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The Expanding Use of Information Technology in the Social Services: A Study of Small Nonprofit Social Service Organizations in the Bay Area

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The Expanding Use of Information Technology
in the Social Services:
A Study of Small Nonprofit Social Service Organizations in the Bay Area

A Thesis Submitted

By

Jenifer Fay

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in the Social Services:
A Study of Small Nonprofit Social Service Organizations in the Bay Area**

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This Thesis written under the guidelines of the Faculty Advisory Committee, and approved by all its members, has been accepted in partial fulfillment of the requirements for the degree of:

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Abstract

A survey was sent to 243 nonprofit social service organizations in six Bay Area

counties on August 6, 2002. There were 72,surveys completed and returned by

the stop of data collection on September 30, 2002. This survey was distributed as

part of a research study identifying the access and use of e-mail and the Internet

by nonprofit social service organizations in the Bay Area. The study also

investigated perceptions held by nonprofit organizational leaders regarding the

usefulness and impact of technology on the social service field.

Survey results identified that proximity to the Silicon Valley increases the

likelihood of IT use, however there are still many NPOs in the Bay Area not

using e-mail. Survey data suggests that area NPOs need more adequate hardware

to efficiently perform job tasks. Findings suggest that NPOs using e-mail and

the Internet value technology and perceive it to be beneficial for the social

service field. Findings also suggest that NPOs not currently using e-mail are not

as aware of the impact or benefits nor are they aware of resources available to

help NPOs access technology.

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CHAPTER ONE

Background of the Issue

The Digital Divide is a relatively new term to describe a gap in access to information technology. This gap has long been in existence in regards to access and use of information technology. The Digital Divide has become an indicator of increasing disparity in socioeconomic development within the United States. It identifies the new "Have" and "Have-nots" of the 21st century. (National Telecommunications and Information Administration, 2000.)

Only in the last decade has this division become so critical that the federal government invested over 300 million dollars in grants and incentives to research and identify possible solutions for "closing the divide" (Office of the Press Secretary, 2/2/2000). Inequitable access to technology is a national concern because it reflects a corresponding inequity in educational and employment opportunities within the United States (U. S. Commerce Department, 1999).

There is accumulating evidence that access to information technology bestows economic benefits, and those lacking access are at risk of exclusion from the very fabric of the nation's economy (Bikson & Panis, 1995). The high tech industry which includes computer and information technology is a dominating force behind the U.S. economy and at the foundation of record breaking economic growth throughout the 1990s. As the high tech industry grows in size and influence, it is increasingly important for individuals in the workforce to have the skills necessary to sustain the industry (Office of Technology Policy, 1999).

To many professionals in traditionally non-computer oriented fields, information technology seems to have infiltrated "overnight". For example in the Arts, physical skills previously needed by theater technicians have been replaced with the need for programming

skills as light grids, booms, and spot lights can be set, focused and run through a laptop PC loaded with an appropriate software package. Graphic Designers, photographers and illustrators are increasingly dependent on computers to create, manipulate, or touch up their projects. Filmmakers using digital cameras have significantly cut production expenses by eliminating the need for film, developing and processing services. On an educational level, parents and teachers who viewed personal computers as an advantageous luxury for children in the nineties are now considering PCs as a necessary tool for educational success (U.S. Department of Education, 1999).

The feeling of "overnight infiltration" is not far from an exaggeration. The number of Internet users grew exponentially through out the nineties (Gray, 1996). The number of American's with e-mail accounts increased almost 400% between 1994 and 1997 (McConnaughey, 1999). The March 2001 Nielson NetRating reported more than 100 million Americans used the Internet. This is a dramatic increase from the estimated 13 million Internet users in 1993 (Hanna, 1995).

The Internet Software Consortium reported the existence of 68 million active hosting networks in the U.S. as of July 2000. A network can host a variable number of e-mail addresses. The Consortium confirmed that 82% of these host network accounts were designated for commercial use, 10% designated to educational institutes, 6% had a variety of miscellaneous government designations, and less than 2% appeared designated for the nonprofit sector.

Over the past ten years desktop computers and information technology systems have become ubiquitous in both small and large businesses. Electronic networking has changed the way companies in the private sector are doing business. LAN networks, open-operating systems,

collaboration software, instant messaging, and a variety of opportunities for "virtual meetings" are all new tools fostering and simplifying communication and information sharing. E-mail is a relatively simple application that established a new standard for business communication.

E-mail is a common and straightforward technological application. Companies use e-mail to facilitate communication between departments, colleagues and clients on and off-site. The advantages to using e-mail include fast correspondence of "telephone-type" messages, memos and other documents that might otherwise be sent via facsimile, or traditional postal services. E-mail correspondence can be saved, filed, tracked and monitored electronically, reducing the use of paper and filing space (Cairncross, 1997). Using e-mail to communicate can reduce time spent in meetings as well as time on the telephone and eliminate incidents of "phone-tag." E-mail is asynchronous, meaning that individuals do not need to be present or logged on to a system in order to receive messages (Law & Keltner, 1995). E-mail systems afford users greater flexibility in receiving and transmitting correspondence compared to other modes of communication due to the portability of hardware and the accessibility of most "mailboxes" from almost any phone line. International e-mail correspondence is quicker and much less expensive than relaying the same information by telephone or facsimile.

