The key role of organizational culture in a multi-system view of technology-driven change

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Abstract

Organizations undergoing technology-driven change must understand that technology is only one of several inter-related components which drive organizational performance. A multi-system perspective of organizations highlights the interdependencies between an organization's technology, structure and culture and how these affect organizational processes and behaviors. Successful technological innovations require that either the technology be designed to fit the organization's current structure and culture or that the organizational structure and culture be reshaped to fit the demands of the new technology. Thus, the desired effects of new technology are most often realized in organizations able to implement the additional changes that are required to maintain overall fit. To illustrate these issues, this paper presents a case study based on a technology-driven change in a Turkish financial organization. Special attention is given to the role of organizational culture, which is often cited as the most critical factor in successful technology assimilation. © 2001 Elsevier Science Ltd. All rights reserved.

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1. Introduction

Anyone who has lived through the implementation of a large-scale technological innovation in an organization has run at some point or another into the crude reality of major organizational and human, rather than purely technological problems. Those who have not had the experience firsthand can rely on a 1996 report by the OASIG group that summarizes the experiences of 45

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UK leading information technology (IT) researchers and consultants.[1] According to this report, about 80–90% of IT projects fail to meet their performance goals, and this is in part due to the fact that organizations give inadequate attention to the non-technical, i.e. human and organizational, factors which are critical determinants of the effectiveness of the new systems. IT projects are usually technology-led and address too narrow an agenda, often connected with cost savings. Generally speaking, managers fail to understand the links between technical and organizational issues and between the new technology and the strategic business goals and needs of their organizations.

The same report points out that successful IT implementation requires organizations to adopt an integrated approach to organizational change in which people and technical factors are viewed as inextricably linked and interdependent. In this sense, senior managers must take full responsibility in developing a long-term strategic view of change, and project managers must be given responsibility for managing change, for paying full attention to human and organizational issues, and, more concretely, for actively considering how the new technology may affect the way in which work is organized and jobs are designed.

The purpose of this paper is to present an integrative model to help both administrators and technology designers understand and manage the interconnections between technology and other human and organizational aspects of a business. The ultimate goal is to be able to efficiently manage the changes imposed upon the organization by the introduction of a new technology in such a way as to minimize the human costs of the transition while maximizing the benefits obtained from the technology.

Within this model we will pay special attention to the factors that determine the behavior of the group of people that form a particular organization. By understanding how human behavior is influenced by the particulars of an organization we might be able to clarify the potential impact of introducing a new technology. A useful way of understanding collective determinants of behavior is to appeal to the notion of *culture*. The first part of the paper is devoted to clarifying this concept, its operationalization, and its relationship with organizational change.

Technology and people, however, are only two of the several subsystems which are at work within the organization and which together define its performance. In order to understand the interconnections between technology and people we need a bigger picture which lays out the relationships between these two and other important subsystems such as organizational structure, business and management processes, and strategy. The second part of this paper presents a general multi-system framework that illustrates the most important dependencies among the major subsystems of the organization.

Finally, for this framework to be of any use, it should be able to help us deal with change. To illustrate how the framework can be used to effectively plan and manage technology-driven change, the last section of the paper describes an experience in which these concepts were applied in the context of a large-scale IT project in a financial institution.

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[1] OASIG is a Special Interest Group funded by the British Department of Trade and Industry which deals with Organizational Aspects of Information Technology. The referenced 1996 report, entitled "The Performance of Information Technology and the Role of Human and Organizational Factors", can be found at http://www.shef.ac.uk/~iwp/publications/reports/itperf.html.