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ITB7572

Chapter 12

Information Technology, Core Competencies, and Sustained Competitive Advantage

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The value of information technology (IT) in today's organizations is constantly debated. Researchers and practitioners have examined organizations to try to discover causal links between competitive advantage and IT. This paper presents and details a model that depicts a possible connection between competitive advantage and IT. Furthermore, this paper attempts to show how one major component of the overall IT resources, the IT infrastructure, might yield sustained competitive advantage for an organization. More precisely, IT infrastructure flexibility is examined as an enabler of "core competencies" that have been closely related to sustained competitive advantage in the research literature. The core competencies enabled by IT that are the focus of this study are mass customization and time-to-market. By showing that IT infrastructure flexibility acts as an enabler of these competencies, the relationship to sustained competitive advantage is demonstrated.

INTRODUCTION

A fiercely competitive business environment is an omnipresent reality in many commercial industries today. Forces such as global competition, ever changing consumer attitudes, rapidly decreasing cycles of technological innovations, social and cultural upheavals, and instantaneous access to

Previously Published in the *Information Resource Management Journal, vol.14, no.2*, Copyright © 2001, Idea Group Publishing.

widespread information have been catalysts of this competitive climate. These competitive pressures have prompted business organizations in virtually every industry to institute radical organizational initiatives and mandates to do battle among themselves. In recent years, senior management in large and small organizations has tried many different maneuvers such as total quality management (Choi and Behling, 1997), reengineering (Hammer, 1990; Hammer and Champy, 1993), downsizing (Robbins and Pearce II, 1992), rightsizing (Zeffane and Mayo, 1994), and flatten organizational structures (Daft and Lewin, 1993; Heydebrand, 1989) to stay competitive or to gain a sustained competitive advantage.

Many researchers and practitioners have advocated using information technology (IT) as a source of competitive advantage (Benjamin, Rockart, and Scott Morton, 1984; Clemons, 1986, 1991; Feeny, 1988; King, Grover, and Hufnagel, 1989; Neo, 1988; Parsons, 1983; Porter and Millar, 1985). Companies, such as Wal-Mart, American Airlines, and Baxter International, have been cited as corporations that gained sustained competitive advantage from IT. This paper investigates this concept of IT being an agent of competitive advantage and attempts to show how one major component of the overall IT resource, information systems (IS) infrastructure flexibility, might yield sustained competitive advantage for a firm. More precisely, IS infrastructure flexibility is examined through its relationships as an enabler of core competencies that have been closely linked to sustained competitive advantage in the management literature. The core competencies that are closed linked here with IS infrastructure flexibility are mass customization and time-to-market.

At one time, the competitive value of IT was thought to come from so-called strategic information systems (SISs) (Reich and Benbasat, 1990; Sabherwal and King, 1995; Sabherwal and Tsoumpas, 1993; Wiseman, 1988). SISs change the goals, operations, products, or environmental relationships of organizations to help them gain an advantage, at least temporarily, over other companies in their industry (Wiseman, 1988). During the 1980s and early 1990s, strategic systems like American Airlines' Sabre System (Hopper, 1990), Digital Equipment Corporation's XCON (Sviokla, 1990), Federal Express's tracking and sorting system (Stahl, 1995), and Baxter's International ASAP system (Scott, 1988) were popular. Many companies were desperately trying to develop their own SISs to win customers and market share.

However, some recent research evidence has cast doubt on the ability of SISs to sustain competitive advantage for their companies. Mata, Fuerst, and Barney (1995) reasoned that proprietary technologies like SISs are becoming