E-mail is a fast, efficient, low cost method for communicating. E-mail makes employees more accessible than ever. E-mail and the Internet have developed into great equalizers within the business world, fostering the formation of electronic marketplaces and relationships among businesses (Schneiderman, 2000; Cairncross, 1997; Bikson & Panis 1997). They have contributed to the development of an alternative sense of community and inter-personal connection through "virtual communities" (Sproull & Farajj, 1997).

Small companies can communicate, advertise, and solicit prospective consumers, process goods and services locally, nationally, and internationally using e-mail and the Internet as their primary tools. The Internet provides companies with an opportunity to expand their customer base quickly and efficiently. An interactive website can give thousands of potential customers immediate information and access to a company's products and services.

Even the most simple website designs can provide a visitor with relevant and necessary product and service information. By taking advantage of opportunities provided through technology, smaller companies are better able to compete with large conglomerates (Cairncross, 1997). Information technology (IT) has facilitated the creation of a new competitive marketplace among businesses with the emergence of e-commerce.

Meetings and training can be conducted online where geographically distributed work teams can meet and discuss issues in real time. Field staff who spend significant time away from the office can stay connected to the company with access to an on-line corporate database, file sharing, e-mail, and a variety of other collaboration software applications, helping to create a "virtual" office or classroom (Princeton Survey Research Associates, 2001; Timms, 2000).

E-mail, "chat rooms", community bulletin boards, listserves, online support groups, online conferencing, and instant messaging are all examples of expanded communication opportunities created through information technology, providing new ways for people to seek feedback, assistance, support, and affiliation (Sproull & Farajj, 1997). Information technology has given rise to new methods of collaboration.

E-mail is currently accepted as one of the most cost effective and efficient modes of communication available. Small nonprofit organizations (NPOs), chronically perceived as

lacking both time and resources, would appear to be perfectly suited for e-mail as a cost effective, efficient, technological business solution. However, community-based NPOs, particularly social service organizations, may not use simple IT applications like e-mail as widely as one might expect (Kirschenbaum & Kunamneni, 2001).

There are a number of service providers and on-line journals dedicated to the social service industry, indicating that the social service field is tapping into the IT world. Some nonprofit organizations use e-mail and the Internet to increase access to clients, promote their mission, conduct research, advertise services, access resources, and diversify fundraising efforts (Cravens, 1997).

Several industries make up the NPO category comprising the Arts, environmental protection, human rights, animal rights, private education, hospitals, and private social clubs. According to the IRS, social service organizations make up 37% of the nation's NPOs but have historically accounted for approximately only 9% of the total revenue for the nonprofit sector (Boris, 1998; DeVita, 1997; Powell, 1987). The vast majority of nonprofit revenue comes from health care and educational institutions. Healthcare, education, and fundraising organizations are also the primary focus of IT-related research concerning the nonprofit sector.

Philanthropist J.D. Rockefeller III once described the nonprofit sector as the "invisible sector" within the United States (O'Neill, 1989). It appears that the social service industry may be "invisible" within the sector itself, particularly in regards to technology.

There is an uncomfortable history of the relationship between the social service industry and computer technology that may perpetuate the reluctance of small NPOs to invest in IT (Resnick, 1994; Mandell, 1989). The history stems from financial, philosophical, and cultural

circumstances. The financial issue is simple. Technology costs money, and traditionally nonprofit social service organizations have very little money to spend. The initial investments for hardware, software, website development, Internet Service Providers, and staff training can be significant, even though the actual cost to run e-mail systems and access the Internet is quite small compared to the initial cost of hardware to operate the systems.

There is the additional expense of training staff to use the computers, purchasing software applications, and maintaining and updating both the software and the operating systems. Ultimately, a long-term commitment of financial and human resources is necessary for organizations to benefit from IT systems. To succeed, this commitment to technology requires support and participation from the board, administration, management, and line staff. A conservative nonprofit Board of Directors may find such expenditures difficult to justify, particularly if the NPO previously survived without these tools (Gertsman, 1996; Hanna, 1995).

The impeding philosophical issue represents the embedded cultural belief among the social service industry that human services are innately incompatible with technology for anything other than administrative tasks. The perspective is that computers are cold machines, with no ability to be subjective or compassionate—two characteristics essential for human service work (Hanna, 1995; Resnick, 1994; Mandell, 1989).

Traditional social service culture is not exposed to technology, nor does it attract or nurture a technologically savvy mindset. Consumers and providers of social services do not ordinarily reside in communities where computer technology is readily accessible or prevalent; therefore the technology is perceived to be culturally irrelevant (Hanna, 1995; Resnick, 1994).

Digital Divide-related research identifies a lack of Internet content relevant to the population, coupled with limited access to the Internet, as primary factors that discourage the use of technology (National Telecommunications and Information Administration, 2000). The population identified as most hurt by the Digital Divide is part of the same demographic group served by traditional, nonprofit, social service organizations. Considering the lack of relevant Internet content and the shared population, it is logical to assume that these NPOs do not use information technology and are therefore also a part of the Digital Divide community. PolicyLink, a national nonprofit organization, identified this situation as the "Organizational Divide" (Kirschenbaum & Kunamneni, 2001). The Organizational Divide refers to the gap in IT access among businesses and organizations whereas the Digital Divide is generally associated with individuals and communities.

If NPOs serving Digital Divide communities provided websites that included location information, service descriptions, hours of operation, eligibility criteria, contact information and a link to an active e-mail address, then there would be content relevant to the community available on the Internet. Either the kinds of information in this example are not commonly provided by such NPOs or the client population is not aware of it and/or how to access it.

