

SOCIAL INFLUENCE MODEL AND E-MAIL USE IN GRASSROOTS  
ORGANIZATIONS

A Thesis

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfilment of the Requirements for the Degree of

Master of Science

by

Sharon Miriam Shafir

January 2008

© 2008 Sharon Miriam Shafrir

## ABSTRACT

Recent studies indicate that grassroots organizations are adopting new communication technologies (specifically the Internet) with greater frequency in order to increase their effectiveness. The Internet was a critical innovation for the business community in the 1990s. For over a decade, the corporate realm's zeal for adopting information and communication technology (ICT) had a powerful influence on the managerial practices of other types of organizations, such as governmental and not-for-profits (NFP). Many social and environmental groups, special interest advocates, grassroots organizations, activists, and civic networks are gradually expanding their Internet use and related online applications (e.g. e-mail) for civic engagement purposes. Despite the potential benefits of adopting the Internet as a means of boosting civic participation, diffusion and utilization of this, or any other, innovative technology does not happen automatically.

This study examined the effects of social influences on the use of e-mail in a not-for-profit (NFP) grassroots organization in an urban community. The social influence model of technology use (SIMTU) was applied to examine self-reported attitudes toward, and perceptions of the usage of e-mail in the studied organization. The study explored social context's and opinion leadership's influence on members' media choices and beliefs, using ethnographic qualitative research methods in the form of in-depth interviews and observations.

The present research is unique in its approach because it considers NFP community-based organizations to be different from business-like NFP (e.g. universities and museums), as well as other corporate organizations. Building on past research and following the SIMTU framework, this case study explored how social influence in NFP grassroots organization is different from social influence in other

types of organizations. In addition, the study explored who the opinion leaders are in such an organization, and to what extent do these leaders impact members' e-mail use.

72% of the target population participated in the study. The data included 26 in-depth interviews, along with questionnaires, as well as 10 participant observations on-site. The study examines the social context within and around the organization. Findings indicate low levels of e-mail use among organization members; participants reported being influenced by norm behaviour and a preference for alternative, traditional, communication media (e.g. face-to-face interactions and phone conversation). Qualitative data provided evidence of social influences, e.g., direct social pressures, organizational norms, and the use of stories to emphasize beliefs and actions that were considered appropriate in this organization. Furthermore, the present research found modest but pervasive social influence from constituents and community norms on members' media attitudes and usage.

All of this suggests that the uses and perceptions of communication technology can be better understood in NFP grassroots community-based organizations if the social environment is explicitly considered. The thesis ends with a discussion of possible theoretical expansion of the SIMTU, practical implications, and suggestions for further research.

## BIOGRAPHICAL SKETCH

Sharon M. Shafrir received a B.A. degree from Bar-Ilan University in her native Israel, in the area of Middle-East History and Political Science. Her undergraduate work focused on the Israeli-Arab conflict, and its political and social effects. Following college, she worked for several Israeli Parliament Members as an advisor, and later became the Head of the Public Information & Relation Unit at the esteemed municipality of the Misgav Region, Israel.

After nearly seven years of professional work, she joined the Communication programme at Cornell University where her research focus was uses of information & communication technology (ICT) to facilitate public policy planning. For the past few years Sharon has been residing in Rochester, NY with her husband and two sons (ages 2 years and 3 months), where she conducts most of her research on urban community-based organizations. Upon her successful completion of her Master's degree, she hopes to work for a non-for-profit organization promoting the development of strong urban communities.

In memory of  
Jacqueline A. Frank  
1945-2007

A true lady who had the gift of generosity

## ACKNOWLEDGMENTS

This thesis marks the conclusion of a three year academic endeavour in the field of Communication and an extensive field-study. It would not have been possible without the assistance, encouragement, and good will of many teachers, friends, and family members. I am privileged to have worked with these individuals and could not consider this report complete without explicitly acknowledging the contributions of the following individuals.

Firstly, sincere thanks to my M.S. thesis advisor, Professor Y. Connie Yuan, for her guidance and support throughout the course of this research. I am especially grateful for her patience and commitment to my research these past months. I would also like to express special appreciation to my committee members: Professor Katherine A. McComas, for her heartfelt guidance and her wise personal and academic advice; and Professor Tarleton Gillespie, for his interest and support throughout my course of studies.

In addition, my sincere thanks to Professor John Foresters of the City & Regional Planning Department at Cornell University, for suggesting an inquiry into the uses of information & communication technology in the public realm, and for all of his subsequent input.

I want to include the following faculty members at the Communication Department at Cornell University: Prof. Ronald Ostman, Prof. Geri Gray, Prof. Bruce Lewenstein, and Prof. Clifford Scherer for their encouragement of, and interest in my work; as well as staff members: Mr. Peter Van Do, Ms. Ann Bianchi, Ms. Danielle Dean, Ms. Lynn Alve, and Ms. Katie Stockwell, for their friendship and professional assistance. Furthermore, I acknowledge my fellow graduate students for making this challenge entertaining as well as educational, the Bureau of neighbourhood Initiatives

at the City of Rochester for municipal data, and the participants of this study for their cooperation.

Special thanks are extended to the following individuals whose contribution to this thesis is priceless: Mr. John Borek – for taking me under his wing and introducing me to individuals and organizations of the urban not-for-profit grassroots domain in Rochester, NY. Together with his wife – Jackie Levine – he made my family appreciated members of their household. Mrs. Meredith Aquila – a colleague but most important, a friend, for the “all-nighters”, wise comments and notes on my manuscript, for the ability to keep everything in perspective, and for the wonderful sense of humour.

On a more personal level, I thank the people who made Rochester home for me and my family: Alan and Bunny Bernstein, to whom I am forever in debt for opening their home and their hearts to us; and Betsy Benedict for helping us “hold fort” on innumerable occasions. In addition, I acknowledge the moral support and votes of confidence of two other individuals, from my native Israel, whom I am privileged to call my mentors and friends: Ms. Roma Manor, and Mr. Arik Raz.

The completion of my academic endeavours was made possible due to the love and encouragement of my family: My parents, Carol Naim & Yosseph Naim, my siblings, my mother- and sisters-in-law, and the Frank family.

My heartfelt appreciation to my wonderful husband and better half, Shai – a successful academic on his own merits - for his unconditional love, support and encouragement, and to our two gorgeous sons, Ivry & Yoav, for teaching me that slowing down is not necessarily a bad thing.

## TABLE OF CONTENTS

Biographical Sketch	iii
Dedication	iv
Acknowledgments	v
Table of Contents	vii
List of Figures	viii
List of Tables	ix
Chapter 1: Introduction	1
Chapter 2: Theoretical Background	5
Chapter 3: Methods	14
Chapter 4: Results	27
Chapter 5: Discussion & Conclusions	55
Appendix A	70
Appendix B	73
Appendix C	76
Appendix D	79
Appendix E	81
References	83

## LIST OF FIGURES

Figure 1 – The Social Influence Model of Technology Use	12
Figure 2 – Proposed Expansion of SIMTU	64

## LIST OF TABLES

<b><u>Table 3.1:</u></b> Response rate distribution	23
<b><u>Table 4.1:</u></b> Education and residence	29
<b><u>Table 4.2:</u></b> Education and organization membership	29
<b><u>Table 4.3:</u></b> E-mail use and organization involvement	31
<b><u>Table 4.4:</u></b> Interaction with stakeholders	39
<b><u>Table D.1:</u></b> Invitation log summary	79

## CHAPTER 1

### INTRODUCTION

#### *Adapting to Change: Online Communication Use in Grassroots Organizations*

Non-governmental organizations (NGOs) and not-for profit (NFP) grassroots organizations have increasingly been perceived by society as having the capacity to improve democratic processes, encourage citizen participation in civic life and strengthen social networks (D. Lewis & Madon, 2004). Traditionally, grassroots organizations have participated in the political process by relying on face-to-face interaction as well as conventional communication media (e.g. telephone, post mail, and mass media) to engage their constituents and obtain their involvement (Dahlgren, 2004; Kellogg, 1999; McLeod, Scheufele, & Moy, 1999; McLeod et al., 1999). However, more recent case studies around the world indicate that grassroots organizations are adopting new communication technologies (specifically the Internet), with greater frequency to increase their effectiveness (Froehling, 1997; Illingworth, Williams, & Burnett, 2002; Lebert, 2003; O'Lear, 1999; Park, 2002; Postmes & Brunsting, 2002; J. Wood, 2005; Yerxa & Moll, 1994).

The Internet was a critical innovation for the business community in the 1990s. For over a decade, the corporate realm's zeal for adopting information and communication technology (ICT) had a powerful influence on the managerial practices of other types of organizations, such as governmental and NFPs (Still, 2006). Many kinds of social and environmental movements, special interest organizations, grassroots organizations, activist groups, and civic networks are gradually expanding their Internet use and related online applications (e.g. e-mails) for civic engagement purposes with the goal of allowing citizens to develop different levels of political engagement (Bimber, 1999; Dahlgren, 2000; J. E. Katz, Rice, & Aspden, 2001).

Despite the potential benefits of adopting the Internet as a means of boosting civic participation, diffusion and utilization of an innovative technology does not happen automatically.

*Diffusion of technology use & the social influence process*

Diffusion processes have been a longstanding concern of organizational theorists and researchers (Rogers, 1983). Researchers have concentrated on the formal (e.g. official policy) and informal (individual worker's initiative) adoption of new technologies in intra-organizational settings in order to better understand how these innovations come to gain or lose popularity within organizations once they are introduced (L. K. Lewis & Seibold, 1993; Lind & Zmud, 1991). Many of these studies grounded their theories in technological determinism, suggesting that technology proceeds along a path of its own making, inevitably bringing social progress along the way (Campbell & Russo, 2003; Contractor & Eisenberg, 1990). Technological determinism was challenged when later studies indicated that ICT use and adoption are not solely dependent on the technical features of the technology itself. Values and socially constructed norms can also influence the adoption and use of communication technology (Contractor & Eisenberg, 1990; Fulk, 1993; Fulk, Schmitz, & Steinfield, 1990).

Rogers' (1983) diffusion of innovation theory suggests that the rate of adoption of an innovation may be explained by the innovation's characteristics: relative advantage, compatibility, complexity, trialability<sup>1</sup>, and observability<sup>2</sup>. Empirical research (Charlton, Gittings, Leng, Little, & Neilsen, 1998; O'Callaghan, 1998; Rogers, 2003; Still, 2006) found that adoption of new ICT in organizations was accelerated when

---

<sup>1</sup> "The degree to which an *innovation may be experimented* with on a limited basis" (Rogers, 2003, p. 16).

<sup>2</sup> "The degree to which the *results of an innovation are visible to others*" (Rogers, 2003, p. 16)

opinion leaders attributed benefits to the use of these technologies, as follows: ICT use is advantageous to the organization; it fits well with the workflow of the organization; it is simple to use and apply; technology can be tried before being implemented into the system; and its uses and benefits would be plainly visible to other organization members. Supporting the contribution of opinion leadership to adoption of new ICT, social influence theory of technology use argues that the introduction of ICT into a workplace promotes new social processes that influence the perceptions and use of ICT in an organization (Contractor & Eisenberg, 1990; Haythornthwaite, 2002; Hollingshead & Contractor, 2002; Jackson, Poole, & Kuhn, 2002; Lievrouw, 2002; Poole & DeSanctis, 1990; Yuan et al., 2005).

However, social influence processes can be experienced differently even in similar organizations, owing to each environment's unique social context (Fulk, Schmitz, & Steinfield, 1990). Within the not-for-profit community, organizations such as universities, museums and public institutes present different sets of priorities and contexts for the diffusion or rejection of ICT than grassroots organizations (O'Lear, 1999; Shah & Scheufele, 2006). While the non-grassroots NFPs adopt business-oriented incentives for incorporating e-mail use into their mission, many grassroots organizations have lagged behind in terms of expanding e-mail use, though e-mail use and other online applications have become increasingly useful in terms of individual civic engagement (Bimber, 1999; Dahlgren, 2004; J. E. Katz, Rice, & Aspden, 2001).

### ***Thesis Overview***

By making a case study of a single grassroots organization, this thesis aims to produce a better understanding of some of the social aspects concerning diffusion of Internet applications- specifically e-mail use- in such organizations. This study is a

result of keen interest in organized civic engagement and how new ICT may become a useful resource in helping grassroots organizations to affect public policy.

For the purpose of studying the social influence processes impacting e-mail use in a grassroots organization, the proposed research adopts the Social Influence Model of Technology Use (SIMTU) which was proposed by Fulk et al. (1990) and later extended by Yuan et al. (2005). Using a modified social influence model ,(Fulk, Heino, Flanagan, Monge, & Bar, 2004; Yuan et al., 2005) the research identifies peer and opinion leaders' perceived attitudes towards e-mail use as a set of incentives for individual adoption or rejection of this technology.

As mentioned above, diffusion of innovation theory (Rogers, 1983) argues that opinion leaders are one of the key factors affecting diffusion of new technologies in organizations. The thesis explores this argument by employing SIMTU to identify members' perceptions of the organization's opinion leaders' view of e-mail applications. Specifically, the thesis uses SIMTU to understand opinion leaders' social influences on individual e-mail use in grassroots organizations.

Chapter 2 presents general theoretical background on the social influence model of technology use (SIMTU), social influence processes and the role of opinion leaders. Chapter 3 outlines the construction of the research and the methods employed to collect data. Chapter 4 presents the results and observations of the case study, and chapter 5 discusses the findings, connects them to previous research, and highlights key aspects that are novel to the field. The chapter concludes with an overview of some possible theoretical and practical applications.

## CHAPTER 2

### THEORETICAL BACKGROUND

#### *The Social Influence Model of Technology Use (SIMTU)*

The social influence model of technology use (SIMTU) (Fulk, 1993; Fulk, Schmitz, & Steinfield, 1990; Schmitz & Fulk, 1991) maintains that an individual's use of and attitudes towards ICT are influenced by his/her social context. According to the model, contextual social factors influence the attitudes, statements, and behaviours of an individual in close contact with one or more significant peers(s). An individual organization member's approach to specific ICT (i.e. e-mail use) can be examined through the lens of interpersonal interactions between members, and as the product of the interpretive process of the individual within the socio-cultural community.

Research indicates that the social influence model is a useful framework for explaining some perceptions and uses of communication media in organizational settings (Campbell & Russo, 2003). Empirical studies shed light on the existence of social influence processes on media use patterns within groups in organizations (Campbell & Russo, 2003; David, 2004; Hollingshead & Contractor, 2002; Poole & DeSanctis, 1990). Studies also show that perceptions of e-mail's media richness<sup>3</sup> are significantly related to those of one's supervisor and five most frequent organizational contacts (Fulk & DeSanctis, 1995; Fulk, Schmitz, & Steinfield, 1990; Schmitz & Fulk, 1991).

Studies of social influence processes and new media use have shown that individuals' perceptions of their peers' use of ICT tend to influence their own usage (Campbell & Russo, 2003; Fulk, 1993; Fulk, Heino, Flanagin, Monge, & Bar, 2004;

---

<sup>3</sup> Medium richness is a function of (1) its capacity to convey multiple verbal and non-verbal cues, (2) its capacity for immediate feedback, (3) language variety; and (4) the degree to which it is recipient focused (Daft & Lengel, 1986; Klebe Trevino, Webster, & Stein, 2000).

Fulk, Schmitz, & Steinfield, 1990; Smoreda & Thomas, 2001; Yuan et al., 2005). While acknowledging the importance of opinion leaders, most existing empirical studies on the impact of social influence on ICT use focus primarily on the influence of peers and provide only limited discussion of opinion leaders (Campbell & Russo, 2003; Contractor & Eisenberg, 1990; David, 2004; DeSanctis & Fulk, 1999; Fulk, 1993; Fulk & DeSanctis, 1995; Fulk, Schmitz, & Steinfield, 1990; Hollingshead & Contractor, 2002; Klebe Trevino, Webster, & Stein, 2000; Schmitz & Fulk, 1991; Smoreda & Thomas, 2001; Yuan et al., 2005). Related empirical studies on organizations' diffusion processes found that key communicators, such as opinion leaders, play a significant role in shaping adoption patterns throughout the organization (Charlton, Gittings, Leng, Little, & Neilsen, 1998; Lievrouw, 2002; Rogers, 1983, , 2003; Still, 2006; Valente & Davis, 1999).

### ***Social Influence Processes***

Social norms theory asserts that individuals measure themselves against others when assessing the appropriateness or acceptability of their own ideas and actions (Bagozzi & Lee, 2002; Kelman, 1961; Noelle-Neumann, 1990). Kelman (1961) used the term *compliance* to explain this type of direct social influence and regarded it as an important form of interpersonal influence: individual group members conform to norm behaviours and attitudes as a response to pressure or fear of isolation, even though they do not understand the necessity for acquired norm behaviour. The social norm theory further argues that subjective norms play a significant role in cases in which social expectations are less immediately felt (Bagozzi & Lee, 2002; Eagly & Chaiken, 1993). Hence, one's actions may not be perceived as an outcome of social pressure.

