

Chapter 19

Knowledge Management and Innovation

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ABSTRACT

In today's society, innovation and knowledge management are no longer luxury items. Instead, they are necessities and a means of economic development and competitiveness. Knowledge and innovation are inseparable. Knowledge management competencies and capacities are essential to any organisation that aspires to be innovative. Innovation and knowledge management are closely related. This paper discusses the importance of knowledge management in innovation for organisations. It describes how innovations can be achieved through the role of knowledge management using a case study involving the renovation and building of a school project in Finland. The case study shows how knowledge creation and sharing were used to help innovation using vision building.

INTRODUCTION

Innovation is a process through which the nation creates and transforms new knowledge into useful products, services and processes for national and global markets—leading to both value creation for stakeholders and higher standards of living. The difference between invention and innovation is that invention is a new product, whereas innovation is a new value (Szmytkowski, 2005). To turn invention into innovation requires different types

of knowledge, capabilities, skills and resources. Innovation is a continuous process - often an effect of small incremental/marginal changes in the product or process. The EU marked 2007 as a year of focus for innovation within its member countries. Many governments in the EU are putting significant investment into education and business to stimulate innovation.

Innovation is the mainstay of an organization. The speed of innovation has been made possible by rapidly evolving technology, shorter product life cycles and high increase in new product development. For organizations to remain competi-

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tive, innovation is essential. Owing to changing customer needs, extensive competitive pressure and rapid technological change, innovation has become increasingly complex (Cavusgil *et al.*, 2003). du Plessis (2007) attributed the complexity to the increased growth in the amount of knowledge available to organisations. Innovation depends intensively on the availability of knowledge. The complexity created by the richness of knowledge has to be identified and managed to ensure successful innovation (Adams & Lamont, 2003; Pyka, 2002). Knowledge management has important implications for innovation; therefore it is imperative that we understand the role of KM in innovation. This is especially true for construction industry. Construction is portrayed as not being an innovative industry and often it has been labelled as 'extremely conservative' (Rosenberg, 1982). It is also 'low tech' (Reichstein, Salter & Gann, 2005) and 'an industry of the old type' (Landes, 1969). There are several factors that have been put forward as the reasons for the lack of dynamism and innovation. Barrett *et al.* (2007) attributed three strands to the causes. Firstly, the temporary project-based nature of the industry is seen as constraining innovation (Gann & Salter, 2000). Secondly the structure of the industry with its preponderance of small firms employing less than five people gives rise to an associated limited capacity to innovate (Sexton & Barrett, 2003). Lastly the adversarial nature of the industry with associated short-termism and opportunism does not encourage long term solutions. Another factor in construction is the way innovation is measured and modelled, because of it being a service centred industry. According to Winch (2003), standard measures for construction, take a very narrow view of the industry, and ignore value adding activity in design and use of buildings. The construction industry needs to work collaboratively and pool knowledge in order to capture innovation, says Director of Constructing Excellence, Peter Cunningham. There is a need for innovation in the construction industry. Changes in global markets,

increased customer expectations, and government pressure have all led to innovation becoming a key focus for the construction sector.

This chapter briefly reviews innovation and the role of KM in innovation. It begins with a brief review of innovation followed by knowledge management and its role in innovation. This is followed by a case study describing the role KM plays in innovation of a school through knowledge sharing in construction. The chapter concludes with suggestions for further research.

INNOVATION

There are many definitions given to innovation. Drucker (1975) defines innovation as the process of equipping in new, improved capabilities or increased utility. Others define innovation as the process of introducing new ideas to the firm which result in increased performance. According to Rogers (1998), innovation is concerned with the process of commercialising or extracting value from ideas. An innovation is any new or substantially improved good, service or process that has been commercialised. For example, innovation can be the introduction of changes in management, work organization, the working conditions, skills of workforce or marketing systems (Rogers, 1998; DIST, 1996). To be innovative requires organizations to engage their customers in continuous dialogue, to co-develop solutions through a knowledge exchange of needs and ideas.

Chan and others (2004) define innovation as the introduction of a new combination of the essential factors of production into production systems. It involves new product, new technology, new markets and new combinations. According to Cardinal and others (2001), the innovative process encompasses technical, physical and knowledge based activities that are central to form product development routines. Innovation is defined by Herkema (2003) as a knowledge process aimed at creating new knowledge geared towards the

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