While e-mail and the Internet have already altered the way the private sector conducts business, they are just beginning to impact the way nonprofits conduct business as well. Technology presently considered advantageous for nonprofits is increasingly considered necessary to be competitive in the industry (National Telecommunications and Information Administration, 2000). As government agency and research reports indicate, the economic

survival of NPOs may depend on the ability to quickly transition into this technology-rich information age.

Competition for federal and private funding is continually increasing. Nonprofits are forced to diversify funding by securing more community and corporate support and to be less dependent on shrinking government funds (Boris, 1998; DeVita, 1997). A struggling economy and the events of September 11, 2001, further intensify the demand for services as well as the competition for funding. Nonprofits without access to adequate computer technology not only alienate themselves further from the private sector but risk losing independent and public sector funds as well (Schneiderman, 2000).

NPOs are pressured to respond to the changes in funding availability by pursuing alternative funding sources and by implementing more lean and efficient business operations (Boris, 1998). Considering that nonprofit organizations are increasingly expected to operate like for-profit companies, they should also have access to the standard operating technology.

Statement of the Issue

Nonprofit social service organizations need to "get wired." NPOs need to transition into the information age by having access to basic IT resources such as the Internet and e-mail. The history of technology and the social services indicate that technology is not valued or culturally relevant. Therefore there is little internal organizational motivation to invest in the technology necessary to maintain a competitive position in the field. This study examines whether or not social service NPOs within the Bay Area that operate on limited budgets currently use and access such technology.

NPOs who currently have access to e-mail and the Internet may be more likely to value technology and therefore more willing to invest resources in IT. NPOs not using technology such as e-mail or the Internet may not value technology enough to commit to the investment necessary to "get wired".

There is very little available research on the use of information technology by small, nonprofit social service organizations. Technology-related research involving the social service field has focused predominately on large government human service agencies or nonprofit educational institutions and has not benefited the small NPOs. This study intends to address the Organizational Divide as it relates to social service NPOs with limited budgets.

Research Questions

1. Are small Bay Area nonprofit social service organizations using information technology such as e-mail and the Internet?

2. How are e-mail and the Internet used by the small NPOs?

3. Are there common reasons among the sample population preventing the implementation of technology?

4. Is there a relationship among the sample population between using e-mail and the Internet and an organization's demographics?

5. Is there a relationship between the use of information technology and an organization's proximity to Silicon Valley?

6. Is there a relationship between an organization's use of e-mail and the perception of the impact e-mail has had on the social service field?

7. In general, how do Bay Area social service NPOs perceive information technology as it relates to their organizations?

Definitions of Major Concepts

Access

Access was defined as the ease with which employees could use e-mail and/or the Internet. It included variables such as whether the organization provided employees with e-mail accounts and made those accounts accessible through individual computers, the number of computers per staff, and the level of training provided for the use and maintenance of the systems.

Acoustic

Acoustic was the designation used only on the questionnaire as a non-biased label for respondents who did not use e-mail and answered, "No" on question 18 of the survey. The Acoustic label was used to identify the portion of the survey intended for completion only by respondents without access to e-mail.

Formal

"Formally" allocated staff were staff assigned the responsibility of handling IT-related issues as identified by job description or by a title such as IT Specialist. An "informally allocated" staff member suggested paid or unpaid staff members who handled IT-related issues not because of their position, but rather based on variables such as personal IT interest, experience, talent, or technical training.

Impact

Impact broadly measured the respondent's perception of e-mail as a significant tool for the social service industry. Greater impact indicated a greater perception of its importance and significance for the industry.

Information technology (IT)

IT identified computer systems within the context of the NPOs' standard tools of operation, including hardware, software, networked systems, e-mail, and the Internet.

Plugged In

Plugged In was the designation used only on the questionnaire as a non-biased label for respondents who used e-mail and answered, "Yes" on question 18 of the survey. Plugged In was the designation assigned to the portion of the survey intended to be completed only by respondents who had e-mail access at work.

Small

Nonprofit organizations operating on what is commonly referred to as a "shoestring budget". Small referred to the size of the annual budget. For the purpose of the study, criteria for the sample population included having an annual budget under $500,000. The size of an annual budget was relative to the regional cost of living and therefore budgets considered "small" varied from region to region. California's Bay Area was among one of the most expensive areas to live and work in the country. Therefore $500,000 suggested a modest operating budget in the Bay Area (American Chamber of Commerce, 1999).

Social Service Organization

Defined by the Registry of Charitable Trust Primary Purpose classification code system. The codes selected as defining social service organizations for the study were: 042 (social

welfare general), 101 (welfare for aged), 102 (welfare for alcoholics and narcotic users), 104-113 (welfare benefiting children, ethnic or racial groups, disabled, legal aid, needy persons, retired employees, social service, veterans and armed services, and housing), 122 (crime prevention ad juvenile delinquency) and 305 (developmentally disabled and or emotionally disturbed adults and children).

Upgrade

This term referred to improving the IT system by implementing more advanced versions of the system or adding adaptive software that enhanced the performance of the current system. Upgrading was a method of keeping up with technical advances".

Upkeep

Upkeep referred to the actual care and investment required to physically maintain and sustain IT systems so that they functioned the way they were intended to function.

Importance of the Study

This research is important because it focused on a rarely acknowledged casualty of the Digital Divide: the small nonprofit social service organization. This study attempted to bridge the Organizational Divide by filling a gap of information in current research on the independent sector with new data regarding technology and small social service organizations. There was little research of any type focusing specifically on small social service NPOs. This study will contribute to expanding the focus of research within the independent sector.