Another mode of influence characterised by group norms is known as *internalization* (Bagozzi & Lee, 2002; Kelman, 1961; Yuan et al., 2005). Behaviour

(e.g. adoption or rejection of ICT) of individual group members is determined after one personally accepts the other members' attitudes, behavioural norms, perceptions, and values. Eagly & Chaiken (1993) suggest that "values" can be constructed broadly to include beliefs and attitudes (e.g. the belief that e-mail communication between organization members for organization-purposes increases the organization's effectiveness). The self-regulatory aspects of internalization- that is, the means through which one compares him/herself to others in behaviours or perceived attitudes and then makes cognitive adjustments - has been shown to originate in early socialization. One understands and accepts the social standards for conduct through observation of significant peers or opinion leaders. These observations form self-guides for meeting the idealised goals of these opinion leaders (Bagozzi & Lee, 2002).

Human behaviour, such as the potential for one individual to be influenced by another, has often been explained in terms of one-sided determinism (Bandura, 1978); behaviour is depicted as being shaped and controlled by environmental influences or by one's natural disposition. Social cognitive theory (Bandura, 1986) explains psychological functioning in terms of triadic reciprocal causation: Behaviour, cognitive factors, environmental events, and other individual elements operate as interacting determinates that influence each other bi-directionally. This reciprocal model of interaction does not imply that the different sources of influence are of equal strength, nor do the reciprocal influences necessarily occur simultaneously. Rather, it takes time for a casual factor to exert its influence and to activate mutual influences, yet the social cognitive process may help us explain the socialised individual action component (R. Wood & Bandura, 1989; Yuan et al., 2005).

Structuration theory (Giddens, 1979) explains the social process of reciprocal interaction between human actors and structural features within a social system. It suggests that human action is subjected to a given structure (e.g. an organization),

which is by itself a result of previous human actions. Structural properties consist of the rules and resources that individuals use in their everyday interaction. These rules and resources mediate human actions, while at the same time being reaffirmed by the actions of individuals (Orlikowski, 1992; Poole & DeSanctis, 1990). Norms of use are initiated and sustained by frequent communicators and further reinforced by continued use (Contractor & Eisenberg, 1990; Fulk, Schmitz, & Steinfield, 1990; Yates, Orlikowski, & Okamura, 1999).

### ***Opinion Leadership***

The concept of opinion leadership is based on two key assumptions (E. Katz & Lazarsfeld, 1955): First, the process of opinion formation is social. When individuals are required to react to a stimulus they turn to relatives or peers to “define the situation (or “social reality”) in terms that permit them to act” (Black, 1982, p. 170). Second, for any given subject, there are some individuals to whom others are more likely to turn for advice. According to Rogers (1983), opinion leadership is determined by the manner in which “an individual is able to informally influence other individuals’ attitudes or overt behaviour in a desired way with relative frequency” (p. 271). The term “opinion leaders” strongly suggests influence. The usual terminology describing these individuals (e.g. innovators, significant others, trend setters, etc.) imply qualities that “go beyond simple advice-seeking from peers, suggesting delegation of power or responsibility for decisions by the person asking advice” (Black, 1982, p. 170).

Rogers (1983) suggests that “when a social system’s norms favour change, opinion leaders are more innovative, but when the norms do not favour change, opinion leaders are not especially innovative” (p. 284). The relationship between opinion leadership and adoptive behaviour is based on a number of assumptions: (1) that the innovation is highly recommended by a competent authority; (2) that it is of central

importance to the groups for whom it is intended; (3) that it has some social relevance, and (4) that its benefits are visible to the intended adopter (Gatignon & Robertson, 1985; Venkatraman, 1989). The decision-maker moves from awareness of the innovation, to forming an attitude toward it, to deciding to adopt or reject it, to implementing or ignoring the new idea, in this sequence of effects (Rogers, 1983).

In the diffusion of innovation model (Gatignon & Robertson, 1985; O'Callaghan, 1998; Rogers, 1983; Still, 2006; Thomas, 1967; Valente & Davis, 1999), the influence of opinion leadership must be understood in the context of the network of social and communication relationships in which it occurs. Opinion leaders are usually those individuals who have higher status and social standing than other people in their social system and consequently, they have the potential to exercise influence. They are more “interconnected” with their peers than opinion followers, where interconnectedness is the “degree to which units in the social system are linked by interpersonal networks” (Rogers, 1983, p. 290). These networks of relations provide fora and opportunities for face-to-face interaction by which opinion leaders can exert influence on other members of the social system (Venkatraman, 1989).

It is interesting that although opinion leaders enjoy relatively high status, they tend not to be much different from other members of the social system (Venkatraman, 1989). Opinion leaders may be similar to other individuals with whom they interact in certain attributes, such as beliefs, social background and the like. Since the similarity makes the personal relevance and desirability of the innovation more obvious, influence through this avenue is more common (Rogers, 1983).

Opinion leaders are usually conservative, less risk- or change- seekers than other change agents in the organization<sup>4</sup> (Venkatraman, 1989), well interconnected in their

---

<sup>4</sup> Exposure to new technology usually occurs through a change agent within the given social or structural system. These change agents, sometimes refers to as “early adopters,” are defined as people who are relatively early in adopting an innovation when compared to their peers (Rogers, 1983). Early

social system and tend to conform to its norms (Rogers, 1983; Venkatraman, 1989). Therefore, opinion leaders have a greater tendency to share information than other change agents and have stronger personal and social motives to promote a specific attitude towards the innovation (i.e. adoption or rejection) (Rogers, 1983; Venkatraman, 1989).

### ***The “Digital Divide”***

Previous studies’ findings suggest that online ICT aimed at interpersonal communication (e.g. e-mail, chat, bulletin boards, etc.) has potential for increasing face-to-face interaction and social capital (Bimber, 1999; Castells, 1996; Hargittai, 2004; J. E. Katz & Rice, 2002; McLeod, Scheufele, & Moy, 1999; McLeod et al., 1999; O’Lear, 1999; Still, 2006). However, while use is gradually growing, online communication continues to exclude certain societies and communities (Jennings & Zeitner, 2003; J. E. Katz, Rice, & Aspden, 2001). This “exclusiveness” of ICT use and access is referred to as the “digital divide”.

The term “digital divide” implicates a gap between those who have the access and knowledge to use online communication technology, and those who have not (Hargittai, 2004; Jennings & Zeitner, 2003; J. E. Katz & Rice, 2002; J. E. Katz, Rice, & Aspden, 2001). These “haves” and “have-nots” are also separated by social contextual factors such as awareness, support, education, and economic background. Relevant research on developing communities world-wide (within first-world countries as well as developing nations), attributes the digital divide and effectiveness

---

adopters are usually change agents with a local agenda intended to speed up the diffusion process. They tend to have higher socioeconomic profiles, to be risk-takers and adventure-seekers, and have considerable exposure to mass media channels of communication (Gatignon & Robertson, 1985; Rogers, 1983; Venkatraman, 1989). They also help trigger the majority of potential users when they adopt an innovation (Rogers, 1983). Opinion leaders and adopters are similar in terms of their socioeconomic status and their level of media exposure, however they are quite different in terms of their personalities and relationships to their social system (Venkatraman, 1989).

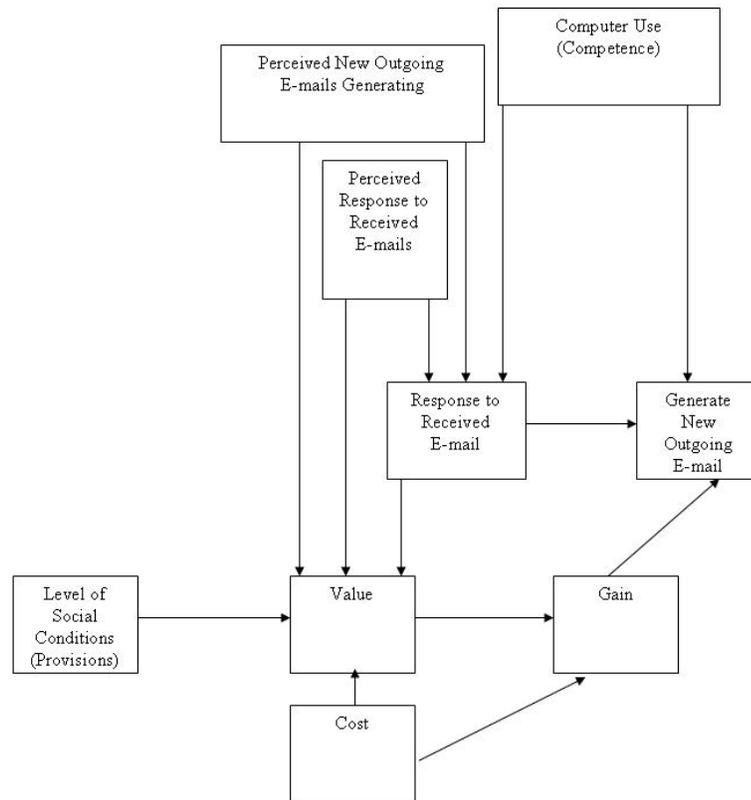
of ICT use to given social conditions of literacy, education, and economic possibilities (J. E. Katz & Rice, 2002; Norris, 2000; Warschauer, 2003), as well as to technological infrastructure inferiority (Hargittai, 2004; Norris, 2000, 2001).

While international awareness of the digital divide has focused mainly on the gap between underdeveloped and developed nations (Norris, 2000), many communities within developed countries lack access and the ability to practice online communication (Castells, 1985, 1996). Though in developed countries various ICT infrastructures are widely available, it is important to identify the digital gap per ICT-use (Hargittai, 2004), meaning the intensity of the digital gap is dependent on the computer-mediated communication being used. For example, sending and receiving e-mails as a mean of communication differs from online information retrieval. One might use online technology to retrieve information but prefer more traditional means to communicate with his/her peers. Similarly, Internet use varies from cell phone use. Cell phone technology is made more accessible to individuals than computers, due to its relative lower cost for hardware and use. This study's peripheral findings support this notion, as discussed in the results and conclusion chapters.

***Applying a Social Influence Model of Technology Use (SIMTU) to understand e-mail use in community-based grassroots organization***

In spite of knowing that e-mails can exchange information more efficiently, many community-based grassroots NFP organizations still prefer to use traditional communication media such as face-to-face interaction and postal mail as their main methods of communication (Smoreda & Thomas, 2001). SIMTU is employed in this study in order to reveal and understand the social influences that account for the adoption or rejection of e-mail use in such organizations.

The model used in this study is based on the modified model offered by Yuan et al. (2005):



**Figure 1:** The Social Influence Model of Technology Use (Yuan et al., 2005)

As explained in the previous chapter, SIMTU proposes several important advantages, examining how cognitions and behaviours can be predicted using knowledge of social and symbolic interaction:

1. SIMTU emphasises social affects on individuals’ behaviours and attitudes towards the examined medium (i.e. e-mail-use).
2. It identifies **perceived** attitudes towards media use which may affect media adoption or rejection.
3. It suggests identifying **perceived** values and contributions of the media to the organization’s mission.

4. It observes the conditions or “provisions”, as suggested by Fulk (1993, p. 924), of norms for judging the appropriateness of particular attitudes towards ICT and for aptly rationalising workplace behaviours relating to the adoption or rejection of media.

The capacity of production and generation of new outgoing e-mails indicate a response to a need (i.e. response to received e-mails), as well as an understanding of the value and gain e-mail use has to offer, if any, to the promotion of the organization’s mission. SIMTU may assist in understanding the social processes affecting these cognitions, while reflecting current use and behaviours towards the discussed technology, as reflected by members’ medium-related actions.

Incorporating research discoveries from innovation diffusion research in the SIMTU study, this thesis argues existing social influence research on technology use may be enriched in two ways:

First, by identifying the relationship between perceptions of technology-specific compatibility and organization members’ media use. Assuming one’s perceptions of how others in the organization use new ICT affect one’s attitude towards that technology, the research suggests one’s perceptions of how others (i.e. opinion leaders) view the technology’s compatibility to the organization will have a similar impact.

Secondly, by focusing on the relationship between the contributions of opinion leadership to social influence processes affecting adoption or rejection of new ICT in the organization and the wider social context unique to such organization. This study argues that opinion leaders influence media users equivocally, while the broader contextual social factors- such as the community’s attitudes towards ICT- have a stronger influence on media use in the organization.

## CHAPTER 3

### METHODS

#### *Overview of Research Methodological Approach*

Previous empirical studies (Campbell & Russo, 2003; David, 2004; Hollingshead & Contractor, 2002; Poole & DeSanctis, 1990) reveal consistent social influence on media use patterns within organizations. These studies typically combine two research approaches: qualitative data gathering and quantitative, survey-based research. This thesis is based upon qualitative field research consisting of in-depth interviews and ethnographic observations, as well as participants' self-reporting on perceptions of e-mail use within the organization. The application of these methods is designed to explore social influences and compare the data collected with observed normative organizational behaviours concerning communication and e-mail use.

Community-based grassroots not-for-profit organizations (NFP) have different motivations to explore and adopt new technologies, than NFPs that are more business-oriented (e.g. museums, universities, etc.). Past research focused more on business or business-like organizations, and the qualitative surveys they employed were designed to fit these organizations' social contexts. Grassroots community-based organizations are designed to address the needs of a specific community and to consider the community's unique social context. Therefore, preliminary studies designed to explore grassroots NFPs cannot launch a large-scale quantitative survey without first conducting some qualitative research to really understand the nature of these organizations.

As in any organization, grassroots NFPs demonstrate a strong relationship between contextual social factors and the process of acquiring knowledge (Borgatti &

Cross, 2003; Contractor & Eisenberg, 1990; Hargittai, 2004; J. E. Katz & Rice, 2002). However, the social context in which a grassroots organization operates involves the social nature of the community it serves and produces mostly non-monetary incentives (i.e. social capital) to adopt or reject new communication information technology (ICT).

In addition, technology-based job requirements may be practiced differently in the employment status of staff in grassroots NFPs, than in business-oriented NFPs. For example, one may be able to serve her own community through a grassroots organization in spite of lacking proficiency with the commonly used communication technology, whereas in the case of a business-oriented organization, the same individual might not even be hired in the first place. Therefore, the qualitative data-gathering methods employed in this study, consider the unique social context variables that affect media use and perceptions among members of the studied grassroots organization.

#### *A Mixed-Method Approach*

Given that the usage of communication technologies in grassroots organizations has not been studied much, using a variety of qualitative research methods was more compatible with the nature of this particular research. Qualitative data are a source of well-grounded, rich descriptions and explanations of processes in identifiable local context (Miles & Huberman, 1994). Therefore, in-depth face-to-face interviews and interactions (including participant observations) were employed in this specific social setting.

The study employed three qualitative methods: 1) audio-recorded, individual, face-to-face interviews with respondents; 2) ethnographic observation of participants' work-related interactions within the organization; and 3) a careful documentation

(journal log) of all communication exchanges between the researcher and all individuals in the sample group (see table D.1).

Interviews were designed in an open-ended format, with questions that were semi-structured and ethnographic, borrowed from similar qualitative experiments (Campbell & Russo, 2003; Knorr Cetina, 1999; Miles & Huberman, 1994; Rubin & Rubin, 2005), which allowed probing and follow-up questions (See appendix A). The main goal of the interviews was to identify social processes and individual perceptions that influence diffusion of e-mail use in the organization (Burt, 1999; Campbell & Russo, 2003; Fulk, 1993). Another goal was to establish a basic understanding of communication practice norms employed in the organization among its members, constituents and stakeholders.

Ethnographic observations of participants' work-related interactions were also made prior to, and during the interview stage. The first goal of this method was to identify the normative behaviour for information exchange within the organization and its observable extent (e.g. the degree of paper-based memo use, intra-organization phone use between staff members, e-mail use, etc.). The second goal was to confirm respondents' identifications of others or of themselves as opinion-leaders (Venkatraman, 1989), by observing members as they used their computers and e-mail accounts, and identifying high-profile e-mail users and their related-interaction with others in the organization.

Lastly, a journal-log was made, documenting all communication exchanges regarding the study (e.g. e-mails, phone-logs, etc.), between the researcher and sample members, prior to, and after receiving their acceptance or rejection of the invitation to participate in the study. This included keeping a record of all outgoing and incoming e-mails, phone-calls, face-to-face interactions and letters (postage mail), to and from respondents.

The goal of this method was to establish an understanding of the preferred communication methods employed by these individuals, and to obtain realistic expectations of the information technology commonly used by members of the organization to communicate with outsiders, prior to conducting the personal interviews.

### ***Objectivity, Reliability & Validity***

#### *Objectivity*

Ethnographic research, by its nature, challenges researchers' goal to maintain a balance between objectivity, that is, "...[keeping] a certain degree of distance from the research materials [while still representing] them fairly" (Strauss & Corbin, 1998, p. 35), and sensitivity; "the ability to respond to the subtle nuances of, and cues to, meaning in data" (Strauss & Corbin, 1998, p. 35). Social science *objectivity* is somewhat different from other sciences'. The specific social context in which the study takes place has a substantial impact on the course and means of interpersonal interactions (Contractor & Eisenberg, 1990; Fulk, 1993). Ethnographic researchers are required to be sensitive to what has been said or done by respondents, and apply these subtle insights to their observations, whether or not they identify with their interviewees' actions. Researchers must be alert not only to what has been said, but how it was said. In some cases respondents may state what they perceive to be the answer that most respondents would give, due to perceived peer pressure, and so forth (Miles & Huberman, 1994).

Researchers must make the relevant queries as to the comprehensiveness and detail of their study's general methods and procedures (Kirk & Miller, 1986; Miles & Huberman, 1994): For example, to what extent should the data include detailed "behind the scenes" or subtle information? Can one follow the sequence in which data

were collected, processed, analysed, and displayed for specific conclusion drawing?  
Are the conclusions explicitly linked with the displayed data?

