

Chapter X

Global Knowledge Management Technology Strategies and Competitive Functionality from Global IT in the International Construction Industry

William Schulte

Shenandoah University, USA

Kevin J. O'Sullivan

New York Institute of Technology, USA

ABSTRACT

Information and knowledge management technologies and globalization have changed how firms in service industries formulate, implement, and sustain competitive advantage. This research project contributes to our understanding of the relationships between global knowledge management technology strategies and competitive functionality from global IT. Based on field research, this study found that global knowledge management technology strategies have a positive impact on competitive advantage from information technology applications functionality from global IT. This study provides recommendations to international engineering, procurement, and

construction industry executives regarding the impact of knowledge management strategies and global information technology on competitive advantage of firms in their industry.

RESEARCH ISSUE

Global knowledge management technologies have changed how firms in service industries formulate, implement, and sustain competitive advantage (Schulte, 2004). Moreover, information technology and telecommunications have been driving forces behind the globalization of many industries (Roche & Blaine, 2000). In addition, global information technology has ushered in the knowledge

economy and enabled knowledge management to enhance competitive advantage (Stankosky, 2005; Schulte, 1999; Giraldo & Schulte, 2005). Knowledge creating factors managed by governments have also enhanced the innovation of many firms and patent production in industries around the world (Revilak, 2006).

Moreover, the strategic importance of information technology is an established proposition in the information systems and strategic management literature (Roche & Blaine, 2000). In addition, scholars have argued that multinational corporations (MNCs) have improved performance by ensuring that their information technology and knowledge management strategies are congruent with their business and corporate strategies (Giraldo & Schulte, 2004; Stankosky, 2004). In general, knowledge management is a widely accepted factor in creating efficiency, effectiveness, and sustainable competitive advantage (Stankosky, 2004; Schulte & Sample, 2005; Davenport & Prusak, 1997; Drucker, Garvin, Leonard, Straus, & Brown, 1998; Edvinsson & Malone, 1997; Dixon, 2000; Nonaka & Takeuchi, 1995; O'Dell & Grayson, 1998; Schwartz, 2005; Sveiby, 1997; Stewart, 1997; Choo & Bontis, 2002; Liebowitz & Wilcox, 1997; Revilak, 2006).

RESEARCH QUESTION

This research project will attempt to contribute to our understanding of the relationships between global information technologies, knowledge management, and competitive advantage. Competitive advantage is the most important common denominator in the global information technology, knowledge management, and international corporate strategy literature. This study is an exploration of the factors that contribute to the competitive performance of firms competing in international engineering, procurement, and construction industry. The purpose of this study is to explore the following research question:

To what extent do global information and knowledge management technologies affect the competitive advantage of global organizations in the international engineering, procurement, and construction industry?

This study provides recommendations, based on the results of the research, to international engineering, procurement, and construction industry executives about how knowledge management technology strategies can impact functionality competitiveness from information technology applications including knowledge management systems.

THE INTERNATIONAL ENGINEERING, PROCUREMENT, AND CONSTRUCTION (IEPC) INDUSTRY

Construction is one of the most influential industries in the world (Schulte, 1997, 2004). This position is based on the following nine arguments. First, it is the world's largest industry, representing a significant percentage of the world's total Gross Domestic Product. Because construction is labor intensive, it creates a significant share of global employment, especially in developing countries.

Second, changes in the construction services industry have an exponential impact on the world economy. Construction's impact extends far into the value chain, both upstream and downstream in many industries. Construction projects increase sales in related industries such as heavy equipment, transportation, cement, steel, and financial and other services. Furthermore, the spin-off effect of the industry influences all major industries in the economy, particularly those requiring industrial plant, commercial facilities, or infrastructure construction.

Third, despite recent increases in privatization, regional economic integration, and market liberalization in emerging markets, construction

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