The extent of e-mail use and access to the Internet was unknown among small, nonprofit social service organizations. There were almost no data describing the use of

technology by nonprofit social service organizations on a shoestring budget. This study

set out to identify the e-mail and Internet users within a random sample population of

nonprofit social service organizations with annual revenues under $500,000 in

California's Bay Area, and to attempt to identify common barriers to accessing

information technology within the sample population. Ultimately, the study would

identify any statistically significant relationships that might have existed between an

NPO's demographics, the use of e-mail, and the value placed on technology.

CHAPTER TWO: LITERATURE REVIEW

The majority of e-mail specific research has focused on the private sector. However, there are significant data on the use of information technology (IT) by individuals living below the poverty line, minority groups, and individuals with disabilities. These groups demographically represent populations commonly served by nonprofit social services organizations. There is a substantial amount of published data describing the use of IT by these populations, and yet a lack of IT-related data on the NPOs serving them. This points to either a gap in the use of technology, or a gap in available research literature, or both.

The following literature review summarizes available research on the impact that IT systems have had on the social service field. Articles covering the following areas within the field of technology and social services are reviewed: use of IT and electronic network systems, changing perceptions of technology in human services, accessibility of e-mail and the Internet, and the philanthropic trends affecting social services.

Use Of Information Technology Systems

The consensus among reviewed authors is that there was a strong potential for increased organizational efficiency and effective service delivery through the use of computer technology, including electronic networking and information systems. Article after article described the need for the social service industry to explore technological opportunities and implement IT and networking systems in order to stay competitive.

There was agreement that e-mail and the Internet, as well as other networking technologies, can provide an easy, cost-effective, efficient medium for exchanging ideas and information. E-mail can increase the opportunity to disseminate information and

increase the efficiency of communication, due to its digital and asynchronous nature. There was no restriction on time or distance when sending e-mail messages. Similarly, the Internet provides a seemingly endless library of information without the need to be physically present, as required by more traditional library research methods.

E-mail is also considered to be a "gateway technology," a catalyst for expanding the use of networking systems (Law & Keltner, 1995). E-mail, electronic conferencing, and electronic chat rooms are the most commonly used networking features. These applications are the initial entry points for most non-technical users. Their ease of use, coupled with immediate and obvious benefits for users, promotes further investigation of the technology, leading to more advanced usage (Law & Keltner).

In December 2001, Cisco Systems partnered with Independent Sector to sponsor one of the few research projects that specifically examined social service organizations' use of information technology. The article, "Wired, Willing and Ready: Nonprofit Human Service Organizations' Adoption of Information Technology" (Princeton Survey Research Associates, 2001) presented basic data on IT systems used by human service organizations of all sizes, randomly selected across the United States.

The summary report (Princeton Survey Research Associates, 2001) concluded that the vast majority of organizations (88%) surveyed viewed IT as important for functioning on a daily basis. Seventy-nine percent (79%) of the 203 survey respondents reported using e-mail; 77% used the Internet, but less than half of the organizations had a website.

According to this same study (Princeton Survey Research Associates, 2001), large organizations with annual expenditures greater than one million dollars were more likely

to use IT systems, more likely to identify IT as essential for daily operations, and better able to keep up with technological advancements than small or medium-sized organizations. Large social service organizations were also more likely to make enhancing IT systems a priority. Organizations with annual expenditures under $100,000 were classified as "small." Small organizations in the sample population were the least likely to have trained IT staff or a website.

Some respondents believed increasing the use of technology within their organizations might actually distract people from their mission and alienate staff and volunteers. Small respondent organizations (39%) were more likely than large respondent organizations (15%) to believe enhancing IT systems would not improve their performance at all in carrying out their mission (Princeton Survey Research Associates, 2001).

The study surveyed the use of a variety of IT systems including networks, websites, the Internet, and e-mail. The respondents represented a broad spectrum of financial resources. The results presented in the article led to the conclusion that the social service field believed enhanced IT systems would benefit their ability to meet and fulfill their missions, and increase efficiency (Princeton Survey Research Associates, 2001). The article did not include any statistical tests or advanced analysis of the data.

Another research article, "Bridging the Organizational Divide," published by PolicyLink, an advocacy and research NPO, supported the theory that enhancing IT systems would increase the efficiency for social service organizations as well as act as a catalyst to bridge the Digital Divide. The article identified a significant lack of access to information technology by NPOs, and a lack of use of IT by the NPOs serving the Digital

Divide population. PolicyLink labeled this lack of access to information technology by the NPOs as the "Organizational Divide" (Kirschenbaum & Kunamneni, 2001).

Increasing NPOs' access to technology, thereby reducing the Organizational Divide, is key to closing the Digital Divide. Despite the particular goals of an NPO, any agency directly in contact with the community can help lessen the deficiency in the community's access to technology. Practically speaking, the social service organization regularly accessed by the community affected most by the Digital Divide has the greatest potential to successfully lessen the technology gap by providing the opportunity for exposure and access to information technology that would otherwise not be available to their constituents. For example, a caseworker accessing the Internet in the presence of a client demonstrates simple and beneficial exposure to technology. The PolicyLink article suggested that NPOs implement IT systems to increase efficiency, attract clients within the community by providing relevant information on-line regarding their services, and network with other NPOs to enhance collaborative effort. Ideally, NPOs would increase their own effectiveness while further promoting access and IT exposure within the community as a natural consequence of IT use (Kirschenbaum & Kunamneni, 2001).