Furthermore, the researcher's own expectations may impede some aspects of objectivity in his/her research (Kirk & Miller, 1986; Knorr Cetina, 1999; Rosaldo, 1993). The researcher's subjective ideas and notions as to "how things should be done", may jeopardise his/her integrity to report objective findings. Yet, many ethnographers and social scientists argue ardently that true social study cannot exclude the role played by researchers, and their interpretations of the observed phenomena (Geertz, 1977; Knorr Cetina, 1999; Latour & Woolgar, 1986; Rosaldo, 1993). It is agreed however, that credible ethnographic research is relatively neutral and reasonably free of unacknowledged researcher biases (Miles & Huberman, 1994). Researchers must ask themselves what role their presence in the setting played in shaping their findings, and eventually provide conclusions that depend as much as possible on the subjects and conditions of the study, rather than on themselves.

### *Reliability*

The issue in question is the study's "quality control" (Goetz & LeCompte, 1984; Smith & Robbins, 1982, 1984), i.e. whether the study was conducted with reasonable care. "*Reliability*" is the extent to which a measurement procedure yields the same answer however and whenever it is carried out (Miles & Huberman, 1994). Kirk & Miller (1986) make an additional distinction between "diachronic" reliability (i.e., stability of observation over time) and "synchronic" reliability (i.e., stability in the same time frame) when discussing qualitative methods. While identical non-ethnographic experiments held in different laboratories are typically aimed at producing consistent results, the repetition of social science experiments or studies in various environments often produces different outcomes. Researchers must therefore

explore the clarity of the questions and information they present to their respondents and ensure that all respondents are presented with similar probing topics (especially in the case of open-ended interviews).

### *Validity*

“*Validity*” is the extent to which the experiment gives the “correct” answer (Kirk & Miller, 1986). Do the findings of the study make sense? Are they credible to the people participating in the study and to the study’s readers? Did the study produce an authentic portrait of the issue that was observed? To what extent can the findings be generalised and applied elsewhere?

Validity focuses on the idea that the events and settings studied are not artificial, are not created to meet the researcher’s expectation, nor are modified by the researcher’s presence and actions. In order to ensure a study’s authenticity and adequacy, researchers must follow relevant queries, such as how meaningful and context-rich are the descriptions: Did complementary methods and data produce generally similar conclusions; and if not, is there a logical explanation for this? Most importantly, all negative evidence - that is, evidence that opposes the researcher’s hypotheses - must also be included in the findings.

Reliability focuses on the study’s impact on and importance to the entire field. The generalising process in social science is far from being emotionless (Miles & Huberman, 1994), and ethnography is more like a translation or a fusion of two or more studies of similar behaviours or phenomena. Therefore, qualitative research presents obstacles for researchers aiming at producing a generalisable study.

It is harder to establish generalisability from sample to population, and from one case to another (Firestone, 1993), especially when considering the effect that context (e.g. social context) has on the setting and procedures of study. In the pursuit of a

generalisable study, researchers must consider some of the following (Kirk & Miller, 1986): Are the characteristics of the original sample (e.g. subjects, settings, processes, etc.) fully described in order to permit sufficient comparisons with other samples? Does the report examine possible threats to generalisability? Are the results consistent with other experiments? If not, why? etc. Researchers must consider the possibility that others may wish to recreate their studies and therefore, must provide adequate description of sample, settings, processes, and procedures to allow other studies to assess their strengths and weaknesses.

Consideration of the strengths and benefits of the necessary measures of objectivity, reliability and validity is essential in designing and applying a data collection plan. Merging these aspects of research in the field may yield reliable and generalisable data.

### ***Data Collection Overview***

#### *Research Area*

The case study was conducted in a community-based grassroots organization based in Rochester, NY. The organization is a non-profit company founded by neighbourhood leaders in the late 1970s. It has followed a broad mission since its inception: to improve the quality of life for residents and families in a specific Rochester neighbourhood, particularly in the areas of public safety, youth, recreation, education, economic development, housing, and public infrastructure.

The organization employs approximately 40 staff members in different employment capacities (i.e. full/part time, office hours/after school programmes), and benefits from a moderate level of involvement from community volunteers; mainly senior citizens and young adults.

As for the neighbourhood the organization serves, 80% of its residents are minorities, with 25% of the total population below poverty level; 67% of the families earn less than the median income. A third of the population is under 18; 9% of the households have children younger than 6, and 46% of population over the age of 25 did not graduate from high school (Davis-Howard, 2005a). The demographic statistics highlight another issue that many in the community call the “digital divide”, which is also relevant to this particular research, and will be further examined in the results and discussion chapters.

### *Sample*

The organization employs approximately 40 staff members, and relies on a moderate number of permanent volunteers (approximately 20), which enabled the composition of a non-random sample of 36 organization members consisting of 24 staff members, 4 board directors, 8 volunteers, and one stakeholder from a peer organization. The respondents varied in their levels and types of involvement with the organization and with the organization’s various external stakeholders (e.g. governmental and municipal authorities, funders, welfare agencies, etc.), as well as in their levels of experience with technology. A liaison informed all of these individuals of the research project prior to being invited by the researcher to participate. Invitees were informed by both the liaison and the researcher that participation was voluntary, and that their responses to the invitation, as well as their interviews if they chose to participate, would be kept completely confidential, and would not be shared with anyone from the organization.

### *Question Development*

The drafting of the interview questions was done in three stages: First, questions were derived from previous studies that applied the social influence model of media use (SIMTU). Then, the questions were modified for the specific purpose of identifying and understanding social influence processes on e-mail use in a grassroots organization. Lastly, The Cornell University Committee on Human Subjects (UCHS) reviewed and approved all questions (protocol #07-02-043). As per the UCHS approval, signed consent forms were not required, as long as informed consent was made by respondents verbally (see appendix B).

### *Inviting respondents to participate in the study*

All prospective respondents were given a hard copy of a letter inviting them to participate in the study. In addition, those who had an e-mail account were also contacted by this method. Each response to the invitation, and the method in which it was communicated, was carefully recorded. The documentation of these communication exchanges included all accepted, declined and ignored messages; how long it took respondents to reply, and how many attempts were made to obtain each potential participant's response.

First, letters (see appendix C) were sent out to all members on the sample list a couple of days after the study had been introduced by the liaison. The positive response rate to these initial letters was low (N=1). However, positive responses that were received later, due to follow-up communication (i.e. e-mail, phone-call, or Face-to-Face interaction), were credited to the first attempt to invite members to participate, since respondents had referred to the letter as the reason for agreeing to participate (see appendix D for log summary of the invitation to participate in the study).

### *Response rates*

Overall, 26 respondents - roughly 72% of the entire sample population (N=36)- agreed to participate in the study. The following table (3.1) shows the distribution of the responsive participants per group:

Table 3.1 – Response rate distribution

Group	N of Group in the general sample population	Participants	Response Rate
Staff Members	24	19	79%
Lay Leaders	4	2	50%
Volunteers	8	4	50%
Stakeholder (peer organization)	1	1	100%
Total	36	26	72.2%

### *Data collection strategies*

The audio-recorded individual interviews were largely open-ended, leaving room to explore the unexpected. The questions were organised in categories based on different concepts (i.e. familiarity and experience with the relevant technology, compatibility with one's individual work and with the organization's mission, perception of use among others, and identification of opinion leaders). The question order was flexible, allowing inquiry to be somewhat spontaneous. As the interview progressed and data was obtained regarding the above-mentioned categories, some

questions were omitted, to avoid repetition. That being said, all of the interviews explored each of the indicated categories.

At the start of each interview, respondents were asked to describe their job titles and daily work along with their experience with computer applications and e-mail use. Respondents were asked to describe how well, if at all, e-mail use suited their job description and the role they played in promoting the organization's mission. They were asked about their communication preferences and about their perceptions of their colleagues' attitudes and preferences regarding e-mail use. Participants were also asked to identify influential individuals whose behaviours or attitudes towards e-mail use in the organization encouraged others to adopt or reject this technology. In addition, respondents were asked about the organization's commitment to communication among all community members, the means used to send out and receive information within the community, and communication methods preferred by members of the community.

Most importantly, each interviewee was asked to share what s/he thought about e-mail use, and how this technology fit the organization and its community's circumstances. This approach, emphasising respondents' perceptions of others attitudes towards e-mail use, was similar to previous research based on the social influence model of media use.

Towards the end of each interview, respondents were asked to fill out a brief demographic questionnaire, designed to collect data on their age, gender, tenure in the organization, and the extent of their experience with technology. Where applicable, respondents were also asked to answer close-ended questions about the amount of time that they used this technology daily, preferences for using their office or home computer for work-related tasks, and their preferred e-mail account (personal or organizational) for work-related communications.

### *Data collection timetable*

Data collection took place from the beginning of March 2007 through May 2007, in three overlapping stages:

1. Twenty-seven (27) audio-recorded individual interviews were conducted between mid-March and May 2007. Each interview varied from 30 to 60 minutes long (an average of 40 minutes per interview). Each interview was transcribed within 0-7 days, to enable follow-up on any revealed issues.
2. Ethnographic participant observations of work-related interactions were conducted during two main periods: (1) prior to the interviewing period (first two weeks of March 2007), and (2) during the interviewing period (mid-March through May 2007) just before, and right after each individual interview. Times of observations varied from regular office hours (9AM-5PM), to late afternoon (2PM-6PM), and evenings. The observation periods lasted from 15 minutes to 1.5 hours each, depending on the activity (e-mail use, casual “water-cooler” discussions, after-school programmes, etc.). Observations were recorded (with the respondents’ permission) regarding the type and capacity of memos each respondent produced, as well as their preferred information exchange methods, within and without the organization.
3. Documentation of all relevant communication exchanges regarding respondents’ potential participation in the study was made throughout the study, from early March 2007, when the first letters and e-mails were sent, until the last interview was confirmed and took place (last week of May 2007). The documentation of e-mails - whether they were read, deleted after being read, or deleted without being read – was made possible through an automatic response request, attached to each e-mail that was sent by the researcher. This feature is

common to the Microsoft Outlook e-mail application that is installed on all of the organization's computers. Other e-mail applications (such as Eudora, Yahoo!, Gmail, etc.) do not automatically reply to a "read report request", however these application were less likely to be employed on the organization's computers. Since the data collected through this method has clear limitations, the findings cannot provide valid conclusions as to the general approach of the studied organization towards e-mails. However, it had shed some light on common attitudes and normative behaviour regarding e-mail use and communication with an outsider, or issues that are not directly work-related.

The following chapter reviews the study's results, including its accomplishments and surprises, and lays the foundation for a discussion of how these outcomes fit theory, and how they may contribute to future SIMTU research.

## CHAPTER 4

### RESULTS

#### *Overview*

This study aimed to identify the social context influencing individuals in a grassroots organization to adopt or reject e-mail use for work-related information exchange. The social influence model of technology use (SIMTU) was applied to identify two main issues:

- The extent to which contextual social factors influence individual members' adoption or rejection of e-mail use;
- The contribution of opinion leaders to these factors.

The chapter is divided into several parts, which paves the way for a discussion of the study's outcomes in a later chapter:

A. Background information on interviewees (demographics, tenure in the organization, residential area, e-mail use habits, etc.)

B. Interviewees' self-reported attitudes, norms and preferences regarding media and technology use for the purpose of communication:

- (1) E-mail use among organization members.
- (2) E-mail use between organization members and stakeholders.
- (3) E-mail use between organization members and the community (individual constituents, lay leaders, and lay organizations).

C. Self-reported perceptions of others' use of e-mails, including perceived expectations, opinion leadership, and compatibility to the organization.

D. Opinions of e-mail use in a community affected by the "digital divide".

E. The "digital divide" and alternative electronic communication.

Both qualitative and quantitative data were analyzed. Interviewees' quotations are used throughout this chapter to highlight specific aspects of the results. In order to maintain the interviewees' anonymity, names, exact position held at the organization, and gender, are not included in the information presented. In some quotations, reference is made under the general group title (i.e. "staff member"), instead of the sub-group category (e.g. "staff 9AM-5PM)), to avoid identification.

#### *A. Background information on interviewees*

As was mentioned previously, 26 individuals were interviewed for this study, and each one completed a short survey. This section draws attention to information collected through the questionnaire. The following data provides an overview of the organization's social context as well as the some clues to the social context of the overall community, which this organization serves.

The respondents were grouped into three main categories: staff members (N=19), volunteers (N=6), and stakeholders (N=1). The first category (staff members) was further divided into two sub-categories, relating to members' working hours: a) 9AM-5PM (N=9), and b) after-school, 2PM-6PM (N=10). This additional division better reflected staff members' level of interaction with other members, constituents, community, and external stakeholders, as will be explained shortly.

The majority of interviewees (73%) reported being 40 years old or over (N=19). Within this age group, eight members worked from 9am to 5PM. The rest were after-school staff members (N=5), volunteers (N=5), and stakeholders (N=1). Most respondents (61.5%) were women (N=16), among them 13 were staff members. 65.4% of the interviewees lived in the community served by the studied organization (N=17). 69.2% of the interviewees reported having had a partial or no college education:

Table 4.1: Education and residence

<b>Level of Education:</b>	<b>Members</b>	<b>%</b>	<b>Live in the community %</b>	<b>Live elsewhere<sup>5</sup> in the region %</b>
(A) Some high-school education	1	3.8	0.0	3.8
(B) High school graduate	6	23.1	19.2	3.8
(C) More education than high school, but less than a bachelor degree.	4	15.4	11.5	3.8
(D) Some college	7	26.9	15.4	11.5
(E) Bachelor degree	5	19.2	15.4	3.8
(F) Master degree or higher	3	11.5	3.8	7.7
<b>Total</b>	<b>26</b>	<b>100%</b>		

As shown in Table 4.1 most members of this organization live in the community that this organization serves. In addition, 66% of members who reported to have an incomplete college degree or less education live in this community.

Table 4.2: Education and organization membership

<b>Level of Education</b>	<b>Staff 9AM-5PM</b>		<b>After-school staff</b>		<b>Volunteers</b>		<b>Stakeholders</b>	
	<b>N=</b>	<b>%</b>	<b>N=</b>	<b>%</b>	<b>N=</b>	<b>%</b>	<b>N=</b>	<b>%</b>
(A) Some high-school education	-	-	1	3.8	-		-	-
(B) High school graduate	2	7.7	4	15.4	-		-	-
(C) More education than high school, but less than a bachelor degree.	1	3.8	1	3.8	1	3.8	-	-
(D) Some college	3	11.5	3	11.5	1	3.8	1	3.8
(E) Bachelor degree	2	7.7	1	3.8	2	7.7	-	-
(F) Master degree or higher	1	3.8	-	-	2	7.7	-	-

Table 4.2 indicates that 60% of the after-school staff members did not have any advanced education, and 30% reported having some college education. It also

<sup>5</sup> “Elsewhere” may be neighbouring communities as well as a geographically distant community.

indicates that volunteers have all attained higher education than a high-school diploma.

The level of education does not always indicate the level of computer use. 40% (N=6) of the respondents who reported having an incomplete college education or higher (N=15), also reported using computers for 0 to 3 hours a day. Furthermore, 36% (N=4) of the respondents who reported having no college education (N=11), stated a range of computer use, from 4 to 7 hours a day. Zero-order correlation yielded borderline significance between education and computer use (0.31), that may suggest that in this social context, there is some connection between having some high education and high frequencies of computer use.

In addition, it is worth noting that within the discussed community, almost 25% of the residents are below poverty level, and 21% are female single-parent household (Davis-Howard, 2005a, , 2005b). This may explain the low rate of college graduates among organizational organization members who reside in the community. It may also provide the relevant socio-economic context explaining the following results regarding computer use.

Computer use – interviewees' reports include work-related and personal computer use. 65.4% (N=17) reported using the computer for 3 hours or less a day. The after-school programme, due to its social nature, does not include work-related computer missions. Only 20% (N=2) of the after-school staff have organizational computer and e-mail accounts. 80% (N=8) reported using a computer for personal uses, usually from home, for 2 hours or less a day. Only one member of the after-school group (10%) reported using the computer at least 4 hours a day, for both work-related and personal purposes. The staff 9AM-5PM group data are somewhat different: all members (N=9) reported using their computers for work-related purposes at least 2 hours a day, 55% (N=5) of which, reported using a computer for work-related purposes 3-7 hours a day.

Observations at the organization confirmed the extensive use of computers for work-related tasks by individual staff members. However, all members reported having many other non-computer related duties. During one of the observations, the entire building experienced a power-outage for three consecutive days, during which all staff members still seemed to be very busy with organization-related work. The lack of access to their computers played an insignificant role in their attitude toward work that day: most staff members made use of their working hours to catch-up on filing and paper work, while the rest focused on field work and house-calls.

E-mail use – Data gathered reflects de-facto use of this medium. While computers are often used in the organization, high levels of computer use per day (as described previously) may not reflect high levels of e-mail use respectively. Results regarding attitudes and normative behaviour towards this form of communication between members, and between members and external agents (i.e. stakeholders) is shown in the following section of this chapter.

