

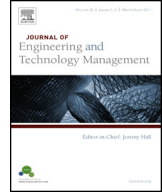


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ERP adoption and the value creation: Examining the contributions of antecedents



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ABSTRACT

There has been considerable debate about the role of enterprise resource planning (ERP) in driving competitive advantage. However, little is established empirically on the antecedent factors that could facilitate achievement of such an advantage of adopting ERP. Therefore, this study examines the role of antecedent factors in the organisational adoption of ERP projects for the achievement of competitive advantage. We draw on information system success and information system implementation theories to build a conceptual model to examine the role of antecedent factors in influencing the achievement of competitive advantage. We use the structural equation modelling (SEM) technique to analyse the survey data of 217 Australian companies and test the model. We find that organisations that understand the importance of certain antecedent factors and manage them appropriately can achieve competitive advantage with ERP projects. These factors include consideration of the system quality and organisational readiness at the planning stage for an ERP project.

We have extended knowledge on the role of antecedent factors to successful organisational adoption of ERP by providing evidence that they are also significant predictors for the achievement of competitive advantage. Our study's findings indicate that establishing a clear understanding of necessary system attributes in the organisational context at the adoption stage of ERP is important for helping organisations achieve subsequent competitive advantage.

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Their understanding of potential system quality attributes, the business environment within which their organisation may operate, the internal organisational capabilities and desired strategic benefits, can help managers and ERP system developers implement strategies, leadership, resources, and commitment to achieve their desired benefits from ERP projects.

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Introduction

Organisations invest in enterprise resource planning (ERP) systems to gain a variety of operational, managerial and strategic benefits (Woo, 2007). While the introduction of ERP within organisations has often been found to be a complex endeavour encountering difficulties and failures (Kanaracus, 2011, 2012), the evidence shows that a number of organisations have actually achieved improved performance and various tangible and intangible benefits after implementation (Beheshti and Beheshti, 2010; Cotteleer and Bendoly, 2006).

The integrative nature of ERP improves an organisation's information processing, decision making and innovation capabilities and changes the way the organisation interacts with customers, suppliers and other stakeholders within and across organisational boundaries. The fundamental changes brought about by the introduction of ERP can lead to 'significant implications that go far beyond operational efficiency' (Lengnick-Hall et al., 2004, p. 308) and result in operational distinctiveness leading to competitive advantage.

The resource-based view (RBV) of business strategy determination sees an organisation as a collection of resources and capabilities. Effectively managing these capabilities can lead to unique and firm-specific processes and procedures, resulting in profitability and growth and achievement of competitive advantage (Taher, 2012). RBV theory suggests that to be able to enjoy competitive advantage, organisations need to develop capabilities that 'may be durable, rare, appropriate, non-substitutable, immobile or imperfectly mobile, difficult for others to imitate, and have value in the firm's environment and marketplace' (Taher, 2012, p. 154). However, the need for operational commonality with other organisations that is introduced through the ERP adoption process poses several challenges for developing a unique set of resources.

The literature indicates that ERP can trigger competitive advantage in a variety of ways, for instance, by helping organisations to establish useful links with supply chain partners, achieving agility in product and service differentiation, reducing time-to-market for delivery of products and services, achieving flexibility in adapting to changing customer demands, improving customer service and customer retention, achieving improved knowledge management and becoming a fluid and responsive organisation (Laframboise and Reyes, 2005; Seddon, 2005).

The introduction of ERP systems within an organisation is generally considered a strategic initiative and aligned with long-term business objectives. Thus, it is expected that organisations will tie investment in ERP to achievement of competitive advantage. The large capital and human-intensive nature of the ERP implementation process necessitates a clear understanding of the long-term effects and benefits that ERP can bring to the organisation. Some authors have argued that adoption of ERP systems can help organisations in establishing a platform for, and is instrumental to achieving competitive advantage (Laframboise and Reyes, 2005). Possessing organisational resources, such as ERP, has been thought to influence competitiveness (Wu and Wang, 2007b). However, the overall evidence for this in the literature remains mixed and no clear picture seems to emerge about the role of ERP in achieving competitive advantage. As such, it has remained a matter of unresolved debate (Seddon, 2005).

We argue that at the adoption stage, an understanding of the role of ERP for facilitating competitive advantage can help an organisation to implement strategies, identify resource complementarities and create a basis for informed resourcefulness to achieve competitive differentiation after ERP adoption (Lengnick-Hall et al., 2004, p. 315). Identifying the drivers, factors and processes that lead to competitive advantage would be crucial to create such strategies particularly early in the process, that

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