Collaborative practice is a unique use of IT systems that many believe would benefit the social service field. Educators have been experimenting and investigating the benefits of collaborative software and Internet applications for years. The Department of State's Bureau of Educational and Cultural Affairs (ECA) has initiated a variety of diverse programs that explore the benefits of on-line collaboration as technical and cultural education experiences. The hope is to bridge the Digital Divide on an

international scale while providing mutually beneficial educational and cultural experiences for all participants, teachers and service providers (Mussman, 2001).

The ECA awarded grants to a selection of NPOs to fund programs that bridge the Digital Divide, while providing the opportunity for public diplomacy and educational and cultural exchange. The Armenia Connectivity Program is one such initiative that provided 100 Armenian schools with access to the Internet, computer training, and Internet-based education. The Armenian schools were then networked with 24 high schools in the United States for an on-line cultural exchange project executed with collaborative Internet software. Physical exchanges between teachers from both countries were included to enhance and complement the cyber-exchange experience (Mussman, 2001).

Providing a network-connected machine for people or a community with no previous association or practical training will not guarantee that they can use the technology to meet their needs, (Hargittai, 2002). Hargittai's study focused on the inequalities in Internet use as a result of exposure, training, age, and education. The study addressed issues like the expected benefits from projects using collaborative IT systems could be impeded by technical and circumstantial obstacles such as inadequately trained users, unreliable power sources, unreliable connections, poverty, and user unfriendliness in programs and applications.

Timms's (2000) article on educational use of collaborative software examined the history of social service collaboration via IT as it evolved in Scotland from an initial solution for prohibitive travel costs from remote locations to on-line collaboration as an educational tool for social work students and professionals. The on-line collaboration

projects discussed in this article were modules providing the opportunity and forum for participants from diverse locations covering great distances to present, discuss, argue, and resolve social service and welfare issues in "real-time." The programs used "instant messaging" technology and "chat room" formats to create the sense of a virtual meeting or classroom where all participants had access to the instructor and the information being shared.

The unprecedented opportunities for social and professional inclusion presented by collaborative use of IT systems seem endless. Computer mediated communication can overcome barriers common to the social service field such as difficulties with mobility, restrictions on timing, social exclusion, shame or fear in interpersonal encounters, and difficulties with unbalanced status or power in relationships. Timms pointed out in her 2000 study that a key selling point for using the Internet for on-line collaboration projects, besides obvious benefits of accessing information and networking, is the flexibility and anonymity of the medium.

Timms also pointed out that some projects had been imperfect or failures because they lacked personal connection or face-to-face interaction, and she drew attention to the frequently insufficient or inaccurate instructions on how to operate the programs. Inconsistency in participants' hardware, incompatible operating systems, and differences in the way each Internet service provider read and ran the same software program could compound the difficulties, resulting in frequent problems in participants' connectivity with each other on-line. User and programming errors could also cause system "crashes," creating frustration and negative feelings about the project. Collectively, these technical

barriers could foster feelings of alienation, failure, and distance, further discouraging the use of computer-related technology (Hargittai, 2002; Timms, 2000).

Stand-alone computers have typically been used in the social service field for basic operational management, accounting, and word processing (Hanna, 1995). Database applications have been used to collect, store, and organize client, employee, and organizational information. Albeit gradually, technology is being adopted by the social service field as a means of enhancing services and of increasing overall organizational effectiveness and efficiency. Interconnectivity through electronic networking is the next step.

Thomas Hanna examined the climate for electronic networking within the field of child abuse in his 1995 article, "Towards Consensus in Human Services Computer Networking." He chose child abuse as a sub-field most representational of human services because it is interdisciplinary by nature and requires vast accountability for accurate and frequent transference of critical information needing quick processing.

In a 1993 survey, Hanna identified 90% of the child abuse agencies in his random sampling as having computers. Forty percent of the sample population already operated computers with modems capable of telephone-based computer data transferring. However, despite having the capability, none of the sampled child abuse organizations used these modems for any networking or data transference. Most of the organizations sampled were not aware of the on-line child abuse resources or networks built specifically for the field.

Hanna's two-year study focused on the lack of connection between the on-line networks designed to aid the human service fields and the actual human service

population. However, he examined the "pre-Internet culture" networking systems such as

BITNET, FIDOnet, PeaceNet, EcoNet, MCHnet, SpecialNet, and NACHC. These were

data transfer networks primarily developed for passive data sharing between human

service organizations.

However, most of these networks became "interconnected" over the course of the

study through the HumanServe networking initiative, which concentrated on reducing the

technical networking barriers and promoting networking accessibility. The initiative was

successful on a technical level, but mostly irrelevant to the human service community as

a whole, which, in 1993, was still unaware of the existence of these networks (Hanna,

1995).

Conclusions were drawn about the need to increase awareness among social

service providers of the available technology and of how such technology might benefit

the industry. The barriers to social service connectivity were identified as technical,

political, financial, and psychological (Hanna, 1995). These conclusions have continued

to be supported by subsequent research on human services and information technology

(Princeton Survey Research Associates, 2002; Hargittai, 2002; Kirschenbaum &

Kunamneni, 2001; Timms, 2000).

Hanna (1995) indicated that the independent networking systems discussed were

not practical applications, due to their isolation and awkward accessibility. He identified

"simple applications," such as e-mail, electronic file transfer, access to on-line databases,

and access to on-line community bulletin boards as the keys to penetrating the

technologically resistant social service field.

