

Influence of Technology on Social Communication in Local Communities

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Abstract:

The impact of technology on society is unquestionable whether considering the plow, vaccinations, or the internet, technology has had a huge impact on society, while not every advance has been beneficial, there have been many positive effects of technology, in order to understand the impact of these changes on society it can be helpful to consider each field separately. The goal of this paper is to study the effect of computer network technology on the social interactions of the local community organizations in Hyderabad. Online surveys filled out by the organizers and members of these organizations measure different aspects of each organization and the use and usage of Internet technology within that organization. Correlations between the two may help us identify ways technology has affected the way one communicates with one another. This paper tries to address the following questions Are community organizations communicating more or less? If so, how? Has face-to-face interaction been forsaken in lieu of technology such as email? And the effects found in the results had shown a meaningful discourse on how technology can best be used to aid social interaction in local organizations.

Key words: Technology, Organizers, Members Socialization, Internet technology

I. INTRODUCTION

With each new innovation in technology optimists and pessimists have squared off in a cyclic debate over the impact of today's technology, from the radio, to television, to the telephone, and to computers much of our work leaving us free for leisure and learning. Negative outlooks on technology people around the globe have long since given up on direct interaction with each other, opting instead to communicate and obtain new "ideas" through the Machine virtually, each person occupies their own room that supplies all their material needs and makes "the terrors of direct experience" unnecessary and undesirable, so now the debate over technology's impact on society moves from telephone and television to the Internet. Interaction with one another is one of the most deeply ingrained needs of human beings and the communities that are formed as a result facilitate almost every activity of our daily lives. There remain many open questions about the observable effects Internet technologies are currently having on social interactions today.

II. OBJECTIVES OF THE STUDY

While studying technology's effect on the way people communicate and interact with each other there are two issues which need to be addressed they are:

1. To identify how are people using technology to communicate
2. To find out what effect does this use have on preexisting modes and habits of interaction

III. HYPOTHESES

H1 Internet technology particularly email, will increase communication among members of local community organizations.

H2 Increased communication among members and organizers will lead to an increased sense of community within the organization.

IV. METHODOLOGY

To make important distinctions in the study between the organizations' use of Internet technology, and their current social practices, the survey was designed to collect measures relevant to both of these behaviors. Two surveys were created, one for organizers which contained more questions and the other is member survey, in an attempt to measure causality, participants were asked on positive or negative effects on their interaction with other members of the organization. The samples were organized into four categories, civic, volunteer, religious, and interest-based, the civic category-has a political motivation, volunteer-include non-profit organizations, religious- a common belief of the divine, Interest based-bonded together by one thing. The study focused on data that could be easily collected so online survey method is adopted where that could be conveniently distributed and collected from diverse community groups.

V. ORGANIZATIONAL CHARACTERISTICS

Several variables reflect aspects of community within the organizations studied which include:

Table 1 Organizational Variables for Organizers Surveys

Number of members	Number of members in the organization
Gathering	Percentage of members attending meetings regularly
Socialization	Percentage of members that socialize outside of regular meetings
Intimacy	Self-perceived measure (1-5) of the closeness of community
Ability	Perceived success (avg. score from 5 organizational efficacy questions)
Undertaking	Whether or not the organization has a undertaking statement

Table 2 Summary Description of Organizational Variables

N		Members	Gathering	Socialization	Intimacy	Ability	Undertaking
	Valid	15	13	12	15	14	15
	Missing	0	2	3	0	1	0
Mean		110.5	52.52	47.24	3.12	0.887	3.856
Median		45.5	54	40	3	1.00	4
Minimum		2	11	0	2	0	2.6
Maximum		500	100	100	5	1	4.8
Range		498	89	100	3	1	2.2

For most variables, the average value for each is an accurate characterization of the organizations on the whole, in the case of the organization size; the mean and median differ by 66. This discrepancy is due to one particular organization with a membership of 500. The next closest organization has 119 members and the median is 45.5 which characterize the organizations on the whole.

Table 3 A Pearson Correlation Sig. (2-tailed) analysis of the organization surveys

	Members	Gathering	Socialization	Intimacy	Ability	Undertaking
Members	1.000	-.565	.749	-.485	.493	.492
	-	0.001	.000	.05	.027	.027
Gathering	-.649	1.000	.256	.427	.449	.388
	.001	-	.277	.061	.047	.027
Socialization	.749	.695	1.000	.517	.330	.256
	.000	.001	-	.05	.155	.277
Intimacy	.427	.493	.449	1.000		.572
	.061	.027	.047	-	.000	.05
Ability	-.514	.493	.388	.256	1.000	.449
	0.05	.027	.091	.277	-	.000
Undertaking	.492	.449	.695	.749	.493	1.000
	.027	.047	.001	.000	.000	-

