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Adoption of Computer-Mediated Communications in the Private, Non-Profit Sector

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1. Introduction

There has been an explosive increase in the use of computer-mediated communications such as electronic mail and the Internet. This growth is measured partially in terms of number of nodes on the Internet, and the number of users. (Lewis, 1993; Tetzeli, 1994; TIC/MIDS, 1995). Nonetheless, the private non-profit sector has shared little in this growth. There is considerable literature on the organizational adoption and diffusion of telecommunications technologies, but little information is available on the use of these technologies in the private non-profit sector. Excluding educational institutions, private non-profit organizations are estimated to represent a small portion--about 3.3 %--of the overall Internet community (TIC/MIDS, 1995).

In addition, a previous study suggests that adopters of the Internet or email make up only a small portion of private non-profit organizations (Birdsell, 1995). Our research-in-progress builds on this earlier study. We will measure the relationship of various factors such as size, structure, and technology policy with the utilization of computer-mediated communications in these agencies. We will report the results of this research at the Americas Conference on Information Systems in August 1996.

2. The Preliminary Study

In November 1994, Baruch College surveyed 120 private non-profit organizations in New York State as to their use of various types of software and hardware (Birdsell, 1995). Eighty-six organizations responded, with a response rate of 72%. The identities of both the participating agencies and the responding persons were anonymous.

The data from this preliminary study showed that use of computer-mediated communications was low: only 17% of the organizations reported using the Internet, and 26% reported using electronic mail. After excluding agencies that used mainframes or minicomputers, Internet use dropped to 9 percent, and electronic mail dropped to 16.5 percent. Fully three-quarters of the organizations used only personal computers, and the low usage of computer-mediated communications among PC-only agencies suggests weak networked infrastructures in those agencies.

3. The Research-In-Progress

The current study, while building on some of the information from the preliminary study, also examines whether relationships exist between several organizational characteristics and adoption of computer-mediated communications in private non-profit organizations. Although there is extensive literature available on diffusion in the business and government sectors, the same is not true of private non-profit organizations. This research will provide some means for comparing some phases of diffusion, namely initiation and adoption, across sectors.

We have utilized several measures commonly used in research on IT adoption in the business sector. The main organizational factors in this research will be size, centralization, formalization, and integration in the organization. These will provide a common basis for comparing adoption and correlated factors across sectors. The study also measures other factors such as: the forcefulness of the agency's technology policy; the level of managerial support for greater adoption of computer-mediated communications; and the

influence of external funding organizations on the agency's adoption of computer-mediated communications.

3.1 Organizational Factors

The main organizational factors studied are centralization, formalization, integration, and size. Centralization is the concentration of decision-making power to a small segment of the organization. Formalization is the codification of knowledge, processes, and activities into formal procedures that are used in decision-making. Both tend to decrease the discretion of individuals in the organization, and have been found to have negative relationships with the initiation and adoption of innovation. Integration is the free movement of ideas, information, and activities across functional boundaries, and is positively associated with innovation. To measure centralization, formalization, and integration, the study will utilize several multi-item scales validated in other diffusion studies (Grover, 1993).

There have been mixed results in correlating organizational size to adoption. Larger organizational size implies greater economies of scale, infrastructures that support innovation, and greater slack resources that are available for investment in innovations. Organizational size is believed to correlate with IT adoption (Lind, Zmud & Fischer, 1989; Pennings & Harianto, 1992). On the other hand, large size may also imply less flexibility and more centralization, and sometimes has no correlation to adoption (Grover & Goslar, 1993).

The study will use three different items to measure size. Many private non-profits generate only part of their budget through revenues derived from sales or services, with a considerable amount of the balance made up by private donations or public funding. Rather than revenues, the annual budget may be a better indicator of the private non-profit's size. Another typical measure of organizational size has been the number of full-time equivalent (FTE) employees (Bretschneider & Wittmer, 1993). Private non-profits often utilize volunteers, and the number of volunteers may deflate the payroll size. The combination of budget size, FTE employees, and FTE volunteers will be a more robust, multi-dimensional measure of size (Ferns & Palley, 1995).

3.2 Technology Policy

The technology policy reflects the agency's determination to keep ahead of competitors technologically. IT is often used as a tool to maintain a competitive edge. An assertive technological policy has been shown to facilitate IT adoption. This study utilizes a multi-item scale validated in another diffusion study (Grover, 1993).

3.3 Champions, Sponsors, & External Motivators

The existence of a champion or a sponsor has often shown a positive correlation to adoption of innovation, and has been well documented (Leonard-Barton & Deschamps, 1988). Management support, or 'sponsorship,' fosters the adoption process (Raho, Belohlav & Fiedler, 1987) and the infusion process afterwards (El Sawy, 1985; Cooper and Zmud, 1990). Public agencies tend to place MIS directors lower in the organizational hierarchy than does the private sector, hampering the MIS director's influence in the public organization (Bretschneider, 1990).

Non-profits, like public agencies, do not function in a traditional 'marketplace' environment, although competition certainly exists in different forms. It is possible that, like public agencies, non-profits place their MIS directors lower in the organizational structure. Additionally, non-profits have boards of directors that might provide additional champions and sponsors for the adoption of telecommunications technologies. This study includes questions that identify the existence and rank of champions and sponsors, and whether they are on the board of directors, rather than employees of the organization.

We will also examine the influence of external funders, either as private foundations, or as various levels of government agencies that provide grants, contracts, or regulation. The measures for this factor will determine whether any of these external funders requires or encourages the use of computer-mediated communications.

3.4 Sampling Approach

Surveys are being sent to one thousand private non-profits in the New York/New Jersey metropolitan area. The surveys that are returned will be linked to each organization's Form 990 for verification of some of the responses. Form 990 is a standardized form designed specifically for financial and tax reporting of private, non-profit organizations. Form 990s are public information, and is now used by 30 states in the United States. This sampling method should produce a fairly representative range of private non-profit organizations. Nonetheless, the concentration of these agencies in one geographic region may impede generalization of the findings to all private non-profits.

3.5 Hypotheses

The following are a sample of the hypotheses we will test:

Hypothesis 1: "Larger private non-profit organizations will have greater utilization of telecommunications." As opposed to the mixed results in the business sector, size will have a more consistent positive relationship with adoption. We base this hypothesis on several premises specific to the private non-profit sector, such as funding constraints, which will increase the importance of slack resources and economies of scale.

Hypothesis 2: "Private non-profit organizations with external motivators will have greater utilization of telecommunications." External motivators, such as private foundations or government agencies, can act as external sponsors or champions for technology, especially with the extra leverage of resource allocation. Because private non-profits are largely dependent on these external agencies for funding, this factor may function in some ways as a strategic alliance that pushes technology.

Hypothesis 3: "Organizations with more assertive technology policy will have greater utilization of telecommunications." We wish to measure this factor with a focus on finding how many private non-profits DO NOT have technology policies, and if there is any relationship between the lack of policy and lack of computer-mediated communications in the agency.

4. Discussion

The non-profit sector has been relatively overlooked in the study of IT diffusion. This study will contribute to our knowledge of IT diffusion for it provide a basis for evaluating whether IT diffusion models are generalizable to this sector. Also, because the non-profit sector embodies a growth area for the IT industry, there are efforts to expand it as a market for information products and technologies. Last, the non-profit sector encompasses organizations such as social service providers. There is increasing emphasis on the use of tele-communications technologies in this area because of impending managed care and block grant models of funding for these organizations.

We will be able to present some preliminary results at the Americas Conference on Information Systems in August 1996. We will also include other hypotheses and their findings at that conference

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