Prior to the creation of the Mosaic browser in late 1992, individuals needed relatively advanced computer skills to use on-line resources. The technology used in the Mosaic browser enabled the development of webpages and point-and-click access to the Internet. This technological innovation made the Internet easier for the general population to use. The first widely used adaptation of Mosaic was in 1994 when Netscape Navigator was introduced to the general public as the simplest way to browse the web.

Dick Schoech reviewed the design, development, and implementation of another IT system used in child protective service agencies for in his 1996 study. Schoech examined Performance Support Systems (PSS), computer-based networks designed to increase standardization of services. Like Hanna, Schoech chose the field of child abuse and protective services to represent the needs of the human service industry as a whole. He saw PSS as the application best suited for the increasing and complex demands for performance standardization and accountability in the social services, a field taxed with employee downsizing while the client base was growing.

Funding sources and revised government policies were beginning to demand that service providers, who had historically responded to tasks from a subjective and intuitive position, increase standardization of practice (Hanna, 1995; Schoech, 1996). Government agencies were pushing for a standardization of service delivery procedures for child protection services in order to promote service consistency and increased provider accountability. At the time of Schoech's research, the field's predominant use of a flexible, contextual, case-by-case decision-making style had been a source of objection to integrating computers into the decision-making process. The objection was based on the argument that human problems were not an exact science, and therefore should not be

analyzed as such (Grasso & Epstein, 1993; Hanna, 1995; Mandell, 1989; Schoech, 1996;).

Another barrier to developing an industry standard has been the varied perceptions of what is considered to be good practice. PSS technology offered choices based on a variety of information sources and a series of potentially good practice options. This broad scope of choices allowed for some flexibility and intuitive decision-making to be maintained, depending on the individual scenario being analyzed (Schoech, 1996).

Intelligent system and decision support system (DSS) packages had been designed to help service providers calculate predictions, conclusions, possible decisions with explanations and rationales, as well as addressing "What if this were the case?" type questions. Examples of DSS programs were the Child Abuse Risk Advisor and the Optimum Allocation of Service Software. However, these applications were significantly limited by the scope of the databases, by the proficiency of the user, and by the foresight of the software designers (Schoech, 1996).

PSS was defined by Schoech as "a computer-based system that improves workplace performance by providing the problem at hand with on-demand access to the integrated information needed to complete a task with minimal support from other people" (Schoech, 1996, p. 6). Like the preceding system designs, PSS was ideal for social service providers, with their time restraints and with large caseloads involving a variety of problems requiring immediate assessment or response.

The PSS design provided a variety of information and referral sources by accessing the Internet and interactive agency databases, linking to existing intelligent and

DSS systems and other specialized software systems available to the agency. The PSS technology could assist workers' access and integrate and maximize available data in order to make quick, informed, independent decisions when it was not feasible to consult a supervisor or professional (Schoech, 1996).

According to Schoech's research, the primary barriers standing in the way of broad implementation of PSS within the child protective field (as well as within human services as a whole) were agency and community disagreement over good practice, inadequate funds, inadequate technical expertise, and conflicts between the needs of funding sources and those of the client. Schoech also acknowledged an organization's resistance to change as a potentially significant barrier against implementation (Schoech, 1996).

In 1998, a team of academics and social work professionals from New York and Ohio proposed an improved service delivery model for public welfare departments, a large component of the human service field. The plan, developed in response to the Welfare Reform Act, proposed to convert the existing, fragmented service delivery structure of the public welfare system into an integrated, multidisciplinary case management modality. Electronic networking systems were incorporated into every aspect of the proposed "Integrated Human Service Delivery System: Public Welfare Model" (Rupp, Dulmus, Wodarski, & Feit, 1998).

The proposed integrated service model used examples of the previously described DSS and PSS designs as tools to aid case managers in rapid needs assessment, client/family data tracking, progress report writing, treatment plan development, and referrals. "The ultimate goal in the proposed integrated social service delivery system

was to produce a completely integrated computer system" (Rupp et al., 1998, p. 155,).

The ability to transfer and access client information through secured electronic

networking between service providers would increase the accuracy of information,

decrease time spent accessing data, and decrease postage, paper, and human resource

costs. It would reduce the likelihood of duplication of information and provide an overall

opportunity for more comprehensive service delivery (Rupp, 1998).

Electronic networking was also being identified by researchers as an extremely

effective tool for providing social service delivery in remote locations. William

O'Connor's 1988 study, "Telecommunications: The Acquisition of Information to Assist

Clients Residing in Remote Locations," addressed the dramatic change in social service

opportunities in Alaska since the implementation of basic information technology and

networking systems. The examples of more cost-effective service through information

technology were reflected dramatically in a state where travel costs for one visit to a

client residing in the Alaskan bush could equal the cost of a top-of-the-line computer

system. The ability to communicate via e-mail immediately saved Alaskan social service

agencies significant time, energy, and human and financial resources by reducing the

need for social workers to travel hundreds of miles to communicate with clients and their

families (O'Connor, 1988).

At the time of O'Connor's research, over 90% of Alaskan NPOs were located in

Anchorage, the largest city in Alaska (population 250,000), home to over half the state's

population. Individuals who required a variety of social services commonly relocated to

Anchorage, leaving behind family and friends. E-mail helped ease the separation for the

individual needing service by allowing for regular communication with support from

home. E-mail also provided the parents, friends, and family with quicker access to progress reports and updates from social service staff. O'Connor identified the greatest barrier to efficient use of electronic networking applications as a user's proficiency and comfort with computers (O'Connor, 1988). This sentiment has been echoed by the more recent literature surrounding the Digital Divide.

