, 1996). Many organizations are deploying major IT implementations as part of their response to these turbulent times (Mia & Dutta, 2010). These include enterprise-wide systems, such as Enterprise Resource Planning (ERP) systems, intended to improve both efficiency and effectiveness of operations (Davenport, 2000; Koh, Gunasekaran, & Goodman, 2011). Absorptive capacity has been identified as an important
requirement for the effective implementation of such IT systems (Boynton, Zmund, & Jacobs, 1994; Chen & Ching, 2004; Harrington & Guimaraes, 2005). The concept of absorptive capacity considers that a firm’s ability to innovate is based upon its ability to recognise the value of new knowledge and to assimilate and utilise this together with their existing knowledge in order to sustain and develop the organization, (Cohen & Levinthal, 1990; Zahra & George, 2002).

This study synthesises literature from the domains of individual and organizational knowledge and learning, absorptive capacity and IT systems implementation in order to develop a conceptual model. This model is used to frame an empirical investigation in the particular context of ERP adoption by medium-sized firms in India.

This study offers two important contributions. Firstly, the study combines a process perspective (Lane, Koka, & Pathak, 2006) and a dynamic capabilities perspective of absorptive capacity (Zahra & George, 2002), providing a fuller understanding of the constituents of absorptive capacity and how they operate and interact. To date, with few exceptions (Lichtenthaler, 2010), studies of absorptive capacity have tended to adopt one or other of these perspectives. Furthermore, previous process based studies have not explicitly recognised or explored distinctions between individual knowledge and organizational knowledge processes, despite these concepts being well accepted as distinct in extant literature in the domain of knowledge and learning (Polanyi, 1967; Nonaka, 1994; Grant, 1996; Alavi & Leidner, 2001). This study is therefore theory building in nature in that it seeks to extend the current theory of absorptive capacity.

Secondly, with just a limited number of exceptions (e.g., Gil, Aksoy, & Kulesar, 2009; Park, Suh, & Yang, 2007), previous studies of absorptive capacity in the IT domain have concentrated on the implementation of IT by large firms in developed countries. The majority of firms in developing countries are small and medium sized enterprises (SMEs). Studies of IT adoption and implementation by SMEs have shown that such firms may face particular challenges such as a lack of experienced IT staff and limited financial resources (Hamill & Gregory, 1997; Levy & Powell, 2008; Street & Meister, 2004; Wilson, Daniel, & Davies, 2008). These challenges are likely to be exacerbated in a developing country context, due to wider social and economic challenges (Adam & Urquhart, 2007; Dangayach & Deshmukh, 2006; Gholami, Anon Higon, Hanafizadeh, & Emrouznejad, 2010; He, 2004; Jarvenpaa & Leidner, 2004). This suggests that medium-sized firms in a developing country context provide an appropriate context in which to undertake the empirical exploration of the theory extension that we seek to achieve. IT in developing countries is also an important area of study in its own right and hence the study also provides valuable empirical insights. Whilst the mechanisms that link the adoption of IT and increased organizational and national development are not simple (Avgerou, 2003; Gholami et al., 2010; Li, Huang, Luftman, & Sha, 2010), both scholars and policy makers support the increased adoption of IT, particularly by SMEs (EU, 2008; Milis, 2008). It is important that the development of absorptive capacity of firms in developing economies is explored and understood, if they, and their national economies, are not to be ‘locked out’ (Zahra & George, 2002) of the developmental benefits that IT can offer.

The paper commences with consideration of previous literature addressing individual and organizational dimensions of knowledge and learning and the concept of organizational absorptive capacity. Dimensions of absorptive capacity identified in previous studies in both the IT and the wider management domain are then considered in terms of individual knowledge and organizational knowledge processes and synthesised into the conceptual model (Figure 1), which is used to guide the empirical stage of the study. The case study methodology adopted for the empirical investigation is then described. The findings of nine case studies undertaken are discussed in terms of the dimensions of absorptive capacity identified in the initial
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