



**Chapter I**

**Information Systems  
Requirements in Support  
of the Firm's Portfolio  
of Knowledge-Driven  
Capabilities**

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**ABSTRACT**

*Organisations, whether within knowledge-intensive high technology sectors or in more traditional manufacturing and utility industries, are recognizing the significance of knowledge as a competitive weapon. All firms possess a wealth of knowledge assets which enable them to function and develop. Whilst some of this knowledge is made explicit in the form of best practice procedure manuals, meeting minutes, working papers, patents and other means, much of the knowledge within the organisation remains tacit. This tacit knowledge is held by individuals and may well be embedded in their working practices, but it includes knowledge both about the internal functioning of the operation and knowledge about the environment in which the organisation exists and which could contribute to its development. Even though this tacit knowledge is often largely unrecognized it does lie at the roots of the firm's competitive base.*

*Indeed, the future of the firm is very much tied up in these knowledge-driven competencies which form the collective knowledge to which the firm has access. Information systems have been recognised as playing a role in the process of making this tacit knowledge more explicit, in its storage and later accessibility. Information systems have a role in generating new knowledge by supporting the creative and problem solving processes. Additionally, information systems knowledge will be a key competence that will be embedded into new products and services, into processes for production and delivery. Making these knowledge-driven competencies or capabilities more recognizable and establishing their positioning in relation to the strategic thrust of the business are essential if organisations are to be in a position to leverage their internal assets for long-term benefit. Without this strategic understanding, many organisations will fail to develop their information systems strategy to support the long-term needs of the business.*

*In this chapter the authors develop a methodology for utilizing a strategic capabilities positioning matrix for integrating the information systems opportunities and needs into the strategic direction of the organisation, thus forming the basis for developing the information systems strategy.*

## INTRODUCTION

Knowledge management has come to the fore as organisations begin to appreciate the impact of the connected economy. There is little doubt that many organisations have recognised the importance of knowledge in being a vital source of competitive advantage; knowledge of technologies and their application in products and services, knowledge of customers and their needs, knowledge of the supply market. As pointed out in an earlier article (Birchall & Tovstiga, 2000), knowledge in a firm manifests itself primarily in the firm's competencies and capabilities. The authors adopted the meaning attached by Hamel (1994) to capabilities, i.e., rather than being seen as single, discrete skills or technologies, they comprise bundles of constituent skills and technologies that create disproportionate value for the customer, differentiate its owner from competitors and allow entrance to new markets. Where the firm has superior capabilities to its competitors it has the potential to gain competitive advantage.

Capabilities are actually the result of an accumulation of learning over time. Moreover, it is the knowledge content of competencies and capabilities that is tacit, i.e., that which remains hidden and hence uncodified, rather than the explicit form of knowledge, which underlies the firm's real basis of competitive advantage. A truly *key* or *core* capability, one that provides a clear basis for competitive differentiation to the firm, will, for a disproportionate part, consist of knowledge in a highly tacit form.

This feature of a capability carries a number of important implications for competitive differentiation. One of these has to do with the ease with which a capability can be replicated, transferred or lost to a competitor. Our premise is that

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