Anthony Haag and Franklin Chang (1997) also addressed the impact of electronic networking on social services in rural communities, specifically those organizations providing assistance and support to the rural gay and lesbian community. The authors examined "virtual communities" and on-line support networks created by nonprofit organizations. These on-line networks offered support to geographically isolated and otherwise disenfranchised individuals by providing a forum for open communication. E-mail and on-line resources contributed significantly to the rapid growth of rural gay and lesbian outreach programs.

Kristen Mickelson came to a similar conclusion regarding the benefit of on-line support networks in her 1997 study, "Seeking Social Support: Parents in Electronic Support Groups." The study surveyed 109 parents of severely developmentally disabled children, addressing the perception of benefit from on-line support. The findings indicated that those parents who perceived their child's diagnosis as a social stigma also found on-line networks to be the most beneficial support available. These parents reported receiving more support from on-line friends (whom they may never have met in person) than from their family, casual friends, and neighbors (Mickelson, 1997).

Frances Cairncross addressed universal changes in the social and financial world as a result of electronic networking and information technology in his 1997 book, The

<u>Death of Distance</u>. One of the primary reflections of this change, according to Cairncross, was the reduced cost in long distance communication, especially since the advent of free e-mail accounts and free public access to these accounts from schools, community centers, and libraries. He described individuals living on the other side of the planet as just as easily accessible as one's next-door neighbor. Cairncross' opinion was that low-cost communication would be the single most important force shaping society in the first half of the 21st Century.

Haag and Chang (1997) supported Cairncross' theory in regards to the impact information technology would have on the continuation and development of the nonprofit sector. The authors acknowledged that the gradual implementation of new technology had shaped and would continue to shape the changing practice and delivery of social services. Ultimately these changes would impact the way services were conceptualized. The increased capacity for NPOs to receive, send, store, process, and organize data with electronic networking technology had already raised the expectations of general service provision in the field. Therefore, those NPOs that already had experience with new technology would have a great advantage over those that did not.

Accessibility

When assessing the use of IT systems such as e-mail in small nonprofit organizations, it is important to get a sense of who is using the application. In order to determine the impact of such an application in a specific field it is beneficial to review the impact within the larger community.

According to the research conducted by the on-line marketing journal "eMarketer," published January 22, 2000, 81 million Americans used e-mail at least

occasionally. An estimated 3.4 trillion e-mail messages were delivered in the U.S. during

1998 (equating to 9.4 billion per day). These numbers included commercial e-mail,

otherwise known as "spam." The estimated number of e-mail messages sent per day by

U.S. Internet users, not including spam, was 2.1 billion in 1998.

The growth of Internet and e-mail use continues at an enormous rate. According

to the report released by the National Telecommunications and Information

Administration, between 1994 and 1997 personal computer ownership increased 52%,

modem ownership increased 139%, and e-mail access expanded by 397%

(McConnaughey & Lader, 1999).

Despite the increased accessibility to technology as a whole in the United States, the

gap previously referred to as the Digital Divide is also increasing. McConnaughey and

Lader released the following demographic statistics for 1997 in their 1999 report on the

Digital Divide:

- 50% of households with incomes over $75,000 had on-line access

- 26% of households with $35,000 annual incomes had on-line access

- 2.3% of households earning less than $14,000 had on line access

A comparison of the initial data gathered in 1994 and the data collected through 1997

suggests an increased disparity in on-line access among U.S. residents. In 1994 there was

a 38% greater likelihood that households earning between $50,000 and $74,999 would

have on-line access than households earning $10,000 to $14,999. In 1997, this disparity

increased to 48% (McConnaughey & Lader, 1999).

The report also published demographic data regarding the disparity of on-line

access between ethnic groups within the United States. Across all income categories,

white Americans were three times more likely to have on-line access than Black or Hispanic Americans (McConnaughey & Lader, 1999).

The federal government acknowledged the importance of having access to on-line technology as a means of staying competitive in the changing society and economy. The government demonstrated a commitment to addressing accessibility issues through the Department of Commerce's Digital Divide Initiative: Technology Opportunities Program (TOP). The TOP program distributed $135 million in grants to local governments and nonprofit organizations to increase the implementation of information technology.

The Children's Partnership, a nonprofit organization committed to the needs of U.S. citizens without access to the Internet, completed a study in 1999, which focused on issues concerning the estimated 50 million Americans without access to on-line technology. One of the primary conclusions of their report went beyond the issue of connectivity and addressed the lack of relevant on-line content available to those members of this under-served population. Lack of relevant content lessened the motivation for potential users to seek access (Children's Partnership, 2000).

The information most urgently needed by the population surveyed (urban and rural individuals with annual incomes under $14,000) was in reference to employment in the immediate area and social services available within the local community. The general absence of local information became an additional barrier against using the technology (Children's Partnership, 2000). This absence marked a specific client need, and therefore an opportunity for NPOs to meet this need by providing relevant local information on-line.

The Rand Corporation published a series of studies addressing the concept of universal accessibility to on-line resources in the book, Universal Access to E-mail: Feasibility and Societal Implications (Anderson, Bikson, Law, & Mitchell, 1995). The push toward universal access to e-mail stemmed from the pervasive idea that e-mail represented the new standard in communication on both a social and economic level. The future of e-mail and on-line technology and their impact on society was directly compared to that of the telephone.

