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Corporate Responses to the Year 2000 Problem: An Organizational Learning Perspective

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Abstract

Companies have invested billions of dollars in Year 2000 remedies. Given the poor track record of IT projects, one of the major questions is whether companies used this “crisis” to identify changes to improve the delivery of future projects and other IT management practices. This research proposes a model based on the crisis management and learning theories to argue that the learning orientation of an organization is associated with the Y2K strategy adopted and associated learning outcomes.

Introduction

“Those who cannot remember the past are condemned to fulfill it.” - George Santanyana, 1863 - 1952

Since 1995, hundreds of articles have appeared in computer journals and business publications such as Computerworld, CIO, Business Week, Forbes, and the Wall Street Journal and numerous books have been written on what has been called the Year 2000 (Y2K) conversion problem, crisis, time bomb or bug. Judged by the non-events, the crisis was averted and the year 2000 conversion went relatively smooth due to the billions of dollars that companies spent on remediation and disaster recovery planning (Bennett and Dodd, 2000). As companies put Y2K behind them and move forward, the major question that arises is: What are the implications of Y2K for the future of IT? For some companies a crisis may be creative in that it represents an opportunity to reap growth through enhanced competitiveness (Kim, 1998). Given the infrequent nature of crises and the unwillingness of many companies to openly discuss their crisis experiences “relatively few lessons and assumptions regarding organizational crises have been carefully examined empirically (p. 74). As a crisis that was under considerable scrutiny and that affected so many organizations simultaneously, the Y2K is not only an opportunity for organizations to learn from it but also for researchers to advance research in IT and crisis management. Building on the crisis management, project management, and organizational learning literatures, the purpose of this paper is to provide a research model that predicts the learning effects of Y2K on organizations.

A Typology of Y2K Strategies: A Crisis Management Perspective

Effective crisis management is proactive, not reactive (Mitroff, Pearson, and Harrington, 1996) and ensures that "operations are sustained or resumed, organizational and external stakeholder losses are minimized, and learning occurs so that lessons are transferred to future incidents" (Pearson and Clair, 1998, p.60). Following Pauchant and Mitroff (1992), Y2K crisis management can be conceptualized in terms of five essential phases which are associated with three major types of crisis management: proactive strategies, reactive strategies, and interactive strategies (Figure 1).

Figure 1. Types and Phases of Y2K Crisis Management

Proactive strategies

Proactive strategies involve sensing and acting on signals of impending crises, attempting to prevent a crisis, and preparing for contingencies by way of designing various scenarios and sequences of action for anticipated or imagined failures and testing them fully. As such, activities associated with proactive strategies can prevent many crises from occurring in the first place (Pauchant and Mitroff, 1992). As a technical failure crisis originating in the company’s relevant environment, the Y2K problem provided ample opportunity for detailed precrisis planning (Egelhoff and Sen, 1992). Two types of prevention strategies can be identified: acquiescence and manipulation (Oliver, 1991). Acquiescence involved conscious and strategic efforts to become Y2K compliant both internally as well as externally within the supply chain to avoid the potential ripple effect of failures through entire industries due the interdependence and interconnectedness of organizations. Manipulation strategies which involve the purposeful and opportunistic attempt to influence or control supply-chain companies have been exercised by some large organizations such as General Motors, Ford, Sears and Roebuck, or Visa International (Hoffman and Scheier, 1997). Preparation involves contingency planning which focuses on examining the possibilities of losing an IT system and
formulating procedures and strategies to minimize the damage (Haag, Cummings, and Dawkins, 1998). Contingency plans can be categorized according to the degree of confidence they provide - from high-confidence, expensive full redundancy options to low-confidence, low-cost laissez-faire strategies.

**Reactive strategies**

Reactive strategies or crash management strategies involve activities done after a crisis happened in an attempt to contain the damage and recover from its effects (Pauchant and Mitroff, 1992). When companies fail to be proactive and opt for a “muddling through” (Lindblom, 1959) or fix-on failure approach, reactive strategies involve fixing year 2000 problems after they occur rather than trying to fix them beforehand (Yourdon, 1998).

**Interactive strategies**

Interactive crisis management strategies involve continual learning and reassessment to improve what has been done in the past. Huber (1991) proposes that an organization learns “if, through its processing of information, the range of its potential behaviors is changed”, p. 89). Organizational learning has also been defined as the process of improving actions through better knowledge and understanding (Fiol and Lyles, 1985). Argyris (1977) distinguishes between two types of learning: (1) single-loop or adaptive learning which enables the organization to carry on its present policies or achieve its objectives; and (2) double-loop or generative learning where the correction leads to a change in organizational norms and results from proactive organizational behavior and not in direct response to environmental events. The nature of learning and the way in which learning occurs are determined by the organization’s culture or subcultures (Nevis, DiBella, and Gould, 1995).

**Learning Orientation**

An organization’s learning orientation refers to a firm’s propensity to value generative and double-loop learning and represents a mechanism that directly affects a firm’s ability to question old assumptions (Baker and Sinkula, 1999). This learning orientation has been conceptualized as giving rise to a set of organizational values that influence the propensity of the firm to create and use knowledge (Sinkula, Baker, and Noordewier, 1997). Three organizational values associated with the predisposition of the firm to learn are commitment to learning, open-mindedness, and shared vision (Sinkula et al., 1997).

**Research Model**

The research model shown in Figure 2 synthesizes both organizational learning and crisis management perspectives of the Y2K problem.

**Research Methodology**

A questionnaire will be mailed to a random sample of top IS executives obtained from the most recent edition of the Directory of Top Computer Executives who are
assumed to be in the best position to answer questions related to their year 2000 conversion efforts. The instrument which is currently being developed will include questions regarding background information such as title, industry, and number of IS employees. Questions pertaining to the date when Y2K remediation began, the relative focus on remediation versus contingency planning, and conduct of a post Y2K audit would assess what type of Y2K strategy was pursued. The learning orientation of the organization will be operationalized in terms of an 18-item scale developed by Sinkula et al. (1997). Outcomes will be assessed in terms of the extent to which companies experienced problems and implemented changes in a number of IT practices as a result of Y2K. Also of interest is if a company conducted a post Y2K audit. In light of the fact that companies do not wish to openly discuss their crisis experiences (Kim, 1998), complete anonymity will be assured. Preliminary results should be available at the AMCIS 2000 conference in August.

**Expected Contribution**

The paper developed a research model describing the relationship between Y2K strategies and anticipated learning outcomes. One contribution of this study would be its extension of crisis management research to IS. The proposed research would also help managers in their endeavor to improve IT project and disaster management by promoting proactive and interactive instead of reactive strategies. Finally, the research encourages longitudinal research to assess learning impacts over time.

**References**


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