Table 4.3: E-mail use and organization involvement

<b>Receive or Send e-mails per day</b>	<b>Total</b>	<b>Within entire sample % (N=26)</b>	<b>Staff 9AM-5PM %</b>	<b>After-school staff %</b>	<b>Volunteers %</b>	<b>Stakeholders %</b>
None	4	15.4	3.8	7.7	3.8	0.0
1-5	11	42.3	15.4	15.4	7.7	3.8
6-10	5	19.2	3.8	11.5	7.7	0.0
11-15	3	11.5	3.8	3.8	0.0	0.0
16+	3	11.5	7.7	0.0	3.8	0.0

As previously described, 55% of the staff members in the 9AM-5PM group reported using their computers for 3-7 hours a day, though only 44% reported receiving or sending more than 6 e-mails a day. This table (4.3) indicates that the majority of the staff 9AM-5PM group members receive 0-10 e-mails a day. Few

receive tens or even hundreds of e-mails, but as all of the respondents stated, most of the incoming e-mail is SPAM (junk) or personal, not work-related communication:

*“what I do... and I'll be honest with you, I came in at 7:30a, so I can read my e-mails, I get around a 100 to 150 e-mails A DAY... 50-60 a day over the weekend, and that's mainly junk mail, but you still have to go through them ... I went through them today, and deleted, and downloaded, and prioritised what I needed to respond to”.* (staff member 9AM-5PM)

The same person reported using the computer for work-related assignments about 3 hours per day. Another staff member, who also reported an average of 3 hours a day computer use, stated e-mails are rarely used to get the information required to perform work-related tasks.

In addition, the majority of the after-school staff, as mentioned above, did not have access to an organization e-mail account or did not need to use computers to perform work-related tasks. However, the table above shows that at the rate of 1-15 e-mails a day, more after-school staff members use e-mail than their 9AM-5PM peers do. This reported e-mail use is most likely related to personal information exchange, as one of the after-school staff members explained:

*“If I'm e-mailing something, it would usually be to my friends or family members, in Rochester, and outside of Rochester... things like personal cards, greetings... I have a very religious friend who likes to send out [via e-mail] religious notes to everybody, announcements, photos of the kids, updates and family reunion, and that's all under my personal e-mail”* (after-school staff member)

#### *B. Interviewees' self-reported attitudes, norms and preferences regarding media and technology use for the purpose of communication*

As explained in the previous chapters, the system's structure and the social context within the organization are important to understanding motives and incentives for

adoption or rejection of information technology. Grassroots organizations are non-for-profit organizations that rely on local community members to advocate and promote their missions. As in other grassroots not-for-profit organizations which are lagging behind businesses and business-oriented organizations (Bimber, 1999; Castells, 1996; Dahlgren, 2000; J. E. Katz, Rice, & Aspden, 2001), online technology diffusion is still in its early stages in the studied organization. Online communication (i.e. e-mails) was introduced to the organization seven years ago, however, it was only in the past couple of years that e-mails have become more commonly used for information exchange between staff members and the organization's stakeholders. As was reported by one of the managers in the organization:

*... everybody got e-mail accounts at the same time, it was just [different] levels of comfort amongst staff. Some are very, very comfortable, but most [of them] use the computer more for Internet surfing than a communication tool, a business communication tool". (staff member 9AM-5PM)*

This statement was not much different from other statements made by other interviewees. 73% of the interviewees (N=19) reported being able to do their work for the organization without relying on e-mail communication.

(1) E-mail use among individual organization members:

The following results present members' behaviour regarding e-mail use as a mean of interaction within the group. In addition, these results highlight alternative preferred means of interpersonal communication within this group.

Staff-to-staff communication: 36.8% (N=7) staff members stated that e-mails are necessary for their daily work. The same respondents also reported sending out e-mails to at least one other staff member. However, merely three respondents (15.8%) confirmed generating or replying to more than one staff-directed e-mail. Moreover,

these individuals reported using other communication methods (e.g. face-to-face interaction) to confirm or follow up on e-mails sent to other colleagues:

*“...most of them [my staff] are here, and [I also use] e-mail [to communicate with them]. Most of them, like, pop in the office and then e-mail is very big for me... well, I'm trying to think... they [other staff members] don't use it to the extent I use it, well, I mean, they're here [in the building], so lot of it (information exchange) is verbal.*

*.... when I get information that our social worker needs, what I would do is e-mail that, because that would be crazy to repeat to several people. And then, the social worker might come down to talk to me about it, or call me on the phone to ask questions...”* (staff member 9AM-5PM)

Norms and standards of communication between staff members are, as explained in the introductory chapter, sustained and reinforced by continued use. In this organization, the normative communication method between staff members is face-to-face interaction, as 100% respondents stated, though 89.5% stated these interactions are not necessarily work-related:

*I don't really communicate with everyone. I would say that I communicate with about 6-7 people, other than in direct conversation like face-face-face. They are the same people in the organization with whom I communicate either by phone or e-mail. I prefer talking to people face-to-face, and that's also how I communicate with the majority of individuals here.* (staff member 9AM-5PM)

All staff members stated that this method for inside intra-organizational communication is the most compatible with the organization's needs, mainly because of the organization's small number of employees in a close proximity. Furthermore, nearly 95% (N=18) of staff acknowledged their personal preference to “get the feel” of their conversation partner, a goal better realised through face-to-face interaction rather than any other method:

*“You can use what ever you prefer at the time, or works for you better. I think, I like face-to-face, because I get reaction and I am used to talking to people.*

*It's a lot better.. you get tone, immediate expression that you can't get in print, and you can see it... to get a feel for something. It is more respectful, I mean, if there is something I would like to ask my boss, I don't think I should write an e-mail to them, like I'm too busy to go over there and talk to them. It also has to do with the size of this organization, you know – it is small, and I'm used in bigger places where we used to use e-mails much more, because you can't run around campus talking to everyone face-to-face, but here it's definitely possible”. (staff member 9AM-5PM)*

When face-to-face interactions are not feasible, 79% of staff members (N=15) preferred using intra-organizational phone calls to communicate with their peers. In these cases, even when a member knew her/his peer might be away from the desk, members reported preferring leaving a message on the peer's voice-mail instead of an e-mail, providing information or requesting a face-to-face meeting.

Volunteers-staff communication: the volunteers group (N=6) was also asked to describe their communication habits with the organization staff. 83.3% (N=5) stated that their communication with the organization is limited to one particular staff member (which will be identified as “O”). 80% of these respondents also reported most of the communication with “O” is done through e-mails.

Two volunteers stated that they do not use e-mails at all for organization-related communication, but only one claimed to prefer the phone, postage mail or face-to-face interaction to receiving e-mails.

*“... we know that the first Thursday of every month is an organization meeting, so that's something that has a standard times, but if it cancels, they would let us know, and also send e-mails about it, and that is something I would have liked to get. I would agree it is a faster communication device, faster than paper, or phone, but until I can get myself back to the 21st century, I'll have to stick to the best communication I have, like the phone or paper form, until I can get back to the electronic world”. (volunteer)*

The second volunteer is currently without the use of a personal computer, hence has limited or no access to an online e-mail account. However, as quoted above, this

person prefers relying more on e-mails to get notifications and messages from the organization.

Of these volunteers 66.6% (N=4) live within the community. All four stated that as residents, they get some of the information regarding the organization via “word-of-mouth” (as they called it), or through leaflets distributed at local churches and places of gathering. However, about information specifically relevant to their contribution to the organization, all 6 volunteers prefer receiving communication in writing (either by post or e-mail).

*“It's all junk mail. I wish there was a way I could have stopped those. “O” (peer staff member) uses e-mail to send things to me, and there are some others, but most of my e-mails are junk mail. I don't know, I mentioned it to others [here], and they told me that they get the same. I don't know. Because if I come in the morning and decide to check my e-mails, then I have to deal with all this junk”.* (staff member 9AM-5PM)

*“SPAM seems to be the main problem people have with e-mails. I hear people talk about it”.* (staff member 9AM-5PM)

*“I've been trying to check my messages more than once a week, but I have to deal with a lot of junk-mail, and that's why I don't spend time looking at them... I don't really have e-mails from anybody...”* (staff member 9AM-5PM )

Another reason for preferring traditional communication methods such as face-to-face interactions to e-mails is related more to incoming e-mail obstacles. 36% (N=8) of those who reported any e-mail use (N=22), stated that SPAM or junk e-mail contributes to their hesitation to use e-mails. The average number of SPAM e-mails received by organization-related users is 25 per day. All respondents using e-mails, either through their organization account or their personal account, reported receiving an average of 25 SPAM e-mails a day. The majority of respondents (77.3%, N=17), stated that there are times they prefer not to check their e-mail accounts in order to avoid dealing with SPAM e-mails.

*“...another one annoying things about e-mails that has been rising lately is that the “Association” (peer organization in the community) has a Yahoo groups list and they're sending out... I must get almost 40 a day... I'm exaggerating, but still – a lot, and it can be things like "my cat got lost", but then there could be something important, like someone got mugged, and we're gonna do a walk through the neighbourhood, so you have to go through (read) all of them (the e-mails). And that's just very annoying, trying to differentiate between something that I really need to address or “I really don't care about your cat”....” (staff member 9AM-5PM)*

*“I try avoiding getting SPAM. Friends know I delete joke e-mails etc.”.  
(volunteer)*

E-mails are used less for work-related communication interaction, hence members have no social or structural incentives to expand their technical proficiency and block SPAM e-mails or unwanted e-mails from friends: 13.6% of the respondents using e-mails (2 staff members and one volunteer) suggest e-mails from friends or online acquaintances may become a problem. The other 19 respondents using e-mail, enjoy friendly correspondence, and at least two staff members reported using their work-related e-mail account for that purpose occasionally.

Observations indicate that some staff members (N=6, 54% of the staff members who have a computer with online access) use their work-related e-mail account and online access for personal use more than they admit. Personal use includes friendly correspondence, online chats and entry to various non-secure websites. This jeopardises the security of the information stored on their computer, including their e-mail addresses and others' in the organization's network. As a result, these individuals, unaware of their contribution to the situation, enable the over-flow of SPAM e-mail that many computer users at the organization have been experiencing. The following statement was uncommon in its profound understanding:

*“...but I do get a lot of junk e-mails... about 7-10 junk e-mails. I think I get them, because I probably signed for things on the Internet [using my e-mail address], for things I shouldn't have signed-up for...”* (after-school staff member)

Half a dozen (27.3%) respondents using e-mail, reported receiving more SPAM and unwanted e-mails than work-related e-mails. 66% of these (N=4) also reported limited or no interaction with stakeholders. Therefore, since e-mails are less used for work-related communication, then e-mail use is not easily justified for carrying out the organization's mission. This situation is also well reflected in the following statement:

*“There are about 40 people in the building who have computers on their desktop, [then you] give them all access to e-mail, but did that person actually needed e-mail? Maybe not. Unless you'll e-mail from the front of the office to the back of the office”.* (Volunteer)

The data indicates that most staff-to-staff communication is conducted by means of face-to-face interactions or in other non-email formats (e.g. phone calls). Communication with volunteers is usually done in writing, using mainly postage mail, or e-mail, when volunteers prefer it.

## (2) E-mail use between organization members and stakeholders:

This section discusses the norms and preferences for communication interaction with stakeholders outside the community, such as government and municipal authorities, “funders” (this term, often used by respondents, refers to sponsor or donor agencies) and welfare agencies, etc.

Respondents were asked to describe their work for the organization and their communication exchanges with the organization's stakeholders. Each respondent described a different level of involvement or contact with the stakeholders, such as peer organizations, funders, state & federal authorities, consultants, service providers

(e.g. insurance companies), etc. For the purpose of identifying the level of involvement, four categories were assigned, as follows:

- Full – contact with regional, state and federal funding agencies and authorities, peer organizations outside of the community, and service providers, as well as local peer organizations, community leaders or prominent figures.
- Partial – contact with service providers and / or municipal authorities.
- Limited – contact with local peer organizations, community leaders or prominent figures.
- None – limited contact with constituents on face-to-face basis, within the building.

These categories were matched with the four-sub groups used to identify the respondents, as seen in the following table:

Table 4.4: Interaction with stakeholders

	<b>Staff 9AM-5PM</b>		<b>After-school</b>		<b>Volunteers</b>		<b>Stakeholders</b>	
Full	2	7.7%	0	-	0	-	0	-
Partial	5	19.2%	2	7.7%	1	3.8%	0	-
Limited	1	3.8%	0	-	4	15.4%	1	3.8%
None	1	3.8%	0	-	1	3.8%	0	-

The two staff members who reported full involvement with the stakeholders were also the only two staff members who reported extensive use of organization-related e-mail correspondence, incoming and outgoing, for the purpose of maintaining information exchange with the stakeholders. Among staff members, partial interaction with stakeholders (i.e. service providers and / or municipal authorities) was much more likely to take place by email than was interaction with other staff members, regardless of subject:

*I don't use e-mails to communicate with my staff, maybe only with the upper staff, management.... sometimes I e-mail or get e-mails from United Way, Youth Board (stakeholders)...” (staff member<sup>6</sup>)*

All of the mid-management staff members (N=4) reported that on average, 37.5% of exchanges with service providers or municipal authorities take place via email. Non-management staff who were categorised as having partial interaction with stakeholders (N=3), reported different e-mail exchange capacity. One non-management respondent, who reported receiving an average of 11-15 e-mails a day, also reported that approximately 20% were from stakeholders. Conversely, another non-management respondent, reporting an average of 1-5 e-mails a day, stated that over 50% of her/his received or sent e-mails were to or from stakeholders. The third respondent in this category reported trying to avoid using e-mail communication at all, even though it is available on her/his computer:

*“... I think it's [e-mail use] good if you want to send something outside of the organization, like every now and then, I'd get an e-mail from them (a service provider), or I'll have to e-mail them some information... but I actually send a fax instead of an e-mail. It is usually when they ask ME to e-mail, not because I want to...” (Staff member)*

As indicated above, in most cases the initiative to use e-mails as a normative method of communication is external to the organization, and individual members are influenced to adopt this technology for work-related purposes by peer communicators, outside the organization.

*“Everyone uses e-mails....everyone that we deal with: all of the funders, the organizations that we're involved with... it's a new way of communication. It just is. As much as I may not... and it's not that I don't like, but there's so much of it, you know what I mean, no one picks up the phone anymore... and I tell everybody "if it's urgent – call me on my cell. Don't send me an e-mail", because I don't know when I'll get to it, I might get it on the next day... But it is*

---

<sup>6</sup> Staff group affiliation (9AM-5PM or After-school) was not made here, to maintain anonymity.

*a new age, and we are trying to improve... if we are trying to help our constituents with the "digital divide", you know, well we have to be on top of it ourselves, can't be hypocritical about it. So, we make sure people here get the right training and are computer literate, and it is a new age, and we have to be a part of it, you know. It's a business like anything else, it's a business and we have to keep up with the latest technology" (staff member)*

*"...it seems that especially their (stakeholder agency's) personnel response more to e-mails than phone calls. I would say that, I can call and they don't call back, but when I send an e-mail, they do... I guess it stays visible until they've done something [in response to it], while it's so easy to skip all those phone messages. (staff member 9AM-5PM)*

In their interviews, respondents stated that they were aware of the external influence the organization and individual members were experiencing to accept the new technology as the principal means of work-related communication.

*"...it is possible to do the work without e-mails, but I assume it would make it more difficult if you couldn't offer this as a reliable communication method. It comes down to being able to send out posters and messages by e-mail. And even if most community members don't have e-mails, they would go to places, like their church or local businesses, where things we send out by e-mail are posted on the board. e-mail is for getting information in and getting information out. It also impacts the time factor. Things are done easily". (Staff member 9AM-5PM)*

From the general staff group (N=19), 47.4% (N=9) reported receiving or sending work-related e-mails from or to community-based organizations' or individuals' e-mail addresses. In the volunteers group (N=6) only two respondents reported use of e-mails for organization-related information exchange with non-organizational agents or individuals.

All of the interviewees discussed perceived visible advantages and benefits e-mail use has to offer to the organization's mission and in its relationship with external stakeholders. Data indicates that all respondents stated at least one benefit e-mail use has to offer organization-stakeholders communication, even though 38.5% of them

(N=10) reported not interacting with stakeholders and non-organization agents.

Among the benefits mentioned, the following received the most attention:

- Attachments – 50% (N=13) commented on being able to send complete documents via e-mails to service providers and agents outside the organization:

*“I send out attachments if the [e-mail] memo requires it, excel or word. I also use... I also use exchange PDF attachments. That is (e-mails) the primary way they (service providers & agencies) communicates with us...”* (Staff member 9AM-5PM)

- Accessibility & availability – 42.3% (N=11) commented on being able to send information at any given time, knowing the message will be received even if the addressee is currently away from her/his e-mail account:

*“... it's almost like the person is sort of always available. It's like you can send an e-mail, no matter when or where...I think it makes things easier... you can't do it with a phone. (staff member 9AM-5PM)*

- Speed – 30.7% (N=8) commented being able to get information in or out quickly:

*“...It's easier, we get information faster from our funders, so if the application is not complete, if additional information is needed... all type of current grant information is sent to you at the same day. I mean, even with the state, they are updating every contract online. I can check my status online... they can send me an e-mail and download what I need to do, sign it, and then e-mail it or fax it back to them, whereas if we were to rely on US postal services, it would have taken us a week! so it's easier to get all these documentation, and it cuts about 6-8 days... it makes our work more effective...we get the papers online, we sign the documents online, we get the funds transferred online... this just happened this week.. it saves you 10 days!”* (staff member 9AM-5PM)

- Multiple addressees – 19.2% (N=5) commented on being able to send information simultaneously to several people:

*“When we [are] communicating with people who are involved [in a project] it is easier to e-mail everybody, I mean you can “talk” [via e-mail] to 6 or 7 people at the same time, and then if you need a response by a certain time in the afternoon, it's easier. You got to reply, and you don't have to pick up the phone to all of these 6 people, you can just send an e-mail. So that part I like”.*(Staff member 9AM-5PM)

(3) E-mail use between organization members and the community:

This section discusses the extent to which e-mail use is common for communication interactions between organization members (mainly staff) and their constituents (e.g. individual constituents, lay leaders, or lay organizations such as churches and block-clubs). In addition, it reviews additional existing communication methods commonly used by these agents.

