Chapter I

Developments in Managing Innovation, Knowledge and E-Business

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ABSTRACT

Successful innovation is seen as a top priority within many organisations (Porter, Stern, & Council on Competitiveness, 1999). Innovation is the mechanism by which organisations produce the new products, processes and systems required for adapting to changing markets, technologies and modes of competition (D’Aveni, 1994; Dougherty & Hardy, 1996; Utterback, 1994). This process requires the application of knowledge in some new or novel way. However, the explosion in knowledge and increasingly specialized technologies and markets has meant that a single firm alone is unlikely to possess all the relevant knowledge required to innovate. Consequently, organisations have been searching for new ways of overcoming this difficulty. One such mechanism is harnessing information technology to facilitate new organisational structures suited to managing innovation and knowledge into the 21st century. Information technology has expanded the opportunities (and challenges) of undertaking innovation. Twenty-four-hour product development processes are now a reality as multi-nationals race new products to the market. This chapter shows how leading innovators leverage e-business tools to harness knowledge residing in all areas of their value chain, including suppliers and customers. A case study of Cisco Systems, Inc. is used to illustrate this new operating model.
BACKGROUND

Broadly viewed, innovation and particularly technological progress have been key drivers in the development of human civilization and the increasing standard of living and productivity witnessed through the 20th century. Entire new industries and fields of knowledge, like biotechnology, communications and information technologies, have developed and subsequently revolutionized everyday life.

Innovation as a concept has vast scope and depth. This chapter focuses particularly on the management of innovation at the organisational level. Within an organisation, innovation may range from the highest levels of capital investment producing radically new products through to the most basic changes in product design, manufacture, supply or packaging. An innovation might even involve the use of marketing to modify the perceptions of an organisation’s customers. Some innovations create new industries and destroy others (Utterback, 1994). Innovation is not just about the commercialization of new technologies, and is thus broader than a research and development function. It includes the myriad of small and large changes constantly made to products, processes, administration, systems and markets.

In an environment where control over quality, cost and flexibility is becoming commonplace, innovation is increasingly recognised as an important strategic dimension. In fact, innovation may ultimately become the only sustainable advantage available to an organisation. This is due to innovation being fundamentally a dynamic concept with advantage coming from innovating faster and more effectively than competitors (Collins & Smith, 1999). This target is becoming more difficult as organisations learn and improve their innovation processes. Organisations today require an increasing commitment to innovation simply to stay in the same position, much less improve (Porter et al., 1999).

In the search to increase the effectiveness of their innovation processes, leading innovators are looking for ways to harness the knowledge residing in their organisation and externally within their network of suppliers, customers and other institutions. Businesses no longer compete based on the assets they possess, but rather on their ability to harness and diffuse knowledge throughout their operations. Drucker (1993) observed that productivity improvements in the 21st century arise from the application of knowledge to knowledge. This is in contrast to the industrial economy of the 20th century where productivity improvements were achieved through the application of knowledge to natural resources, labor and machines. Knowledge has thus driven increases in productivity and competitiveness.

At a macro-level, innovation is the means by which knowledge is incorporated into economic activity. Knowledge lies at the heart of the innovation process. It relies heavily on the creation, utilization and diffusion of knowledge within companies and new product development processes (Cohen & Levinthal, 1990; Fiol, 1996; Teece, Pisano & Shuen, 1997). Knowledge is viewed as an important means of linking and leveraging the different areas of the business (Cohen & Levinthal, 1990). Nonaka and Takeuchi (1995) summarize the link between knowledge and innovation stating that “successful companies can create knowledge, disseminate it through the
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