ABSTRACT

While a great deal has been written about how information systems (IS) can be deployed to facilitate knowledge management for performance improvements, there is little empirical evidence suggesting such IS deployment can actually improve a firm's bottom-line performance. This study attempted to assess the impacts of IS support for two key knowledge management activities (knowledge generation and knowledge transfer) on labor productivity and profitability with both survey and archival data. The potential moderating effects of firm-specific, complementary organizational resources on the performance impacts of the IS support were also examined and tested. The results showed that IS support for knowledge generation and IS support for knowledge transfer both had direct positive effects on labor productivity. Coupled with firm-specific, complementary organizational resources, both types of IS support exerted positive effects on profitability.

INTRODUCTION

With the widespread recognition of knowledge as a key source of sustainable competitive advantage (Nonaka & Takeuchi, 1995; Quinn et al., 1996; Spender & Grant, 1996), how to manage organizational knowledge to achieve and maintain competitive advantage and superior economic performance becomes a critical issue facing many firms. In the field of information systems (IS) management, the past decade has witnessed a proliferation of research on IS roles in knowledge
management (see Alavi & Leidner (2001) for a review of this body of research). While much of the extant literature has identified various ways IS can be deployed to support knowledge management and IS support for knowledge management is often assumed to improve organizational effectiveness, efficiency and competitiveness (Alavi & Leidner, 2001; Gold et al., 2001; Alavi & Tiwana, 2003; Shin, 2004), it remains unclear whether such IS support would actually result in positive economic returns, due to scant empirical evidence linking IS support for knowledge management directly to the bottom-line performance of firms. Without large-scale empirical research assessing the bottom-line performance impacts of IS support for knowledge management, firms and their managers interested in investing in IS support for knowledge management to improve their competitive position and performance have little evidence on which to base their IS investment and deployment decisions.

Furthermore, although IS have traditionally been viewed as one of the key enabling tools for knowledge management (Davenport & Prusak, 1998; Alavi & Leidner, 2001), researchers have increasingly entertained the notion that IS alone would not influence firm performance, but have to be complemented by other firm-specific organizational resources (e.g., organizational culture and structure) in order to confer knowledge-based competitive advantage (Roberts, 2000; Davenport et al., 2001; Lubit, 2001; Karlsen & Gottschalk, 2004). The presence of these firm-specific, complementary organizational resources not only enables a firm to reap the economic benefits from using IS to support knowledge management, but also helps the firm better defend its advantage resulting from such IS support (Clemons & Row, 1991; Grant, 1996a; Bharadwaj, 2000). Unfortunately, discerning the moderating effects of such complementary organizational resources on the performance impacts of IS support for knowledge management has received scant attention in the existing literature.

The purposes of this study were two folds. First, it provided an empirical assessment of the performance impacts of IS support for knowledge management by testing the relationships between IS support for two key knowledge management activities (knowledge generation and knowledge transfer) and firm performance. Second, the study examined and tested the potential moderating effects of certain unique organizational resources that complement the IS support for knowledge generation and knowledge transfer (i.e., firm-specific resources a firm needs in order to effectively develop and deploy IS to facilitate knowledge generation and knowledge transfer) on the above-mentioned relationships.

The remainder of this chapter is structured as follows. The next section (1) reviews the strategic roles of knowledge and two key knowledge management activities: knowledge generation and knowledge transfer, (2) examines the competitive value of IS support for knowledge management from the resource-based perspective, (3) offers a synthesis of the extant literature on IS support for knowledge generation and IS support for knowledge transfer, along with their performance implications, and (4) explores the potential moderating effects of firm-specific, complementary organizational resources on the relationships between the IS support and firm performance. Together, this discussion provides the conceptual foundation for the development of the research hypotheses. The third section presents the research methodology, including the sample and data collection procedure, the operationalization and measurement of the variables of interest, and the results. The last section of the chapter discusses the implications of the research findings, the limitations of the study, and some suggestions for future research and practice.
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