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Seeking strategic advantage in the post-net era: viewing ERP systems from the resource-based perspective

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Abstract

The purpose of this research is to explore whether enterprise resource planning (ERP) systems can provide an organization with a sustained competitive advantage. Using the VRIO framework of the resource-based model of competitive advantage, four questions are posed to consider this issue. Is the ERP system valuable? Is the ERP system a resource that is heterogeneously distributed across competing firms? Is the ERP system imperfectly mobile? And, is the firm organized to exploit the full potential of its ERP system? An examination of the existing research suggests that ERP systems may not provide a competitive advantage based upon the premises of system value, distribution, and imitability. This is largely due to the 'common systems' approach used for the implementation of most ERP systems. Instead, the source of competitive advantage may lie in the careful planning and successful management of ERP projects, refinement of the reengineering of the organization, and the post-implementation alignment of the ERP system with the organization's strategic direction. Suggestions for future research are offered.

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The capture, processing, storage, and dissemination of data and information to enhance managerial decision-making have been significant motivators for integrated,

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organization-wide information systems (IS). These motivators have driven the development of ever-more-sophisticated hardware environments (such as upward-compatible families of mainframe computers, mini-computers, microcomputers, and networks) and increasingly complex and elaborate software environments (such as advanced generations of programming languages, database management systems, and the Internet). Further, the alignment of an IS with the strategic goals and operational objectives of an organization has been an important issue through the 1980s and 1990s (Brancheau et al., 1996). This desire dates back to the mid-1960s with the earliest conceptions of organization-wide IS. Unfortunately, until recent years the processing power of the hardware and the complexity and sophistication of the software have not been sufficient to meet these expectations. Even the promise of the Internet has not been sufficient to meet these requirements, leading, at least in part, to the demise of the Internet boom. A new era, sometimes described as the 'Post-Net' era, is emerging creating new challenges for the integration of IS and organization strategy.

Today, enterprise resource planning (ERP) systems are one of the most significant business software investments being made in this new era. Davenport (1998) has declared that 'the business world's embrace of enterprise systems may in fact be the most important development in the corporate use of information technology in the 1990s' (p. 122). Mabert et al. (2001) noted that industry reports suggest as many as 30,000 companies worldwide have implemented ERP systems. AMR Research has projected as much as \$180 billion in global investments in ERP (as cited in Kalling, 2003). While not as glamorous as the Internet and electronic commerce, ERP systems offer the advantage of providing organizations with a single, integrated software system linking the core business activities such as operations, manufacturing, sales, accounting, human resources, and inventory control (Lee and Lee, 2000; Newell et al., 2003; Shanks and Seddon, 2000). As Brown and Vessey (2003) note, this integrated perspective may be the first true organization-wide view available to management. And, with the increasing awareness of the availability and capability of information technology (IT), particularly following the Internet boom, organizations are seeking every benefit that can be gleaned from the technology.

Further, given the IT spending frenzy of the Internet boom and Y2K remediation, organizations are taking greater care in how they allocate their technology dollars. ERP research has explored how these types of systems contribute value to an organization (Markus and Tanis, 1999; Ross and Vitale, 2000; Somers and Nelson, 2001), as well as how they should be integrated with already-existing IT resources (Hayman, 2000). Still, large and small companies continue to invest between \$300,000 and hundreds of millions of dollars in ERP software and accompanying hardware (Markus, 1999), using a variety of business justifications, including improved productivity, reduced costs, greater operational efficiency, enhanced customer relationship management, and better supply chain management (Communications of the ACM, 2000; Brown and Vessey, 2003; Mabert et al., 2001). In spite of the hopeful nature of ERP investments, many companies have ended up in litigation over ERP implementation issues (cf. Boudette, 1999; MacDonald, 1999; Nash, 2000) and even bankruptcy (cf. Montoya, 1998; Nash, 2000). Scott and Wagner (2003) portray organizations as being 'caught between the perceived need to implement ERP and the challenge of realizing the benefits from them' (p. 287). Ultimately, for the return on investment in ERP systems to be achieved, these systems

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