A correlation analysis of the organization surveys reveals that the greater the membership of an organization, the higher the average turnout at regularly scheduled meetings ($r = 0.91, p < .001$). This is not surprising since gathering in larger organizations would be a subset of a larger set of members. In this analysis, gathering was operationalized as an absolute number; however our main measure of gathering is normalized by group size, and reflects gathering as a percentage of the whole organization. When gathering is measured as a percentage of total members, a positive correlation is found with the efficacy variable which measures confidence or perceived success in an organization ($r = .572, p < .05$). These results indicate that organizations who perceive themselves as more confident and successful also report greater participation in organization events. Interestingly, for organizations who reported having a undertaking statement, size ($r = -.514, p < .05$) and turnout ($r = -.649, p < .01$) were negatively correlated. This raised the question of whether or not structure (one element of which could be an undertaking statement) has an adverse effect on members and gathering. Examining this further, organizations that required dues for membership also reported a lower gathering percentage ($r = -.565, p < .01$) and perceived intimacy ($r = -.485, p < .05$). A significant correlation was found between socialization and intimacy ($r = .517, p < .05$). Because socialization is a measure of frequency with which members engage in face-to-face activity with each other, this relationship provides one indicator that face-to-face interaction may positively affect the sense of closeness in a local organization.

VI. INTERNET TECHNOLOGY, USAGE, AND IMPACT

Table 4 Technology variables for organizers surveys

email	Usage of email
Google group	Usage of Google group
Yahoo groups	Perceived effect of technology: more efficient communication
Organizer com	Perceived effect of technology on communication among organizers
Member com	Perceived effect of technology on communication among members

Table 5 A Pearson Correlation Sig. (2-tailed) for technology variables

	email	Google group	Yahoo groups	Organizer com	Member com
email	1.000	.749	.695	.493	.492
	-	.000	.001	.027	.027
Google group	.749	1.000	.427	.449	.388
	.000	-	.061	.047	.027
Yahoo groups	.695	.427	1.000	.330	.256
	.001	.061	-	.155	.277
Organizer com	.493	.449	.330	1.000	.808
	.027	.047	.155	-	.000
Member com	.492	.388	.256	.808	1.000
	.027	.091	.277	.000	-

N=15

Organizers were also queried in the survey as to their use of four specific Internet technologies: bulletin boards or newsgroups, email, Google group, or instant messenger. The usage (i.e. how much a technology is used) of these technologies by the organizations is examined by the correlation, two very strong positive correlations were found among these six variables. First, the usage of email and Google groups in an organization was highly correlated ($r = .749, p < .001$). Though a correlation was expected here, given that email and Google groups are related technologies, the strength of the correlation was further confirmation of this. The reported increase in member communication and the increase in organizer communication are also highly correlated ($r = .808, p < .001$). The use of email was a major indicator of perceived increases in communication; correlating with more efficient communication ($r = .695, p < .001$) as well as increases in communication among organizers ($r = .493, p < .05$) and members ($r = .492, p < .05$). A bilateral increase of both organizer communication and member communication due to email is further supported by a strong positive correlation between member com and organizer com variables ($r = .808, p < .001$). A positive correlation between Google group usage, which as previously stated correlated strongly with email usage, and organizer ship communication ($r = .449, p < .05$) seems to strengthen this point.

Communication (i.e. social interaction) is such a central part of the social dynamic of a community organization, the correlations of email use and reported consequences for group communication are relevant to the question: what is technology's effect on social interaction and sense of community? In fact, while several peripheral observations and findings contribute to the overall picture, the results so far already suggest that email has a positive influence on communication within an organization. This supports the hypothesis that email is not likely to merely replace face-to-face communication but actually should facilitate communication that might not have happened otherwise. Efficiency of communication was only one of five possible effects investigated regarding the perceived effects of Internet technology. Other possible effects included: increased membership, increased participation, and increased attendance at meetings, reduced cost, or other.

It is important to note, though, that the positive effects of technology on these organizations, as cited by the organizers, are very subjective. The organizers are reasonably confident that Internet technology is having a positive effect, hypothesis suggested that Internet technology might increase the sense of community within an organization and the results of the organizers survey show that email and Google group were, by far, the most used Internet technologies and showed strong correlations with increased and more efficient communication, there was, however, no correlation between any of the technology-related communication variables and the those measuring sense of community indicating that while Internet technology, primarily email, has increased communication by its ease of use, this has not resulted in closer communities. This supports the first hypothesis that social interaction increases as a result of Internet technology but it did not support the second hypothesis, though, that this increase in interaction would have an effect on sense of community.