When applying the SIMTU model to examine e-mail use in a NFP community-based organization, one must consider the general community population’s attitudes towards this technology. Therefore, one cannot ignore the notion of “the personal touch” (i.e. a preference for communicating in person, such as through face-to-face interaction and personal engagement), which was often mentioned by interviewees. All of the respondents, whether they were staff members, or grassroots volunteers, attributed this preference to the family-like nature of the community the organization serves. In addition, the low socio-economic background of this particular community has contributed to what many in the community call “the digital divide” (this issue will be discussed later).

A combination of factors may contribute to the preference for using of face-to-face interactions between the organization and community members, while rejecting e-mail use. The preference for personal interaction between members (whether they are staff members, volunteers, or constituents) is most likely connected to the organization’s relatively small capacity (only 40 employees), and the fact that many staff members

are residents of the community served by the organization (table 4.1). However, the overall social context in which the organization operates - such as social communication preferences among most community members (i.e. constituents), lack of pre-acquisition of relevant technological expertise, and lack of personal and group awareness of benefits attributed to e-mail use - have contributed to the low levels of e-mail use in the organization. This is especially true when the grassroots organization associates the impact it makes on community residents' quality of life with face-to-face communication. This was confirmed by the respondents of the local volunteers and stakeholders categories (2/3 of the volunteers group (N=4), and one stakeholder).

*“I think that feelings cannot be expressed in e-mails, and I like to see the expression on their faces , and I think they prefer this kind of interactions.... when I am away for a day or so, I find notes in my mailbox, or questions on my voicemail at home, and not e-mails, because people prefer hearing my voice, and to talk to me in person, even if it's on the phone” (volunteer)*

*“I think that from the grassroots position, technology plays a complementary role to face-to-face and such interactions. It helps you structure technology to be culturally sensitive, it's not a "one shoe fit all apparatus"...” (Stakeholder)*

Alternatively to face-to-face interactions, flyers, notes or postage mail, memos are also in use for organization-community communication. All after-school staff members (N=10) noted preferring face-to-face interactions for communication with parents and constituents (the term “word-of-mouth” is often used by respondents to describe face-to-face interaction), or use of flyers.

*“We get information out to parents [by] flyers, word-of-mouth... if we have something going on with the children, we usually send a flyer with the kids, but also word-of-mouth reminders... I usually see the parents face-to-face when they come in to pick up the kids, or I tell the students, give them a flyer to take home, things like that.  
Parents also prefer talking to me face-to-face, usually when they come in to pick up their children. It's rare to get a note from them....” (after-school staff member)*

*“Well, when they (the organization) do something (a community-based activity) they send out notifications, and I ask them to send me a note, because sometimes I forget... and sometimes they call me on the phone, but mostly they send me some papers... so that would help, because I forget things... but if anything important comes up they always find a way to contact me... its basically to get information from the people who run community-based activities...” (volunteer)*

Another popular method used by the organization to spread information about events and activities among its members and constituents, is to put informational flyers in visible locations in main activity areas in the building. For example, single flyers printed in easy-to-read text were occasionally attached to desk at the front of the computer lab, on tables in the snack-room, or posted at the entrance to other classrooms. During the observations made in the building, it was noticeable that these flyers were seen and read by the children and/or the parents when they arrived to pick up their kids.

Despite community and organization communication norms, the organization has formed an e-mail list-serve of key lay leaders and lay organizations in the community who have e-mail accounts and use them often. E-mail is not a substitute for face-to-face interaction, nor can it reach the masses of community-members. However, regular distribution of e-mails to tens or hundreds of key community leaders, activists and peer organizations, expands the networks and makes information available in a larger capacity than face-to-face interactions:

*“I've been on their (the organization's) e-mail list, they have a lot of information they just broadcast out to people, and I am able to use that information often. And, you know, I do the same when I can...send them e-mails with valuable information... the information I get from the organization I send it out to other people. In the last year or so, I've connected with other networks who are completely different, but if the information is good for them, then I turn it over to them. For example – job openings, events for particular populations within the community, so if I know someone who is associated with this community I would pass it on, if it's for students, I pass it on to student*

*groups, if it's for employment, I send it to a group of people I know that might be looking for a job, I'm not currently looking for a job, but why "sit on" the information when someone else can use it?!..." (volunteer)*

The e-mail list-serve allows the organization to send out all sorts of organization- and community-related information to constituents or organizations in the community. The receivers then distribute the information through various, traditional communication methods, such as face-to-face interaction and posters in clubs and churches, and in some cases, when possible, they also forward the e-mail to others (e.g. churches' e-mail list serve, etc.):

*"...there's like an e-mail list of over 200 people that we send information to in the community on a regular basis, on all of things that are happening, issues, concerns, and resources... . I mean, we're suppose to be empowering the community if you can't reach out to them... and even if we can't get to everyone in the community because they don't have computers, we can [still] get to agencies who serve other people in the community, and the agencies have computers" (staff member 9AM-5PM)*

### *C. Self-reported perceptions and beliefs regarding others' use of e-mails*

While the above section reviewed de-facto e-mail use behaviours, the following segment presents members perceptions of their peers' usage of emails

The SIMTU model highlights the impact of one's perceptions of peer attitudes towards technology on one's own attitudes towards the same technology. In this study, members were asked to describe their beliefs and perceptions of other members' attitudes towards e-mail use, and to identify opinion leaders. This part of the chapter reviews data relating to perceived expectations (of either adoption or rejection of e-mail use), and peer and opinion leadership influence. Additionally, the data reflects members' perceived compatibility of e-mail use with the organization. The data

collected indicates that members consider the attitudes of not only their organization peers, but also of external stakeholders, and the community at large.

Perceived expectations – means that members in organizations tend to conform to social norms regarding IT use by complying with or internalising behaviours and attitudes they perceive as the norm (Bagozzi & Lee, 2002; Kelman, 1961; Noelle-Neumann, 1990; Yuan et al., 2005). As described above, 65.3% of the respondents reside in the community that the organization serves. Most members of the organization relate to their peers and constituents as family members, and respectively assume that as with their relatives, their constituents prefer personal over electronic interaction. All respondents suggested face-to-face interaction as a normative mean of communication between the organization's members and its constituents, crediting this habit to the nature of the community:

*“...it's the same population as my family where I don't see a benefit for e-mail [account] outside of work... they are not doing business [from home], outside of work there is no real purpose, because your network of people usually don't have e-mail outside of work” (volunteer)*

88.4% (N=23) stated that they perceive communication with peers and constituents is most likely to be received, understood and respected if done in person, either face-to-face or over the phone. In addition, all respondents stated only a minority of community members have access to computers and online connections (at work or home), therefore e-mail based communication would most likely be futile.

*She uses e-mails because she has to. I mean you have to communicate with funders, you have to use the e-mails, she prefers face-to-face, and in this community it is better, I mean – I could talk to this person (constituent) over the phone but then he would come here and we do business. It's a whole different energy. E-mail can support all other methods of communication but cannot replace them, especially not face-to-face. It helps to expand and expedite face-to-face interactions (staff member 9AM-5PM)*

While organization members felt they are expected to use personal communication methods to exchange information with peers and constituents, all respondents reported that e-mail use is expected to be applied in all or most communication with external stakeholders. 60% of the staff members who have some interaction with external stakeholders (N=10) stated that they would not have used e-mails as much, if at all, if e-mail use was not commonly in practice among stakeholders and peer organizations.

As quoted above, staff members whose job description includes interaction with stakeholders might try to avoid e-mail communication and use alternatives, such as a facsimile transmission. 50% of staff members using e-mails for organization-related purposes (N=14) reported feeling no obligation to use e-mails, except to comply with most stakeholders' preferred mean of communication.

Perceived peer influence – Suggests that adoption or rejection of media is also related to one's views of peer attitudes and perceptions of media appropriateness and usefulness to the organization (Fulk & DeSanctis, 1995; Fulk, Schmitz, & Steinfield, 1990; Schmitz & Fulk, 1991). The beliefs about general e-mail use in the organization project two contradicting images:

*There are people here who do most of their work on the computer, so they use their e-mail most. It makes things easier. My only criticism is that people don't respond to e-mails as a primary communication method, and [then] I have to follow-up with a phone call. Others who are more in human services, work with kids for example, [so they] check their e-mails once a day, and I have to go down to their office and see them to remind them of the memo [that was sent by e-mail] (staff member 9AM-5PM)*

*“Well, as far as using e-mail, they (in previous working place, a non-for-profit) use it more business-wise... you could take care of business through e-mail, just transmit small questions, and transactions and things ...people could ask me questions [by e-mail] and I could reply right online... I didn't need to talk to them on the phone, have online links available for them in the e-mails, and... it would make my life much easier. Here we don't use it for just the same*

*kind of things. Well, it's not the same kind of business, but it is still useful”*  
(Staff member 9AM-5PM)

On one hand, 4 9AM-5PM staff members (44%), and 8 of the after-school staff (80%) were convinced that work-related e-mail is used to some extent by all members of the organization who have full or partial access to computers. On the other hand, all respondents perceived face-to-face conversations to be the most effective communication method (as described in the above paragraphs). The outcome is that since e-mails are not considered to be a chief communication method between staff members, often face-to-face reinforcement is required: all staff members using work-related e-mails (N=11) stated face-to-face interactions or phone-calls would usually follow initial e-mail correspondence between staff. 72% (N=8) said that this was “just how things are done here”, meaning the majority of staff members who have organizational e-mail accounts don’t actually expect e-mails to be used in staff-to-staff communication.

In addition, 61.5% (N=16) of those who have some interaction with stakeholders stated that they complied with e-mail use (for the purpose of organization-stakeholders communication) after observing others within or outside the organization doing the same. 50% (N=8) of these individuals also stated that observing others use e-mails and understanding how useful it may be to their own organization-related tasks, encouraged them to expand e-mail use for more than stakeholders communication purposes (e.g. personal and staff-to-staff communication).

*“for e-mail, I know that “O” uses it a lot, much more than I do. I don't think the majority of staff members use it as well. “I” might use it for her work, she might use e-mails, and then “A” uses it a lot. I would say most of the e-mail I get are internal, mainly from “O”...”* (staff member 9AM-5PM)

Perceived opinion leadership – Key communicators, such as opinion leaders, contribute significantly to attitudes of media adoption or rejection throughout the organization (Charlton, Gittings, Leng, Little, & Neilsen, 1998; Lievrouw, 2002; Rogers, 1983, 2003; Still, 2006; Valente & Davis, 1999).

Members identified four specific individuals within the organization who use e-mails more extensively than others and promote use of this medium throughout the organization. These individuals were described by respondents as those most experienced with e-mail, two of which were perceived by 60% of the respondents as “heavy” e-mail users. Members’ perceptions of those individuals’ e-mail use was grounded in reality, as they all confirm extensive e-mail use compared to other staff members: Two sent or received over 16+ a day (occasionally over 30), and the other three stated sending or receiving about 10 a day.

In addition, respondents highlighted the use of e-mails by these mentioned individuals as a method of communicating within the organization: 61.5% respondents (N=16) reported receiving work-related e-mails from at least one of these individuals daily. Furthermore, 65.4% (N=17) identified two of these individuals as prominent sources and the organization’s “know-how” experts on e-mail use and computer technology. However, the influence of opinion leaders should be considered with an appreciation of the overall context of the network of social and communication relationship (Gatignon & Robertson, 1985; O’Callaghan, 1998; Rogers, 1983; Still, 2006; Thomas, 1967; Valente & Davis, 1999). In the studied organization only 18%, three staff members (N=3) and one of the volunteers, mentioned the prominent e-mail users playing any role in their daily decisions to use e-mails for work-related communication.

Compatibility – Adoption of new communication media in an organization is much influenced when opinion leaders and key personas point out how compatible the

medium is with the organization's workflow and mission (Charlton, Gittings, Leng, Little, & Neilsen, 1998; O'Callaghan, 1998; Rogers, 2003; Still, 2006). In this case, e-mail use is found to be most compatible with the organization's communication interaction with its external stakeholders, while most communication with other organization and community members is usually done via traditional media.

In the interviews, members were asked how these normative attitudes towards e-mail use might be compatible with the organization's mission. All e-mail users among the respondents, and another three members who do not use e-mails (total N=17) stated e-mails best support the organization's mission in its communication with external agencies, and much less with staff or local community communication.

*"I think it HELPS the way this organization is run, because we deal with a lot of people who don't work here, like other organizations, and it helps to send them things, like information without having them come in or going to them to give it to them, or sending it by mail... we are able to send the information out fast. I guess it does fit the organization's mission, because we deal with a lot of outside people and (organizations)". (staff member (AM-5PM)*

Many stakeholder organizations that the studied organization deals with, such as municipal and governmental agencies, require e-mail use on a regular basis. Staff members whose job descriptions require some level of interaction with these organizations are required to use e-mails for that specific communication.

*"For the most part, if you're sending a document for someone to look at, like a draft, it makes sense, otherwise, if it's just questions or something general, I don't think it needs to go through e-mails. As far as talking to someone, I would say it's better to do it face to face or on the phone, especially, since it's a small place, and we don't have a lot of people. If we were in a larger building or if they were more people here, it would make more sense to use e-mails. The only time I could really see that e-mail is necessary is if there was something someone needs to look on the computer and respond to you about [it].. (staff member AM-5PM)*

However, as for communication within the organization, or for communication between the organization and its constituents, the normative communication methods (i.e. face-to-face, phone, memos) are also perceived as being the most compatible with the organization's needs and nature. After-school staff hours overlap with the 9AM-5PM staff hours, which enables mutual updates through the aforementioned normative communication. Most volunteers arrive at the building within this time frame as well (9AM -8PM) and are updated as to the organization's policies and events in a similar way, or by phone.

*D. Opinions of e-mail use in a community affected by the "Digital divide"*

*"The organization is basically to improve the quality of life for the people in this community .... I'm just trying to do my best"* (volunteer)

As quoted in one of the previous sections of this chapter, and in the above statement, the organization sees its mission as being an empowering agent, aiming to improve the quality of life of the community's residents.

*"There are some ways you can construct that (online technology), use different sources in the community, to make technology accessible, but you also have to deal with your climbs, the inability, the lack of structure home, so with these [challenges] the internet does not have the same impact on this urban neighbourhood, as it would in the rest of the region, based on the fact of economics. Having this understood, "this is not a one shoe fit all" situation, when it comes to dealing with the inner-urban area... we need to create the structure that would allow us in the modern American society, to get from point A to Z, and make sure that we considered every component of what it would take for us to get to the full extent, that we didn't leave anyone out..."* (stakeholder)

42.3% (N=11) of the respondents believe use of online technology and e-mail communication is relevant to the organization's mission. These respondents linked the lack of high technology communication alternatives, and the historical nature of this

community to more traditional and personal information exchange practices, such as face-to-face and phone calls.

34.6% (N=9), including prominent staff members (N=5), volunteers (N=3), and stakeholders (N=1), suggested that the basic necessities of the community must be addressed before e-mail use is applied as a common community-related information exchange practice. Hence, the organization includes in its mission providing information technology education to adults and youth, as well as expanding youth's exposure to potential higher education (i.e. college) choices, as a key to becoming a productive member of the community.

*E. The "digital divide" alternatives to electronic communication*

The affecting socio-economic context in the community served by the studied organization, also known as the "digital divide", has influenced the level and intensity of various ICT in this community. One unexpected discovery of this research, which may be related to the "digital divide", was the growing extent to which a new communication method other than e-mail is in use throughout the community: text messaging via cell phone used is increasingly used throughout the community, as 23% of organization members (N=6) mentioned in their interviews.

*"...people are engaged in so many activities, that it is difficult to keep track of it all... I think technology enables us to keep track. 30% of the population has cell phones... it's cheap and it allows them to stay connected..."* (after school staff member)

Among the reasons offered by members for preferring cell phone text messaging as a mean of communication with their social circles, were the devices' low cost and availability. Service costs are in most cases free (depending on the service plan and

provider), and that text messaging can be also done via alternative online media (i.e. through the service provider's web-site).

Not every respondent has a cell phone though, and those who do, do not necessarily use it for more than making or receiving phone calls. The use of cell phones for text messaging was first mentioned in an interview with one of the after-school programme staff members who, like other respondents in this group – doesn't use computers or e-mails to perform organization-related tasks.

Statements regarding perceptions varied and were inconclusive. Since the information about cell phone use was not the focus of this research, and was brought up by an interviewee half-way through the study, it is difficult to assess how many members actually think there is some potential for cell phones as an organizational and/or community communication tool. Data collected is reviewed in appendix E.

The following chapter discusses the findings in relations to norms of e-mail use as exhibited in this case study, opinion leaders and social influence, social context and "digital divide" effects. Both theoretical and practical implications of this research are also discussed.

