

Chapter 12

Organizational Learning and Technology

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ABSTRACT

The purpose of this chapter is to explore the role of technology in organizational learning. Recognizing that the presence of technology may not always bring about desirable change, this chapter focuses on identifying promising aspects of technologies and their potential to enhance the organization's learning capacity. Three interrelated constructs—technology, organizational learning, and knowledge management—are examined. This review pointed to several challenges related to technology integration in the organizational learning processes. A variety of technology-based learning platforms are suggested. Virtual learning, virtual dialoguing, virtual communities of practice, and technology-enabled knowledge management systems are recommended as appropriate technology applications for facilitating learning within organizations. Gaining an understanding about how technology can be leveraged to promote learning is key to improving organizational practices.

INTRODUCTION

Today's organizations operate in an environment characterized by high uncertainty and rapid change brought on by fluctuating economies, intensified globalization, constant technology advancement, rapid generation of new knowledge, and unexpected crisis events. In an effort to achieve success in such dynamic and complex environments, practitioners and scholars increasingly resort to 'learning' as a means to keeping up with the speed

of change (Raelin, 2008). Adopting "learning" as a strategy has quickly become a trend in industry, as evidenced by the emergence of positions such as Chief Knowledge Office and Chief Learning Officer in many large business organizations (e.g., Coca-Cola, General Electric, Sequent Computer, Young & Rubicam, and leading consulting firms (e.g., Ernst & Young, Coopers & Lybrand, and Booz and Co). Strategies aimed at increasing organizational efficiency are also dependent on the ability of managers and workers to learn and assimilate new ways of thinking and behaving.

DOI: 10.4018/978-1-61350-068-2.ch012

The capacity to learn has become, perhaps, the number one indicator for organizational effectiveness (Cho, Cho, & McLean, 2009), and innovation (Hurley & Hult, 1998).

In the knowledge-intensive world, technology can play a significant role in promoting learning by providing organizational members with easy and flexible access to information (Dewett & Jones, 2001). Parallel research efforts have been made to study information technology and organizational learning; however, only until recently has research begun to address these two concepts in combination. The interrelationship has been investigated from two perspectives: (1) organizational learning as a strategy to help learn different technologies; and (2) the role of technology in organizational learning. This chapter focuses on the latter line of inquiry. Recognizing the dual (enabling and disabling) effects of technology on organizational learning, the goal is to explore how technology can be leveraged as a facilitator for learning within organizations. This goal was accomplished through a review, analysis, and synthesis of three bodies of literature—technology, organizational learning (OL), and knowledge management (KM). Note that in this chapter, KM was not weighted as heavily as OL. KM was treated as a tool for facilitating OL; however, this is not suggesting the lesser importance of KM.

BACKGROUND

This section provides the theoretical context of this research. It begins with an overview of technology and its broad impact, and then moves to a discussion about organizational learning and the related construct—knowledge management.

Technology

Defining and studying technology is important because of rapid changes in workplace learning and performance as driven by a multitude of technolo-

gies. Technology was initially conceptualized in terms of: technical complexity (Woodward, 1965); operations technology and variability (Pugh, Hickson, Hinings, & Turner, 1969); interdependence (Thompson, 1967); routine-nonroutine (Perrow, 1970), and manageability of raw materials (Mohr, 1971). More recently, technology has been broadly defined as the process of “managing and reducing the uncertainties surrounding production and administrative processes” (Dewett & Jones, 2001, p. 316). Two related concepts worth defining here are information technologies and information systems. *Information technologies* (IT) encompasses a broad spectrum of communication media and devices which link information systems and people. Examples are voice mail, e-mail, voice conferencing, video conferencing, the Internet, groupware and corporate intranets, car phones, fax machines, personal digital assistants, and so on. *Information systems* refer to the multiple varieties of software platforms and databases designed to manage the major functions of an organization. Examples here are products provided by companies such as SAP, PeopleSoft, JD Edwards, Oracle, and Microsoft. Information systems and information technologies are often inextricably linked (Dewett & Jones, 2010).

Technologies have gained huge popularity in the last two decades. By 1991, U.S. companies spent more on IT than any other capital investment. Total spending on computers and related services doubled from approximately \$80 billion in 1984 to over \$160 billion in 1998 (Dewett & Jones, 2001). Technology application has consistently been found to be linked to positive organizational outcomes. Specific examples of improved capabilities are: ability to connect and enable employees; ability to codify the organization’s knowledge base; improved boundary spanning capabilities; improved information processing leading to increased efficiency; and improved collaboration and coordination which promotes innovation (Dewett & Jones, 2001). Dewett and Jones also identified two meta-benefits of IT

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