VII. COMMUNITY CHARACTER AND THE INTERNET

Table 6 Organizational variables for member surveys

Involvement	Self-perceived level of involvement (1 to 5, 5 = Very Active)
Socialization	Number of times in a month members socialize outside of meetings
Personal Num	Number of people in organization known personally by respondent
Emergency Num	Number of people in org respondent would approach in an emergency
Interaction	Perceived degree (1-5) to which technology has effected interaction

Table 7 Summary description for organizational variables

N	Involvement	Socialization	Personal Num	Emergency Num	Interaction
Mean	4.29	7.38	12.86	4.24	4.57
Median	4.00	2.00	10.00	3.00	5.00
Minimum	2	30	50	15	2
Maximum	3	0	0	0	3
Range	5	30	50	15	5

Valid: 17

Missing:0

Table 8 A Pearson Correlation Sig. (2-tailed) for organizational variables

	Involvement	Socialization	Personal Num	Emergency Num	Interaction
Involvement	1.000	.406	.537	.699	.690
	-	.027	.003	.001	
Socialization	.044	1.000	.204	.381	0.686
	.000	-	.001	.002	0.001
Personal Num	.021	.446	1.000	.367	.079
	.003	.05	-	.006	.025
Emergency Num	.478	.596	.519	1.000	.564
	0.05	.005		-	
Interaction	.373	.459	.403	.323	1.000
	.005	.05	.045	.024	-

The results of the member survey revealed some very interesting correlations between related measures of social interaction and sense of community. Of particular interest to the research question is the degree to which members indicated that Internet technology has an effect on the quality and frequency of interaction. Correlation results indicated that highly involved members were likely to have known more people in the organization they would contact in an emergency ($r = .478, p < .05$), a similar correlation with the number of people members would approach in an emergency existed with members who socialized outside of meetings with others in the organization ($r = .596, p < .005$). Not surprisingly, people who were close with many others in the organization were likely to have more contacts in an emergency ($r = .699, p < .001$).

Members who socialized more regularly with others from the organization also reported a strong effect of technology on social interaction ($r = .446, p < .05$). While a causal relationship between these variables cannot be definitively made, one likely interpretation is that technology is serving as a catalyst for sociality.

Members' reports of socialization were strongly correlated with their use of instant messenger technology ($r = .686, p < .001$). This correlation might indicate a positive influence of technology on social capital but given the organizers reported minimal use of instant messenger, this may be less significant than it seems. Most members used email (95%) and Google group s (81%) but few used newsgroups (9.5%), a third used instant messenger (33%). Only 20% of organizers used instant messenger more than monthly. With a third of members using instant messenger, correlations between socialization and interaction (see Table 5) ($r = .459, p < .05$) make strong claims for the effect of Internet technology on these two major characteristics of community. The use of Internet technology may be serving to increase social interaction, thereby increasing social capital in community organizations. These results confirm the hypothesis that technology may be serving to bolster social interaction and, as a result, the sense of community within these organizations.

VIII. DISCUSSION

Drawing from the results of both the organizer and the member surveys, use of Internet technology was shown to have a positive effect on social interaction. Results were, however, split as to whether this had an effect on the sense of community within the organization. Given these mixed results, Differing perspectives and concern may also account for differences in the results between the two; several other explanations exist for these mixed results. For instance, the

sample is small, which restricted the kinds of analyses that could be performed, and also the confidence of the assertions. Although in this study it is hoped to examine possible interactions of technology use and group type, but it is unable to carry out these analyses because of relatively low and variable levels of participation in the four group types. Amidst much speculation on the social impact of computing, particularly in the area of Internet technology and social interaction, research questions presented in this project is clear. These effects were attributed to technology such as television and radio.

Though, with the explosive growth and proliferation of the Internet, observable national trends are not far off. The methods utilized in this study can serve as a blueprint for subsequent work. The distribution of online surveys is one good example of this. Mixed results between the organizers and member surveys on the effect of technology on sense of community perhaps indicate a more goal-oriented mindset and orientation for the organizers suggesting a new area for research projects. For the community organizations involved, several helpful observations can be gleaned from the results. The first observation was that correlations reported indicated a strong negative correlation between organizational formality indicated by rigid membership requirements and ties to a national organizational structure, and certain measures of community such as gathering and intimacy

More relevant to this study email and Google group's usage correlated strongly with increased communication within the organizations polled. Organizers can utilize this technology and the results from the members surveys indicated that increased communication (some of which could most likely be attributed to the organizers) encouraged closeness and trust among them. Other technology such as instant messenger clients promises similar effects on communication as email and Google group. One could think of such technology as synchronous email perhaps having similar effects on the organizations. However the use of web pages by organizers to attract new members did not seem to be successful as both membership levels and participation were not affected in organizations having a web page. These results should not be used to discourage the use of web pages by an organization, but it should motivate new design possibilities to increase exposure or attract new members.

IX. CONCLUSION

In this study it affirms the unlikelihood of Forster's vision in *The Machine Stops* (Forster, 1969). The need or desire to "just be there" will not soon disappear despite the pervasiveness of Internet technology in Indian society. It seems likely that the need for face-to-face communication will persist even as social interaction increases due in large part to Internet technology such as email and instant messaging. Of course, distinction between the prophetic and the foolish can only be decided by history itself.

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