## CHAPTER 5

### DISCUSSION & CONCLUSIONS

This research examined the extensiveness and nature of the social influence processes affecting e-mail use in the studied organization, and the role opinion leaders play in shaping the use of this medium. The research follows and extends the SIMTU model to study social influence on media use in NFP grassroots organizations.

#### *Discussion*

##### *A. Information demographics and reported e-mail-related attitudes:*

*Affiliation* - The study was conducted in a small grassroots organization operating within, and serving, a specific urban community in which most of the population had low socio-economic and education backgrounds (as described in methods chapter). The study sought a better understanding of the social contexts and processes influencing members of this organization to adopt or reject e-mail use.

Most of the organization's members (staff in different employment capacities and volunteers), are also residents of this community, and viewed their involvement in the organization as an extension of their involvement in the community. The fact that 65.4% of respondents were residents of the community in which the organization operated, and they fairly represented the overall type of population (in terms of race, education, and socio-economic background), provides a better understanding of the community's social context and "state of mind" regarding e-mail use as a mean of communication. By focusing on this sample, the study provides a wider view of the social context affecting media choice in NFP organizations that are also community-based.

*Members' overall task-related computer use* – as most of the organization's staff members in the sample attested, computer use was not the primary method of communication for most of the work done in the organization. Staff members and volunteers both, treat this technology as a work tool rather than a substitute for tasks traditionally performed manually. Many suggested that although computers make “life easier” at the organization, the need for these machines is solely derived from outside needs and pressure.

*E-mail use experience* – a minority of respondents had previous experience with e-mail use, prior to becoming organization members (staff or volunteers). As many of the respondents suggested, the reasons for that varies, and may include the following: low levels of college attendance, previous employment that did not require computer and e-mail use (e.g. service and support jobs), or lack of infrastructure and funds for the required hardware, software, and/or net access. Additionally, most staff members in managerial positions reported having no experience with e-mail use prior to working in the organization. Hence, organization membership (especially – employment) was independent of computer and IT experience.

Findings suggest that social affiliation with the community plays a role in media choice processes in some grassroots community-based NFP organization. Therefore, social influence processes on e-mail use in such organizations are derived from a more comprehensive social context, which exists beyond the boundaries of the organization itself.

*B. E-mail use: self-reported attitudes, norms and preferences:*

Applying SIMTU in this study enabled findings of self-reported attitudes and normative behaviour towards e-mail use among organization members. Self-reports of individuals' experiences with e-mail use and alternative communication media with

peers and constituents provided information on members' perceptions of the value, costs, and benefits of e-mail use. Most of the organization's constituents and members did not regard e-mail use as a life necessity. In carrying out the organization's mission – to better the quality of life of the specific urban community – e-mail use was not perceived as a requirement, and most members expressed a preference for personal interactions (e.g. face-to-face or phone call conversations). E-mail's ability to overcome constraints on time and distance was not considered as an incentive to obtain the relevant technical proficiency needed to maximise this ability.

The attitudes reported within the organization resonate in the surrounding community, in which the organization operates. Members who are also community residents stated preferring face-to-face interactions over all other forms of communication. Other preferred media were equally traditional: phone calls or notes conveying information regarding community activities and other social activities. E-mail and online interaction were less common among members due to social and economical reasons. All interviewees highlighted personal interaction as the most advantageous means of communication for community related information flow. Economical reasons for rejecting e-mail use by members of the community will be discussed further in this chapter.

As suggested by structuration theory (Giddens, 1979), human action is a result of a given structure (e.g. an organization), which is by itself a result of previous human actions. An organization's rules and resources generate human actions (e.g. e-mail use), while at the same time these actions are being reaffirmed by the actions of other individuals (Orlikowski, 1992; Poole & DeSanctis, 1990). Using SIMTU enabled identification of the triadic reciprocal interaction in regards to e-mail use norms that exists between members, the organization's structure and mission, and the surrounding community. Each of these agents supports a systematic rejection of e-mail use. The

reciprocal interaction feeds each agent with the necessary social approval for this normative attitude towards online communication and e-mail use: The unenthusiastic attitudes and norms of behaviour regarding e-mail use among the studied organization's members is a product of the constituent community and organization's perception of this medium's social effectiveness.

Further investigation of norms and preferences indicated adoption of e-mail use for interactions and information flow from- and to- agents external to the organization and community. These finding suggested a parallel triadic reciprocal interaction structure between members, the organization's mission, and external stakeholders (such as funders and governmental organizations), which supported e-mail use normative behaviour.

The middle-ground between those two different approaches, of rejecting and adopting e-mail use, depending on the purpose of communication, can be found in the organization-community e-mail list-serve. Though e-mail use was far from being a popular communication medium among community members, making information available through specific e-mail contacts throughout the community, suggests the organization is slowly allowing external norms to impact its mission. The gradual change is taking place because of the advocacy of individual members of the organization who reported prioritising e-mail higher than other members.

*C. E-mail use: Self-reported perceptions & beliefs regarding others' use of e-mail:*

This study, as others investigating social influence on media use, demonstrates that media choice, i.e. e-mail use, is directly related to how one perceives others' use of a given technology. The model enabled the inquiry of members' beliefs and expectations of normative e-mail use within the organization; what or who shaped

their opinion regarding e-mail use; and personal perceptions as to e-mail use's compatibility with the organization's mission.

Findings show that perceived expectations have their origins in the organization's social environment, as well as the social environment in which the organization operates, i.e. the community. Many expressed their understanding of an "unspoken" expectation from peer organization members, as well as peer constituents, to use more personal communication methods to convey information between the organization and community.

Respondents felt that most organization and community members do not care for e-mail use, as it is impersonal, and its benefits are limited in the kind of relationship the organization is maintaining between members and constituents. E-mails and online communication were perceived as more relevant for communication with the world "beyond" the community. E-mails use was to convey information between the organization and its partners beyond the community it serves. Therefore, "high volume" e-mail users in the organization were identified as individual members who were responsible for communication interaction with external stakeholders.

Findings showed that the social influence to which members in the organization were subjected, led to two contradicting actions: rejecting e-mail use, and adopting e-mail use. Findings showed that since many felt that their peers hardly, if at all, used e-mail for intra-organization communication, then they themselves opted to use e-mails less or not at all for similar communication. Nonetheless, most members shared the notion that inter-organization communication (i.e. with external agents) requires high-volume of e-mail use, therefore members who are in constant communication with stakeholders were more likely to adopt this technology. In the specific setting of this organization, the number of individuals who were perceived as being high-volume e-mail users was narrowed to a handful.

### *Technology-specific compatibility*

SIMTU was applied in this study to examine perceptions of technology use as well as perceptions of technology compatibility (how well-matched is this technology with the organization (structure, social context, mission, etc.)). Members were asked to share their ideas as to how others perceive and value e-mail use, and whether these perceptions have any impact on media choices.

All members suggested that the dominant perception was that the compatibility of e-mail use to the organization's mission and workflow depended on the end-receiver of the communication. E-mail use was considered advantageous when it mediated communication between the organization and external stakeholders.

These perceptions led to the understanding that e-mails were better limited to organization-stakeholder communication, while being inappropriate for organization-constituency communication. The very few who internalised e-mail use on the merits of its possible contribution to the entire community were considered by others as a minority that could not affect the existing norms. The majority found no real value for implementing online technology to support organization-community communication. Therefore, there was no apparent need to consider using or expanding current use of e-mails for work-related tasks concerning information flow among members, the community or its residents.

*Opinion leadership* - in addition to investigating how members perceive normative e-mail use in the organization, the model was used to identify the contribution made by opinion leaders to e-mail use within the organization. Potential opinion leaders in the organization were "high-volume" e-mail users in medium- to high-managerial positions, or high level volunteers responsible for the organization-stakeholders information flow.

Despite their status within the organization, and indications that these individuals were urging peers within the organization and the community to use e-mail more, they were not trend setters. Unlike studies in for-profit or business-like NFP organizations, the individuals who did use e-mails in this organization had little influence on others in regards to adopting this medium.

The theory of diffusion of innovation (Rogers, 1983) argues that when normative behaviour leans towards change, opinion leadership emerges as innovative, while when the social climate is more conservative towards change, opinion leadership is less innovative. The observations and findings of this study support this argument.

#### *D. The “digital divide”:*

Though this thesis was not originally designed to explore the digital divide, the findings indicated a strong relationship between the relevant social context affecting the use of e-mail in the studied organization and the notion of this aspect of online communication. Therefore, the thesis examined the social context in which members of a community opt to become e-mail users as part of their community civic engagement, and how this decision may affect adoption or rejection of this technology among members of the grassroots organization serving that community.

Contributing to respondents’ rejection of e-mail use was the fact that a relatively small minority of community members had access to computers (either from home or work). For organization members who were responsible for sending out and receiving information from constituents, e-mail use was therefore perceived to be irrelevant.

Community members struggled daily with relatively extreme financial, educational and cultural challenges. As a minority urban community, most constituents were either unemployed or juggling more than one job in order to support their families. This community is characterised by a large number of residents who have low education

backgrounds. That means that for many of them, employment opportunities are limited mainly to service work, away from computers.

In a reality where computers and online communication are considered to be middle-class luxuries to which many have no access, relying on online media for information flow within the community is perceived by many as pointless. Therefore, grassroots organizations within the community explore ways to minimise the digital gap. One of these ways is to establish a steady information flow via e-mail, with community collectives - not individuals - that have access to online communication. The studied organization has successfully implemented that approach by creating an e-list serve including churches, block clubs and lay leaders within the community. The addressees on this list receive organization information and then forward it to the community through mainly interpersonal interactions. Another option to consider would be to explore electronic messaging to an electronic communication device which is used by far more many individuals in the community – the cell phone.

However, as a dominant figure in the community suggested, the grassroots organization's mission to minimise the digital divide should concentrate on the things that matter most: making good education affordable and accessible, and promoting high employment ethics (according to this respondents, many young adults prefer the "easy-life" of drug dealers and petty thieves to an honest day's-work). A change in the community's attitude towards online communication media can be sought by answering the community's chief concerns. Community leaders have therefore suggested implementing a series of after-school activities for the local youth, adult education programmes, and professional training courses sponsored by local businesses. A majority believes that once community members are able to obtain better education and as a result, (better) jobs that require computers, there will be an

increase in online communication (i.e. e-mail use) among members of the organization and community.

### ***Research Implications***

Previous studies that used SIMTU (Campbell & Russo, 2003; Fulk, Schmitz, & Steinfield, 1990; Schmitz & Fulk, 1991; Yuan et al., 2005), examined contextual social factors within the studied organizations. This study focused on a specific type of organization – community-based grassroots NFP organization – unlike the corporate organizations studied in the above mentioned studies.

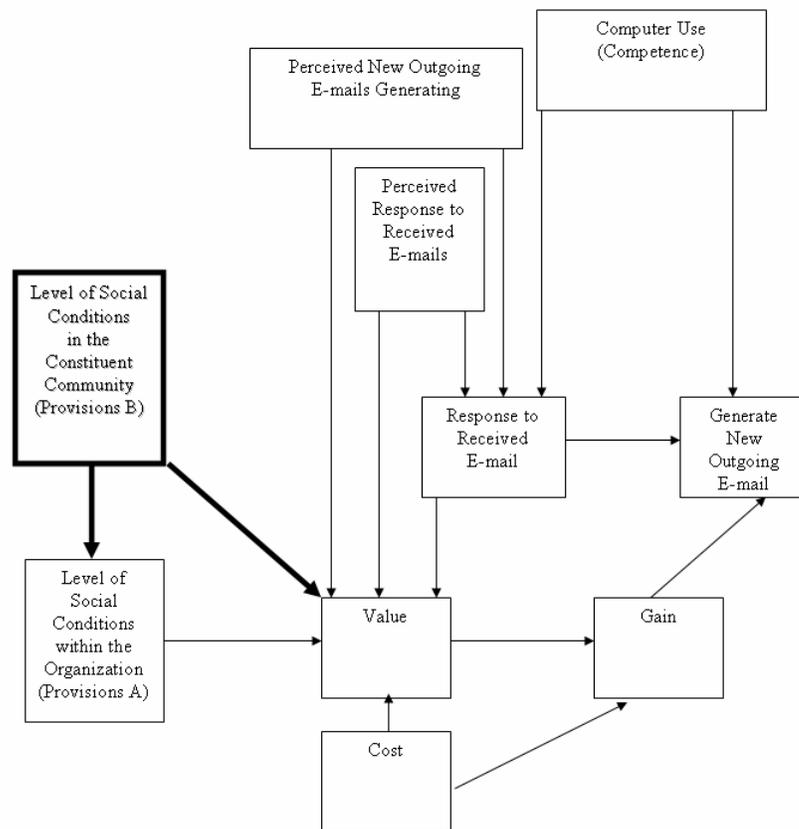
This research demonstrates that attitudes, norms, and behaviours of individual peers and organizations *outside* of the grassroots organization being studied, may contribute to members' perceptions and attitudes towards technology use. This study, therefore, suggests both theoretical and practical implications. The suggested aspect of theory outlines a potential extension of the SIMTU effective in community-based grassroots. Practically, it provides guidance on how to identify the broad social context yielding influence processes on media use in this type of organization, which is not motivated by business-like incentives.

#### *Theoretical implications*

This study proposes using SIMTU to investigate the social context supporting the community-based organization's mission. In this type of NFP organization, the social context that may affect media use choices is generated from the social interaction between the organization's members, and from the interaction between members and community constituents. The focus of the proposed modification to the model is on the immediate social environment in which such an organization operates, and its

potential provisions to the social processes affecting organization members use of technology.

The implementation of the proposed expanded model with the use of in-depth interviews and participant observations outlines the extension and impact of the social context. It enables more comprehensive probing of the social influence processes affecting technology use, such as e-mail use, and identification of relevant opinion leaders.



**Figure 2: Proposed Expansion of SIMTU**

NOTE: Proposed expansion is shown in bold

### *Practical Implications*

This thesis suggests that the study of social influence on technology use in organizations is dependent on external social variables as well as internal variables, especially in organizations which are not for profit, not business-oriented and community-based. For the investigation of these external variables or provisions, the proposed extension requires the research methods to allow for elaborate inquiry of the social context in which the organization and its members operate.

Research methods employed in such a study should survey or probe normative behaviours, attitudes and perceptions regarding media use in the studied organization as well as its constituent community:

*Sample & setting* – For implementation of the expansion of the model, a sample should be taken from the general community population. A study should be set within the given organization, as well as in peer local organization and amongst individual community members. In addition, observations should focus on community-based, public computer venues (such as the local library), and respondents' homes.

*Self-reported attitudes and behaviour towards specific technology use* – Data collected on the community's normative attitude towards media use should balance data collected from organization members.

*Compatibility* – the research needs to explore how compatible the technology is with the way of life of the organization's constituency. As observed in this study, the way members viewed the constituents' perception of the technology's compatibility with the community- not just the organization- socially influenced media use within the organization.

*Opinion Leaders* - The examination of opinion leadership's influence on a community-based NFP organization's media use, should include asking organization

members to identify community-based influential figures, as well as trend-setters within the organization.

### ***Future Research Directions***

This study examined a single NFP grassroots organization in a specific urban community and setting. Hence, the findings are limited and cannot be generalised to other similar organizations. Further research should perhaps progress in two avenues:

1. Applying SIMTU to other, similar organizations (i.e. NFP grassroots), with like social agendas, and in similar settings (i.e. urban community). The goal of such comparisons is to better identify the social contexts which influence media use within the organization. Findings may provide support to the notion that the general constituency plays a role in the social influence processes affecting an organization's member media use.

2. Conducting comparative research of the proposed expansion of SIMTU in two types of NFP organizations: a) grassroots/community-based organizations, and b) business-like organizations (e.g. museums or universities). Findings may provide support to the notion that members within a grassroots organization are subjected to social influence processes and incentives to adopt or reject technology use, both internal and external to the organization. Findings may also support notion that the social influence processes related to media use in business-like NFP are limited to intra-organization interaction.

### ***Limitations***

#### *Generalisability*

This study of social influence on media use in a community-based grassroots organization provides some insights into the social context in which organization

members interact with each other. The study's high response rate (72%) validates the findings and makes the conclusions generalisable to the entire studied organization. Findings reflect attitudes and behaviours somewhat normative in the larger community in which the organization operates. Nevertheless, it can be argued that these findings cannot be generalisable to the entire community, nor may they be used to generalise other community-based NFP grassroots organizations.

The research was not designed to be generalisable, but to probe into the possible outcomes a study in an NFP grassroots organization may produce that would be different from previous organizational communication studies. Data collected on perceptions and attitudes identified the social influence processes affecting e-mail use in the studied organization. By doing so, the study achieved its purpose.

The reliability of the data depends on the time frame in which it was taken, as well as the environment. The findings were gathered during a short period of two to three months. As they reflect a specific existing reality in the studied organization, reliable conclusions are subjected to the findings of that period alone. As time passes, many organizations experience members' replacement, as well as other structural changes that may result in different outcomes for a similar study done at a later date. Equivalent studies in similar NFP organizations in the community may contribute to the generalisability of the data if conducted at the same time frame ("synchronic" reliability).

#### *The impact of ethnography*

The study employed qualitative research methods, in-depth interview and participant observation to obtain data on perceptions and attitudes towards e-mail use. The ethnographic research methods required the researcher to personally interact with

the study's subjects (Miles & Huberman, 1994), which may have yielded some influence on respondents and their responses.

