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ELECTRONIC-MAIL DISCUSSION GROUPS: AN INVESTIGATION OF THE STRUCTURAL AND BEHAVIORAL FACTORS INFLUENCING THEIR SUCCESS

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Introduction:

This research is targeted at an investigation of the structural and behavioral characteristics influencing the spread of electronic mailing lists and discussion groups. The research model explores the influence of structural characteristics of the electronic discussion group, subscriber group characteristics, and information intensity on the success and value of the electronic discussion group.

E-Mail, ListServers, and Mailing Lists:

The internet has engendered the evolution of several channels of electronic communication. Person-to-person electronic mail (e-mail) is the most elementary and common form of communication on the internet. The core process of electronic mail has three fundamental characteristics that condition its use as a communication medium - it is *asynchronous*, it is *fast*, and it is essentially *text-based* [Culnan and Markus 1987]. A fourth characteristic of e-mail is that it can be directed to a group of people as easily as it can be sent to a single person, and as such e-mail can be used for (electronic) communication between groups of people. This provides for the formation of discussion fora on topics of mutual interest to a group of persons. The ListServer is an automated server software that manages the formation of electronic mailing lists (discussion groups) and the distribution of e-mail between a group of interested users. Each listserver can be host to multiple discussion groups, with each list having its own subscriber base.

Motivation for Research:

Yates and Orlikowski [1992] in their discussion of genres of organizational communication, observe that the evolution and widespread use of e-mail in organizations has set the stage for the emergence of new computer-mediated genres of organizational communication. We need to gain an understanding of effective ways of applying computer and communications technologies to help people work, organize, acquire and disseminate information, and learn. An appreciation of the dynamics of interaction in distributed and asynchronous electronic group contexts is critical to the effective utilization of evolving information infrastructures in organizations.

The structural and behavioral aspects associated with the growth and success of electronic discussion groups provide a unique perspective on factors that influence the dynamics of the formation of (virtual) electronic groups and the mode and form of communication between such groups. There is a growing interest in these phenomena - in e-mail as a medium of (rich) communication and in the dynamics of computer-mediated groups. A study of these phenomena has significant implications for the development of virtual knowledge networks, the formation of virtual organizations and structures, and the growth of electronic communication. This study aims at conducting research into this phenomenon.

While Markus [1994] investigates the power of information richness theory relative to alternative social process theories, Lee [1994] employs hermeneutic interpretation to study and explain managerial use of e-mail as a communication medium. Sproull and Kiesler [1986] argue that electronic mail does not simply speed up the exchange of information but leads to the exchange of new information as well.

Finholt and Sproull [1990] suggest argue that electronic communication influences the dynamics of the group communication process (group attributes, group processes, and organizational consequences). In a study of e-mail use in a Fortune 500 company, they observed that 80% of e-mail received by employees was from distribution groups, both internal and external to the organization. It was also observed that the majority of group mail was described as 'nonredundant', i.e., the receiver would not have received this information in any other way. Mail from electronic groups appeared to speed up the dissemination of information that people would have otherwise received more slowly through conventional means.

The Research Model:

The path diagram presents the structural model under investigation in this paper. Structural factors associated with the electronic discussion forum are expected to influence the growth and success of the discussion group. The factors under investigation include degree of moderation, degree of facilitation, distribution frequency, specificity of subject, and sponsorship of the mailing list. User group characteristics such as group composition, number of subscribers, and number of contributive subscribers, are hypothesized to be influenced by the structural characteristics of the group as well as influence the success of the discussion forum. We also incorporate the idea of information intensity into the model, and the degree of information intensity is expected to moderate (inversely) the influence of structural characteristics on success measures. Information intensity is measured in terms of the frequency and average length of mail.



Path Diagram for the Research Model

The success of a mailing list can be analyzed both in static and in dynamic terms. Under a static analysis of the success of a discussion list, one could use measures of subscriber-base, contributor-base, and frequency and length of contributions as indicators of success. But these measures implicitly assume that a large discussion group is a successful one, and vice versa. Another approach to measuring success of a discussion group would be to ascertain the perceptions of the subscribers of the list on items relating to usefulness and interest of information, information content, knowledge dissemination, and learning associated with the discussion group. This could introduce a bias, in that current subscribers may have a favorable disposition towards the list. But since we are chiefly interested in tracking the perceptions of the participants in the electronic discussion, this issue can be overcome. In this study, we propose to conduct an e-mail survey of subscribers of the discussion groups to obtain data on the perceived success of the discussion group. A dynamic analysis of the electronic discussion group would also focus on the temporal growth of the list (including subscription and cancellation) and event-based analyses of the growth patterns. In the current phase of the study, we do not use a dynamic approach to determine the success of electronic discussion groups. A dynamic analysis of the growth of electronic mailing lists will be taken up in the second phase of the study.

Data Collection:

Recent estimates (March 1995) indicate that there are about 9000 (public and private) internet-based e-mail lists. The authors developed a database of 6233 mailing lists on the internet, with information on the host listserver, and the title and subject description of the mailing lists. Data relating to the structural characteristics of the discussion groups was also extracted. For the purposes of this study, we intend to investigate lists primarily related to the business management, information systems, computer science, and engineering subject areas. A shortlist of about 150 groups focused on these topics will be used in the final analysis. Data on frequency and length of messages will be generated using programs designed to cull the data from the archives of the mailing lists.

Information on subscriber-base and subscriber characteristics is also being collected through requests to the owners (maintainers) of the mailing lists. The research model is being refined using preliminary data available.

Future Potential and Implications for Research:

This research has implications for both academic and business organizations. In an increasingly networked world, electronic (network-based) communication is expected to take centrestage in organization communication [Yates and Orlikowski 1992; Lee 1994; Markus 1994]. In an electronic exchange, social and contextual cues (job titles, hierarchical position, social status, race, age, appearance) that usually regulate and influence group dynamics in face-to-face communication are absent or attenuated. The context (formal or casual) is poorly defined, and the persons involved in the exchange have access to outside information without it becoming apparent in the computer interaction. These factors have significant implications for group communication and decision-making in organizations. The investigation of the factors influencing electronic discussion fora also has implications for the development of virtual knowledge networks and for the dissemination of information in research, teaching, and business environments.

There is significant potential for future research in this area. As already suggested, a dynamic or even hermeneutic analysis of the success and growth of electronic discussion groups is desirable.

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