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Introduction

Information technology is changing today at a rapid pace. Emerging technologies include not only new hardware, software, and data communications for user applications but also planning and development tools for IS professionals. In fact, the rate of IT change appears to be increasing dramatically. New products seem to surface with greater alacrity than ever before in the history of computing.

Research has suggested that this swift change is causing difficulties for today's IS organization. IS professionals on a lengthy development project can witness the emergence of dramatic, new, useful ITs and the passing of others. Capitalizing on the new opportunities while avoiding the risks of the fads can pose a complex challenge to the IS organization.

Given this state of affairs, research is needed to help IS managers understand, plan, and control the impact of new IT. To advance such study, this paper describes research-in-progress that attempts to answer the following two questions: In what ways is the rapid change in IT affecting the IS organization? How are IS organizations dealing with problems that arise from this change?

Background

The importance of the rapid change in IT is grounded in both practice and theory. A survey of practice aimed at identifying the top MIS issues in Canada found that keeping up with rapidly changing technology was the second most important issue among IS managers (Carey, 1992). Likewise, 61% of the respondents to a survey of European IS managers indicated that keeping up with emerging technologies was important or critical (Paul, 1994). A study of 20 top IS executives in the U.S. confirmed that changing IT was an important environmental concern (Lederer and Mendelow, 1990). Thus in terms of practice, IT change is clearly a key issue facing IS organizations around the world.

Furthermore, a theory has described the impact of the changing environment on IS management and the organization's response to it (Lederer and Mendelow, 1990). The theory recognizes the effects of technology on IS organizations (Er, 1987; Orlikowski and Robey, 1991) and the changes in the way IS organizations are managed (Gallivan, 1994).

The theory defines the environment as consisting of such dimensions as IT, government, competitors, customers, and users. The environment causes categories of problems for the IS organization. Particular problems then prompt IS management to use coping mechanisms to reduce them or to try to change the environment to dampen their effects. IT is posited to cause three categories of problems: buy or wait (i.e., a dilemma forcing IT professionals to buy prematurely or delay the benefits of new IT), technology mania (i.e., excessive fascination with new IT), and incompatibility (i.e., the acquisition of new ITs that do not easily work together).

Coping mechanisms serve as ways in which the IS organization addresses problems or dampens their impact. For example, an organization may prevent incompatibility through monitoring by an IS auditor (Davis & Dykman, 1993) or through the use of a simple Request for Recommendation instead of a more inflexible Request for Proposal (Buchman, 1990). An organization might monitor a vendor to anticipate and thus dampen any adverse effects of future software releases (Lederer and Mendelow, 1990).

The theory has its shortcomings. For example, it fails to recognize how new IT provides opportunities to push the IS organization in new directions (Gallivan, 1994). The environment may have more dimensions, the effects of the IT dimension may be more extensive, and coping mechanisms are probably more complex than described in the theory. Nevertheless, the current research-in-progress uses it as its foundation and starting point.

Methodology

The authors chose to employ a generally qualitative approach to answer the research questions and thus elucidate the theory (Benbasat et al., 1987; Lee, 1989). They did this because existing theory and research do not provide sufficient detail to permit the creation of very many scaled items. Also, no control or manipulation of the subjects was deemed necessary or feasible. Thus, the study needed to be conducted in its natural setting rather than in a laboratory.

In fact, the use of structured interviews in IS research is a valid approach under such conditions. Hence the authors followed Benbasat et al.'s suggestions as closely as possible. For example, multiple organizations were deemed necessary because the study is description and theory building. Because Benbasat et al. recommend concentrating on a unit of analysis, the authors chose the individual IT that practicing IS professionals have used or attempted to use in their organization for this purpose.

The authors have developed a structured interview instrument consisting of a combination of open-ended questions as well as a few scaled ones with a focus on specific projects. The instrument asks subjects to answer open-ended questions about individual new ITs, the problems they caused, the actions taken to alleviate the problems, and the effectiveness of the actions. Scaled questions address the relative newness of the IT to the organization and level of success.

The researchers have been choosing subjects from a list of IS professionals who are alumni of a major university's business college. The subjects represent different industries, different levels within their organization, and organizations of different sizes to ensure that a broad view of the effects of IT change could be gathered. The intended sample is 25 subjects, each from a different IS organization.

The researchers have been contacting subjects with a brief letter explaining the study and soliciting participation. They next phone them to answer any questions and schedule interviews at a convenient time and place.

Two of the authors are participating in each interview. Results are tape recorded when the subjects grant permission. To date, the authors have conducted six interviews. They will complete data collection and analysis for presentation at the Inaugural Americas Conference on Information Systems.

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