The literature (Kirk & Miller, 1986; Miles & Huberman, 1994) suggests that researchers maintain the integrity of their study by offering full disclosure of the research methods structure and outcomes of the researcher-respondent interaction. Researchers are also instructed (Kirk & Miller, 1986; Knorr Cetina, 1999; Rosaldo, 1993) to acknowledge their preconceived expectations for outcomes.

This study was designed as a set of interviews and observations to be conducted in person by the researcher with each respondent individually. An important aspect of applying these research methods was the establishing of trust between the researcher and respondents. Organization members needed to be reassured that anonymity was granted to all, whether they agreed to participate in the study or not, and that by no means would any information about their behaviour or conversations with the researcher be known to others. Therefore, interviews were scheduled directly and discretely with respondents and the participants name list- as well as rejections and negative responses- was not shared with the organization's liaison.

An additional concern arose because respondents were not used to hosting academic inquiries in the organization. The workers requested to learn more about the project and the researcher's background and personality. Therefore, during the first couple of weeks of the study, adjustments were made in the way interviews were handled to allow respondents to gain a better understanding of the study's purposes and reassure them of the confidentiality of their input. This was done by scheduling longer interview sessions and conducting a more personal conversation at the beginning of the interview. This part of the interview was not recorded, however, it may have provided additional information that was later incorporated in the field notes.

It is worth mentioning that some of the respondents initially expressed concern as to the intentions and integrity of the researcher, due to differences in race. However, members expressed increased confidence in the researcher's objectivity after learning that the researcher was not an American citizen, and so, not likely to have been exposed to or influenced by certain race-related biases held by some white Americans.

### ***Conclusion***

This study echoes various diverse aspects of social influence on e-mail use in a community-based organization. Community-based grassroots organizations draw their strengths and support from the constituent community they serve. Therefore, organizational and structural behaviours and attitudes are subjected to norms projected from the constituent community, as well as social processes within the organization.

The research illustrates that processes of media adoption occur at different paces and with varying levels of success among NFP community-based organizations. The study demonstrates the triadic, reciprocal forces affecting media use, specifically e-mail use. Behaviour, perceptions, and contextual events interact and influence each other bi-directionally: Members' reluctance to use e-mail is a direct outcome of the general population's attitude towards this medium. In addition, these attitudes feed back to the organization's paradigm, limiting the possibilities of expanding e-mail use to the carrying out actions for its mission.

Moreover, the inquiry for identifiable opinion leaders is tinted with the comprehensive social context in which the organization operates. The study confirms that when the normative attitude has a negative disposition of (specific) technology use, adoption of new communication technology will be less widespread even when the technology promises more convenience in communication.

## APPENDIX A

### IN-DEPTH INTERVIEW & QUESTIONNAIRE

#### **A) Interview semi-constructed questions:**

\* To avoid identification of participants through the organization's name, the original name was replaced with the acronym NFPGO (not-for-profit grassroots organization).

#### **General questions:**

1. Please describe the kind of work you do at this organization. How long have you been doing this work? What are your job responsibilities and how do you do what you do? (e.g. describe a typical day's work - what do you first do when you come in... what's next?...etc.)
2. [Information exchange preferences] - How do you get information about "things" such as new activities, management messages and so forth at NFPGO (e.g. office mailbox, face-to-face, memo on desk, phone, e-mail, post, billboard, etc.) ...? How do you inform others at NFPGO on activities or messages (even trivial things as change of schedule) related to your work<sup>7</sup>? Give me an example.
3. [Familiarity with computer-based applications] What computer-based programmes do you use for your work (e.g. Word, Excel, e-mail, etc.).
4. [Expertise & level of comfort] When you use computer-based programmes, what do you find most easy to do? Why is that?
5. [Expertise & level of comfort] When you use computer-based programmes, what is most difficult? Why is that?

#### **Compatibility:**

[Relative advantage, compatibility, complexity, triability, and observability]

6. [Complexity - organization] Does using e-mail at NFPGO make things easier or more complicated? How? (depending on previous questions' response) When did it become easier / more complicated? Why? What is NFPGO's most challenging aspect of using e-mail?
7. [Complexity – individual] What is the most annoying experience you had with e-mails?... what is the most gratifying experience, if any, you have had with e-mails in your work? If you needed to e-mail me a message for changing our meeting time – how would you do that?
8. [Triability] Tell me about how e-mails were first introduced at NFPGO? Was that your first experience with e-mails? Or (based on previous response) did you use e-mails before beginning working at NFPGO?... Tell me about that.
9. [Compatibility] What purposes does e-mail use serve best at NFPGO? Is it necessary to know how to use e-mails before beginning working at NFPGO?

---

<sup>7</sup> If response discusses e-mails as preferred method, move to question 6; return to 3-5 later.

10. [Compatibility] How would you describe the compatibility of e-mails with this organization's work-style and mission? Describe your average daily use of e-mails ... for what purposes? How is that different from how you were using e-mails 5 years ago<sup>8</sup>, or in your previous job? How does e-mail affect this organization's mission?
11. [Relative advantage – organization] Compare your work with and without e-mails<sup>9</sup>?... give me an example
12. [Relative advantage - individual] What kind of impact, if any, does using e-mail have on your work at NFPGO?... has e-mail use changed the way you do things at NFPGO? How? Give me an example.
13. [Observability] What kind of impact, if any does using e-mail have on NFPGO?

**Perceptions of use:**

14. [Norms of e-mail use] How would you describe the norm use of e-mail here at NFPGO? When was it introduced? By whom? How many people here (staff, volunteers) actually use e-mail in their work?
15. [Norms of media use] tell me about the ways NFPGO informs the community and other stakeholders (e.g. the municipality, partner-organizations, etc.) about activities, actions, decisions etc'? what is the preferred way to get information out?
16. [Norms of e-mail use] In your opinion, how would you characterise others' e-mail use? (e.g. types of use, frequency, purposes, etc.).
17. [Effectiveness] What kind of support, if any, does e-mail use have from people at NFPGO? What impact, if any, has the use of e-mail had on others' work in the daily context<sup>10</sup>?
18. [Effectiveness] Does it make things at NFPGO easier or more complicated? ... hypothetically, if management was interested in expanding the use of e-mail in NFPGO during the next year, what would your opinion be on that? Why?
19. [Norms of e-mail use] Are there uses of e-mails that you view as inappropriate? Any specific examples? (For each norm violation response) → How did you and the others around you (if any) react?

**Identifying opinion leadership:**

20. [opinion leaders – self perceptions] Do you advise or coach others with their computer use? If so, how? Give me an example.
21. [opinion leaders – self perceptions] Do you advise or coach others with their e-mail use? If so, how? Give me an example.
22. [Opinion leaders – role model] Who do you turn to for advice about e-mail use, service or context? Why? When does that happen? Give me an example.

---

<sup>8</sup> When e-mail was first introduced to ALL NFPGO employees.

<sup>9</sup> The question is especially relevant for interviewees who have been with NFPGO before e-mail was in use. See previous comment.

<sup>10</sup> Different from Q11, because this question discusses other individuals and not the organization as a whole.

23. [Opinion leaders] Who do you talk to at NFPGO about the benefits or disadvantages of e-mail use in your work? Why? Who initiates the conversation? Give me an example.
24. [Opinion leaders] Who do you talk to at NFPGO about the benefits or disadvantages of e-mail use in the organization? Why? Who initiates the conversation? Give me an example.

**B) Questionnaire:**

**Interview #** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Concluding questions (statistics):**

- A) Age: 18-29 30-39 40-49 50-59 60+
- B) Gender: M / F / other
- C) Residential area (in the community<sup>11</sup> / elsewhere in the region).
- D) Level of education:
- a. Some of high-school education
  - b. High school graduates.
  - c. More education than high school graduates but less than bachelor degree.
  - d. Some college.
  - e. Bachelor degree.
  - f. Master degree or higher.
- E) Tenure (in the organization): years \_\_\_ months \_\_\_
- F) How many hours spent per day at work on the computer:
- |   |   |   |   |   |   |   |   |   |    |     |
|---|---|---|---|---|---|---|---|---|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 10+ |
|---|---|---|---|---|---|---|---|---|----|-----|
- G) Experience with technology (e-mail). Years \_\_\_\_ / Months \_\_\_\_
- H) Average use of e-mail (reply to inbox e-mails / compose new e-mails) per day: Never 1-5 times 6-10 times 11-15times 16+ times
- I) Do you use e-mails more from home or from work?
- J) What e-mail account do you use more (even for NFPGO<sup>12</sup> related work): your NFPGO.org account or a personal one (e.g. yahoo.com or gmail.com)?

---

<sup>11</sup> The name of the community is omitted to maintain respondents 'confidentiality.

<sup>12</sup> To avoid identification of participants through the organization's name, the original name was replaced with the acronym NFPGO (not-for-profit grassroots organization).

APPENDIX B  
HUMAN SUBJECT APPROVAL INFORMATION



Cornell University  
Office of Research Integrity  
and Assurance

Institutional Review Board  
for Human Participants

35 Thornwood Drive, Suite 500  
Ithaca, New York 14850-1285  
t. 607.255.5138  
f. 607.255.0758  
uchs@cornell.edu  
www.oria.cornell.edu

**NOTIFICATION OF EXEMPT CLASSIFICATION**

Protocol ID# 07-02-043

To: Sharon M. Shafrir

From: Sarah J. Demo, UCHS Coordinator

Date of approval: February 26, 2007

(If you are using a consent form, enter this date at the bottom of it now.)

Project(s): *Social Influence Processes, Opinion Leadership, and E-Mail Use in a Grassroots Organization Case Study*

As Coordinator of the University Committee on Human Subjects, I have reviewed the above referenced project and it is Exempt from the Federal Regulation for the Protection of Human Subjects (45 CFR 46). As detailed in the application you submitted, the involvement of human subjects in this research study is **strictly limited** to one or more of the exempted categories listed on the attached Citation sheet.

- \* Exemption does not absolve the investigator from ensuring that the welfare of the research subjects is protected and that methods used and information provided to gain subject consent are appropriate to the activity. It is your responsibility as a researcher to familiarize yourself with and conduct the research in accordance with the ethical standards of the *Belmont Report*.  
*Belmont Report*: <http://ohrp.osophs.dhhs.gov/humansubjects/guidance/belmont.htm>
- \* You must immediately notify the UCHS if any changes or modifications are made in the study's design or procedures that do not fall within one of the categories exempted from the regulations. Any such changes or modifications must be reviewed and approved by UCHS *prior* to their implementation.
- \* You are not required to submit progress reports or requests for continuing review/approval to UCHS, unless you modify your study protocol.

Attachment: Exemption Citation

c: Y. Connie Yuan (yy239)

Cornell University is an equal opportunity, affirmative action educator and employer.

**Sharon M. Shafir**

**From:** Sarah Demo (Human Subjects Research) [uchs-mailbox@cornell.edu]  
**Sent:** Monday, February 26, 2007 4:26 PM  
**To:** Sharon Miriam Shafir  
**Cc:** Yu Yuan  
**Subject:** UCHS protocol exempt  
**Importance:** High  
**Follow Up Flag:** Follow up  
**Flag Status:** Red

Dear Sharon,

Your human subjects protocol, "Social Influence Processes, Opinion Leadership, and E-Mail Use in a Grassroots Organization Case Study," has been reviewed by the UCHS Coordinator and is exempt from the federal regulations for the protection of human subjects. Exemption certification for this study is being sent to you (and to your advisor, if applicable) via campus mail.

While you are still required to ensure the welfare of the subjects participating in your study, you are not required to obtain *written* informed consent. You are not required to submit progress reports or requests for continued approval to the UCHS.

\* -- The research must be conducted in accordance with the ethical principles of the *Belmont Report*, found at <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.htm>.

\* -- The exemption certification you receive in campus mail will be accompanied by a copy of the federal regulation citing research activities that qualify for exemption. If you make any modifications to your study protocol that fall outside of the exempt categories listed, you must immediately notify UCHS. Any such modifications must be reviewed and approved by the UCHS **prior** to their implementation.

If you have any questions about this Exempt classification, please let me know.

**UCHS is now located at 35 Thornwood Drive, Suite 500 (near the airport).**

Sarah J. Demo, Coordinator  
University Committee on Human Subjects  
35 Thornwood Drive, Suite 500  
Cornell University  
Ithaca, NY 14850  
(607) 255-5138  
(607) 255-0758 (fax)  
sji4@cornell.edu  
<http://www.osp.cornell.edu/Compliance/UCHS/homepageUCHS.htm>

Sarah J. Demo, Coordinator  
University Committee on Human Subjects  
Office of Research Integrity and Assurance

2/27/2007

## APPENDIX C

### INVITATION TO PARTICIPATE IN THE STUDY

#### LETTER & E-MAIL

Letter/E-mail 1:

Hello,

**RE: E-mail use research study at NFPGO - a request for an interview**

You are invited to participate in a research study of the use of e-mails in a grassroots organization. You were selected as a possible participant because of your professional / lay involvement in the “Not-for-Profit Grassroots Organization”<sup>13</sup> (NFPGO), Rochester (NY). The purpose of the research is to understand how e-mail use is incorporated in the social and work environment of this grassroots organization.

**Procedure:** If you agree to participate, I will be conducting an hour long interview with you which, with your permission, I would audio record for academic purposes.

**Voluntary Nature of Participation:** Your decision whether or not to participate will not affect your current or future relations with Cornell University or with NFPGO. Your participation is voluntary, and you may refuse to participate before the interview begins; you are also free to discontinue participation at any time, ask questions at any time, and/or skip any questions with no effect or penalty to yourself.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify you. Research records will be kept in a locked file; only I will have access to the records. Recorded interviews will be securely stored in my office on audiotapes, and transcripts will be securely stored on my computer and several hard disks. Only I will have access to these records. All data will be destroyed (i.e., shredded or erased) when their use is no longer needed but not before a minimum of five years after data collection. In addition, no information as to your consent or refusal to participate in this research will be shared with anyone at NFPGO.

The research is conducted under the supervision of Professor Connie Yuan (PhD), the Department of Communication, Cornell University, Ithaca, Phone: 607-255-2603; Email: [yy239@cornell.edu](mailto:yy239@cornell.edu). You may contact professor Yuan or myself with any questions or special requests regarding this research.

**Please contact me via phone (585-269-4372) or e-mail ([sharon.shafir@cornell.edu](mailto:sharon.shafir@cornell.edu)) to schedule an interview. This week (March 19 through March 22nd) my**

---

<sup>13</sup> To avoid identification of participants through the organization’s name, the original name was replaced with the acronym NFPGO (not-for-profit grassroots organization).

**schedule is completely free. As for the following weeks, I'll be available on Mondays and Tuesdays (mornings, afternoons and evenings), as well as on Friday mornings and over the weekend.**

**Thank you,**  
*Sharon M. Shafrir*, M.S. Student

--

Letter/E-mail 2 (followed 6 weeks later):

Hello,

About 6 weeks ago, I sent you a letter inviting you to participate in a research study of the use of e-mails in NFPGO, being a grassroots organization. You were selected as a possible participant because of your professional / lay involvement in the Not-for-Profit Grassroots Organization (NFPGO), Rochester (NY). The purpose of the research is to understand how e-mail use is incorporated in the social and work environment of this grassroots organization. A copy of the organization's liaison e-mail<sup>14</sup> on the subject is available at the bottom of this correspondence. As her message notes, I will not inform her or anyone else at NFPGO who accepted and who rejected my request for an interview. Your contribution to my research, whether or not you use e-mails or enjoy using e-mails, is invaluable, and I would sincerely appreciate your consent to being interviewed.

**Procedure:** With your consent, I will be conducting an hour long interview with you which, with your permission, I would audio record for academic purposes.

**Voluntary Nature of Participation:** Your decision to consent or decline will not affect your current or future relations with NFPGO or with Cornell University, which facilitates this research. Your participation is voluntary, and you may refuse to participate before the interview begins; you are also free to discontinue participation at any time, ask questions at any time, and/or skip any questions with no effect or penalty to yourself.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify you. Research records will be kept in a locked file; only I will have access to the records. Recorded interviews will be securely stored in my office on audiotapes, and transcripts will be securely stored on my computer and several hard disks. Only I will have access to these records. All data will be destroyed (i.e., shredded or erased) when their use is no longer needed but not before a minimum of five years after data collection. In addition, no information as to your consent or refusal to participate in this research will be shared with anyone at NFPGO.

---

<sup>14</sup> To maintain confidentiality, the liaison's name was removed from the appendix.

The research is conducted under the supervision of Professor Connie Yuan (PhD), the Department of Communication, 308 Kennedy Hall, Cornell University, Ithaca, NY 14853 Phone: 607-255-2603; Fax: 607-254-1322; Email: [yy239@cornell.edu](mailto:yy239@cornell.edu). You may contact professor Yuan or myself with any questions or special requests.

**Please e-mail me back or contact via phone (585-269-4372) to schedule an interview. Interviews may be scheduled on Mondays, Tuesday (morning, afternoon and evenings), and Friday mornings.**

**Thank you,**  
**Sharon M. Shafrir**, M.S. Student

----

---

**Subject:** Interviews with Sharon Shafrir

*Hello all,*

*For the past 6 weeks NFPGO has been hosting Ms. Sharon Shafrir, a university grad student, for a current research she is doing at our organization on our attitudes and uses of computers and e-mails, in which several of you have already kindly agreed to participate, and allowed Sharon to interview you.*

*Sharon's study may shed light on how we at NFPGO utilize technology to our benefit, and how this technology may be adjusted better to our advantage. In order to achieve better and accurate results, Sharon will contact you in the next few days, with requests for interviews (maximum one hour long; those who already interviewed are exempt).*

*Participation in Sharon Shafrir's study is voluntary and confidential. Sharon is not going to share with anyone at NFPGO information about study participants and the interviews. At the end of the study, her entire paper and conclusions will be available here for reading and observations.*

*You are not required to be supportive of computer technology, avid user, or computer literate. If you will receive Sharon Shafrir's request in the next few days (either by e-mail or by post), I would appreciate it if you would consent to participate in her study. As mentioned above, Sharon is not going to inform me or anyone else at NFPGO who accepted and who rejected her request.*

*Thank you for your assistance*

## APPENDIX D

### INVITATION TO PARTICIPATE IN THE STUDY LOG SUMMARY

Table D.1 Invitation log summary

	Number of addressees	Number of respondents:	1 <sup>st</sup> Attempt response rate:	<i>Number of messages un-replied:</i>
Letters	36	1	2.7%	35
E-mail	19	4	21%	15 [6 e-mails read, and 2 deleted unread <sup>15</sup> ].
Face-to-Face	1	1	100%	-

<sup>15</sup> “On record” – relying on Microsoft Outlook technology, e-mails were sent out to respondents with a request to confirm reading of the received e-mail. Most of the organization’s computers in which this e-mail application is installed, are set to automatically respond to such request and inform the sender whether the message was read or was deleted unread, without notifying the recipient of this automated action.

Table D.1 (continue)

<b>Follow-up, 2<sup>nd</sup> and 3<sup>rd</sup> attempts<sup>16</sup></b>						
	Number of addressees:	2 <sup>nd</sup> Attempt response rate <sup>17</sup> :	<i>Number of messages un-replied:</i>	Number of addressees:	3 <sup>rd</sup> Attempt response rate:	<i>Number of messages un-replied:</i>
Letters (used for the 3 <sup>rd</sup> attempt)	N/A	N/A	N/A	12	75%	3
E-mails	15	26%	11 [on record: 1 e-mail was read, 2 were deleted unread]	N/A	N/A	N/A
Face-to-Face	1	100%		7	100%	-
Phone	7	85.7%	1	1	0%	1
<b>Totals:</b>	<b>32</b>	<b>5</b>	<b>27</b>	<b>4 no-</b>		
	<i>responds</i>	<i>declines</i>	<i>accepts</i>	<i>response</i>		

<sup>16</sup> Attempts 2 and 3: resending messages to or initiating Face-to-Face communication with those who did not respond to the first invitation.

<sup>17</sup> The response rate for attempts 2 & 3 may include replies **declining** the invitation to participate in the study.

## APPENDIX E

### CELL PHONE USE DATA

Data collected indicate that 23% of organization members (N=6) use their cell phones for text messaging, the majority of which is conducted for social purposes. Five organization members (19.2%) stated that they prefer text messaging to e-mail use and that they wouldn't mind receiving organization-related information through this medium.

*“Most of the after-school staff don't really have cell phones... but the kids (youth) - about 25% [of them] have cell phones”* (after school staff member)

However, two staff members who also reside in the community, age range 40-59, suggested ¼ of the local high-school students carry cell phones, and an additional 30% of community residents use this medium often as well. Another young staff member, who reported extensive use of cell phone text messaging capabilities (average of 30 messages a day), reported a wide local social network of teens and young adults (age range 16-24) who generate and receive 15-25 text messages per day with each other. The purpose for using this mean of communication, as reported by this individual, is mainly to share information about social events and activities, and to set-up meetings and social gatherings.

*“For this community face-to-face is the best, but in a community so diverse, it's always good to have other means of letting people know what's going on”* (staff member)

The findings suggest text messaging is increasingly accepted by youth and young community constituents as a normative form of communication which is both

available and affordable. As the social context makes this type of communication more acceptable, organization-related information flow among staff members and between the organization and constituents groups, may be expanded to this medium.

## REFERENCES

- Bagozzi, R. P., & Lee, K.-H. (2002). Multiple Routes for Social Influence: The Role of Compliance, Internalization, and Social Identity. *Social Psychology Quarterly*, 65(3), 226-247.
- Bandura, A. (1978). Social Learning Theory of Aggression. *Journal of Communication*, 28(3), 12-30.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory* Englewood Cliffs, NJ: Prentice-Hall.
- Bimber, B. (1999). The Internet and Citizen Communication With Government: Does the Medium Matter? *Political Communication*, 16(4), 409-428.
- Black, J. S. (1982). Opinion Leaders: Is Anyone Following? . *Public Opinion Quarterly*, 46(2), 169-176.
- Borgatti, S. P., & Cross, R. (2003). A Relational View of Information Seeking and Learning in Social Networks. *Management Science*, 49(4), 432-446.
- Burt, R. S. (1999). The Social Capital of Opinion Leaders. *Annals of the American Academy of Political and Social Science*, 566, 37-54.
- Campbell, S. W., & Russo, T. C. (2003). The Social Construction of Mobile Telephony: An Application of the Social Influence Model to Perceptions and Uses of Mobile Phones within Personal Communication Networks. *Communication Monographs*, 70(4), 317-334.
- Castells, M. (1985). *High Technology, Space, and Society*. Beverly Hills, California: Sage Publications.
- Castells, M. (1996). *The Rise of the Network Society* (Vol. 1). Cambridge, MA: Blackwell Publishers.

Charlton, C., Gittings, C., Leng, P., Little, J., & Neilsen, I. (1998). Diffusion of Technological Innovations: Bringing Businesses onto the Internet. In T. J. Larsen & E. McGuire (Eds.), *Information Systems Innovation and Diffusion: Issues and Directions* (pp. 251-296). Hershey, PA: Idea Group Publishing.

Contractor, S. N., & Eisenberg, E. M. (1990). Communication Networks and New Media in Organizations. In J. Fulk & C. Steinfield (Eds.), *Organizations and Communication Technology* (pp. 143-172). Newbury Park, CA: Sage Publications.

Daft, R. L., & Lengel, R. H. (1986). Organizational Information Requirements, Media Richness and Structural Design. *Management Science*, 32(5), 554-571.

Dahlgren, P. (2000). The Internet and the Democratization of Civic Culture. *political Communication*, 17(4), 335-340.

Dahlgren, P. (2004). Forword. In V. Van De Donk, B. D. Loader, P. G. Nixon & D. Rucht (Eds.), *Cyberprotest: New Media, Citizens and Social Movements* (pp. xi-xix). London and New York: Routledge.

David, J. (2004). Wireless World: Social and International Aspects of the Mobile Age/Perpetual Contact: Mobile Communication, Private Talk, Public Performance (Vol. 38, pp. 203).

Davis-Howard, T. (2005a). City of Rochester, NY - 2000 census Demographic Information. In C. compiled (Ed.), *Microsoft Excel*. Rochester, NY: The City of Rochester, Bureau of Neighbourhood Initiatives.

Davis-Howard, T. (2005b). NBN Sector 4 - 2000 Census Demographic Information. In S. compiled (Ed.), *Microsoft Excel*. Rochester, NY: The City of Rochester, Bureau of Neighbourhood Initiatives.

DeSanctis, G., & Fulk, J. (Eds.). (1999). *Shaping Organization Form : Communication, Connection, and Community* Thousand Oaks, California: Sage.

- Eagly, A. H., & Chaiken, S. (1993). *The Psychology of Attitudes* Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.
- Firestone, W. A. (1993). Alternative Arguments for Generalizing from Data as Applied to Qualitative Research. *Educational Researcher*, 22(4), 16-23.
- Froehling, O. (1997). The Cyberspace "War of Ink and Internet" in Chaipas, Mexico. *Geographical Review*, 87(2), 291-307.
- Fulk, J. (1993). Social Construction of Communication Technology. *Academy of Management Journal*, 36(5), 921-950.
- Fulk, J., & DeSanctis, G. (1995). Electronic Communication and Changing Organizational Form. *Organization Science*, 6(4), 337-349.
- Fulk, J., Heino, R., Flanagin, A. J., Monge, P. R., & Bar, F. (2004). A Test of the Individual Action Model for Organizational Information Commons. *Organization Science*, 15(5), 569-585.
- Fulk, J., Schmitz, J., & Steinfield, C. (1990). A Social Influence Model of Technology Use. In J. Fulk & C. Steinfield (Eds.), *Organizations and Communication Technology* (pp. 117-140). Newbury Park, CA: Sage Publications.
- Gatignon, H., & Robertson, T. S. (1985). A Propositional Inventory for New Diffusion Research. *Journal of Consumer Research*, 11(4), 849-867.
- Geertz, C. (1977). *The Interpretation of Culture*. New York, NY: Basic Books.
- Giddens, A. (1979). *Central Problems in Social Theory*. Berkeley: University of California Press.
- Hargittai, E. (2004). Internet Access and Use in Context. *New Media & Society*, 6(1), 115-121.
- Haythornthwaite, C. (2002). Strong, Weak, and Latent Ties and the Impact of New Media. *The Information Society*, 18, 385-401.

Hollingshead, A. B., & Contractor, S. N. (2002). New Media and Organizing at the Group Level. In L. A. Lievrouw & S. Livingstone (Eds.), *The Handbook of New Media* (pp. 221-235). London, UK: Sage.

Illingworth, L., Williams, D., & Burnett, S. (2002). The costs and benefits of the Internet as a marketing and communications tool: the attitudes, perceptions and experiences within the non-profit environmental sector in Scotland. *Aslib Proceedings: new information perspectives*, 54(5), 280-293.

Jackson, M. H., Poole, M. S., & Kuhn, T. (2002). The Social Construction of Technology in Studies of the Workplace. In L. A. Lievrouw & S. Livingstone (Eds.), *The Handbook of New Media* (pp. 236-253). London, UK: Sage.

Jennings, K. M., & Zeitner, V. (2003). Internet Use and Civic Engagement: A Longitudinal Analysis. *Public Opinion Quarterly*, 67(3), 311-334.

Katz, E., & Lazarsfeld, P. F. (1955). *Personal Influence; The Part Played by People in the Flow of Mass* Glencoe, IL: Free Press.

Katz, J. E., & Rice, R. E. (2002). *Social Consequences of Internet Use: Access, Involvement, and Interaction*. Cambridge, MA: MIT Press.

Katz, J. E., Rice, R. E., & Aspden, P. (2001). The Internet, 1995-2000 Access, civic involvement, and social interaction. *American Behavioral Scientist*, 45(3), 405-419.

Kellogg, W. A. (1999). Community-Based Organizations and Neighbourhood Environmental Problem Solving: A Framework for Adoption of Information Technologies. *Journal of Environmental Planning and Management* 42, no. 4 (1999): 445-469, 42(4), 445-469.

Kelman, H. C. (1961). Processes of Opinion Change. *The Public Opinion Quarterly*, 25(1), 226-247.

- Kirk, J., & Miller, M. L. (1986). *Reliability and Validity in Qualitative Research*. Newbury Park, CA: Sage Publications.
- Klebe Trevino, L., Webster, J., & Stein, E. W. (2000). Making Connections: Complementary Influences on Communication Media Choices Attitudes, and Use. *Organization Science*, 11(2), 163-182.
- Knorr Cetina, K. (1999). *Epistemic Culture: How the Science Make Knowledge*. Cambridge, MA: Harvard University Press.
- Latour, B., & Woolgar, S. (1986). *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press.
- Lebert, J. (2003). Wiring Human Rights Activism; Amnesty International and the Challenge of Information and Communication Technologies. In M. McCaughey & M. D. Ayers (Eds.), *Cyberactivism: Online Activism in Theory and Practice* (pp. 209-231). New-York: Routledge.
- Lewis, D., & Madon, S. (2004). Information Systems and Nongovernmental Development Organizations: Advocacy, Organizational Learning, and Accountability. *The Information Society*, 20(2), 117-126.
- Lewis, L. K., & Seibold, D. R. (1993). Innovation Modification During Intraorganizational Adoption. *The Academy of Management Review*, 18(2), 322-354.
- Lievrouw, L. A. (2002). Determination and Contingency in New Media development: Diffusion of Innovations and the Social Shaping of Technology Perspectives. In L. A. Lievrouw & S. Livingstone (Eds.), *The Handbook of New Media* (pp. 183-199). London, UK: Sage.
- Lind, M. R., & Zmud, R. W. (1991). The Influence of a Convergence in Understanding Between Technology Providers and Users on Information Technology Innovationess. *Organization Science*, 2(2), 195-217.

McLeod, J. M., Scheufele, D. A., & Moy, P. (1999). Community, Communication and Participation: the role of mass media and interpersonal discussion in local political participation. *Political Communication*, 16, 315-336.

McLeod, J. M., Scheufele, D. A., Moy, P., Horowitz, E. M., Holbert, R. L., Zhang, W., et al. (1999). Understanding Deliberation: The effects of discussion Networks on Participation in a Public forum. *Communication Research*, 26(6), 743-776.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Noelle-Neumann, E. (1990). The Theory of Public Opinion: The Concept of the Spiral of Silence. In J. A. Anderson (Ed.), *Communication Yearbook* (Vol. 14, pp. 256-287). Newbury Park, CA: Sage Publications.

Norris, P. (2000). Information Poverty and the Wired World. *Harvard Interbational Journal of Press/Politics*, 5(3), 1-6.

Norris, P. (2001). *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. New York, NY: Cambridge University Press.

O'Callaghan, R. (1998). Technology Diffusion and Organizational Transformation: An Integrative Framework. In T. J. Larsen & E. McGuire (Eds.), *Information Systems Innovation and Diffusion: Issues and Directions* (pp. 390-410). Hershey, PA: Idea Group Publishing.

O'Lear, S. (1999). Networks of Engagement: Electronic Communication and Grassroots Environmental Activism in Kaliningrad. *Geografiska Annaler. Series B, Human Geography*, 81(3), 165-178.

Orlikowski, W. J. (1992). The Dualilty of Technology: Rethinking the Concept of Technology in Organizations. *Organization Science*, 3(3), 398-427.

Park, H. S. (2002). Case Study: Public Consensus Building on the Internet. *Cyber Psychology & Behavior*, 5(3), 233-239.

Poole, M. S., & DeSanctis, G. (1990). Understanding the Use of Group Decision Support Systems: The Theory of Adaptive Structuration. In J. Fulk & C. Steinfield (Eds.), *Organizations and Communication Technology* (pp. 173-193). Newbury Park, CA: Sage Publications.

Postmes, T., & Brunsting, S. (2002). Collective Action in the Age of the Internet. *Social Science Computer Review*, 20(3), 290-301.

Rogers, E. M. (1983). *Diffusion of Innovation* (3rd ed.). New York: Free Press.

Rogers, E. M. (2003). *Diffusion of Innovation* (5th ed.). New York: Free Press.

Rosaldo, R. (1993). *Culture & Truth: The Remaking of Social Analysis*. Boston, MA: Beacon Press.

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative Interviewing : the Art of Hearing Data* Thousand Oaks, CA: Sage Publications.

Schmitz, J., & Fulk, J. (1991). Organizational Colleagues, Media Richness, and Electronic Mail: A Test of the Social Influence Model of Technology Use. *Communication Research*, 18(14), 487-523.

Shah, D. V., & Scheufele, D. A. (2006). Explicating Opinion Leadership: Nonpolitical Dispositions, Information Consumption, and Civic Participation. *Political Communication*, 23(1), 1-22.

Smoreda, Z., & Thomas, F. (2001). *Social Networks and Residential ICT Adoption and Use*. Paper presented at the EURESCOM Summit, Heidelberg, Germany.

Still, M. (2006). *The Diffusion of the Internet Amongst the Corporate Elite* (pp. 37): Institute for the Social Sciences, Cornell University.

Strauss, A. L., & Corbin, J. M. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd ed.). Thousand Oaks, CA: Sage.

Thomas, S. R. (1967). The Process of Innovation and the Diffusion of Innovation (Vol. 31, pp. 14-19).

Valente, T. W., & Davis, R. L. (1999). Accelerating the Diffusion of Innovations Using Opinion Leaders. *Annals of the American Academy of Political and Social Science*, 566, 55-67.

Venkatraman, M. P. (1989). Opinion Leaders, Adopters, and Communicative Adopters: A Role Analysis. *Psychology-and-Marketing*, 6(1), 51-68.

Warschauer, M. (2003). *Technology and Social Inclusion: Rethinking the Digital Divide* Cambridge, MA: MIT Press.

Wood, J. (2005). How Green is My Valley? Desktop Geographic Information Systems as a Community-Based Participatory Mapping Tool. *Area*, 37(2), 159-170.

Wood, R., & Bandura, A. (1989). Social Cognitive Theory of Organizational Management. *The Academy of Management Review*, 14(3), 361-384.

Yates, J., Orlikowski, W. J., & Okamura, K. (1999). Explicit and Implicit Structuring of Genres in Electronic Communication: Reinforcement and Change of Social Interaction *Organization Science*, 10(1), 83-103.

Yerxa, S. W., & Moll, M. (1994). Notes from the grassroots: online lobbying in Canada. *Internet Research: Electronic Networking Applications and Policy*, 4(4), 9-23.

Yuan, Y., Fulk, J., Shumate, M., Monge, P. R., Bryant, J. A., & Matsaganis, M. (2005). Individual Participation in Organizational Information Commons: The Impact of Team Level Social Influence and Technology-Specific Competence. *Human Communication Research*, 31(2), 212-240.