Currently 98% of all U.S. households have access to a telephone. Telephones are considered to be a standard utility at home and in the workplace; most individuals in the United States have access to a phone. Considering that e-mail and the Internet can be accessed through phone lines, it was a natural path for the report's authors to see the potential for national, if not universal access to e-mail (Anderson, 1995; McConnaughey & Lader, 1999).

Sally Law and Brent Keltner's (1995) contribution to the Rand Corporation's publication specifically analyzed the benefit of on-line technology for social service and civic organizations. They hypothesized that low-income populations served by social service organizations were potentially the greatest benefactors of IT because they represented those most in need of information and communication provided at virtually no cost. The authors stated that to exclude this historically under-served population would guarantee further economic and educational disparity within the society. Therefore, the benefits of technology would be perpetually skewed in favor of traditionally advantaged groups.

Hargittai's 2002 study on the inequalities among Internet users identified specific challenges faced by IT users based on the users' life experience and exposure to IT systems. Hargittai called for an expansion of research on the Digital Divide to focus on the levels at which the divide existed, broadly defined by either social access or physical access. Social access included one's social support network, culture, encouragement of use, and assistance, one's personal skills and general ability to use the medium, as well as pattern of use. Physical access referred to the actual technical access, connection, quality, location, and level of hardware as well as the freedom to use the technology for desired activities (Hargittai, 2002).

The study provided empirical data to support the recommendation to policy makers that initial and ongoing user training accompany the implementation of IT systems. The importance of providing physical IT access was not minimized by the study, but rather equal importance was given to providing adequate access to training and support (Hargittai, 2002). Hargittai encouraged policy makers and NPOs to address the Digital Divide as a unified problem consisting of the physical and social variables previously mentioned, which were not all independent of each other.

Perceptions

When examining the impact of information technology in the social services, it is critical to review the historical influence of the perception of technology within the field. Included as a component of this perception are the intense financial concerns NPOs attach to the issue of technology.

The relationship between new technology and the nonprofit world is unique. The majority of small nonprofit organizations, especially those in the arena of social service,

have historically hesitated to invest in new technologies. NPOs have tended to wait until the technology became a standard business practice before implementing it. This hesitation and ultimate resistance to implementing new technologies have been perpetuated by the necessary financial commitment as well as an "anti-machine culture" within the field (Grasso & Epstein, 1993).

"Technology" carried the connotation of luxury: a major expense beyond the scope and expertise of the average NPO (Hanna, 1995; Resnick, 1994). Computers, although dropping in price, could still cost several hundred to several thousand dollars. The hardware expense alone could dominate a small NPO's annual budget. NPO managers and staff were generally social workers, counselors, and paraprofessionals by trade and education, not system analysts, IT technicians or computer programmers. Training and technical support were expenses that must be considered when implementing new technology (Hanna, 1995).

Nonprofit organizations, especially those existing on meager budgets, pointed to cost as the primary obstacle preventing the implementation of new technologies. But this excuse was losing its power with the increasing number of grants and programs becoming available that specifically assisted NPOs to access and implement technology. Compumentor, CitySkills.org, and the Community Technology Centers Network were organizations that provided products, training, and technical assistance to NPOs nationwide. NPOs not investigating or using IT may have been less aware of the opportunities that existed. This lack of awareness may have been a greater barrier for NPOs than the actual cost of the technology (Katsioloudes & Weldon, 1998).

Articles describing the trend among funding sources to provide nonprofits with the financial and technical assistance needed to implement computer technology are increasingly frequent in national, on-line and professional journals. Major corporations such as Hewlett Packard, Intel, Apple, Microsoft, Oracle, and Dell donate millions of dollars worth of hardware and software to NPOs and educational institutions each year.

Computer technology historically evokes a threatening image that can prove to be more difficult to deal with than the actual expense (Resnick, 1994; Mandell, 1984). This is the image of "the machine": a cold, dehumanizing, detached, alien technology that is perceived to be antithetical to the purpose of the human services (Hanna, 1995; Grasso & Epstein, 1993; Glastonbury, LaMendola, & Toole, 1988).

Fortunately, even a decade ago this image was less prevalent in the social services as it had been for years. There seems to be a gradual move towards acceptance of technology within the field. The increased incorporation of computer technology in academic environments has insured a larger population of graduating social workers with computer experience. A general increase in exposure to technology at home and through the media has helped decrease the "cold machine" stigma. "It is self evident that administrators in the human service professions are increasingly comfortable and satisfied with the contribution made by computers to their administrative practice" (Resnick, 1994, p. 382). Social service professionals have become more receptive to the idea of computers enhancing their professional lives (Hanna, 1995; Resnick, 1994; Glastonbury, LaMendola, & Toole, ed., 1988).

The method that agencies choose to introduce new technology to the organization has a significant impact on the staff's perception of the technology as well as the success

of the implementation (Resnick, 1994; Grasso & Epstein, 1993). Several studies have

been conducted in regards to the perception of power and control as a result of the

implementation of technology (Schoech, 1996; Gertsman, K., 1996; Grasso & Epstein,

1993; Mandell, S. 1989).

The consensus among the research suggests that the success of technological

implementation directly correlates with the amount of user involvement in the process.

The organizations that chose to involve staff during the decision-making and design

process who would ultimately use the technology had greater success at implementing

new systems. In 1993, Grasso and Epstein concluded that successful implementation of

technology was significantly influenced by how open an organization was to change in

general.

Computerization has forced the social service field to confront their perceptions

of technology. Social service providers are gradually recognizing the benefits of using

computers for increasing productivity, solving problems and expanding networks (Hanna,

1995). Nonprofits are forced to create ways around the financial barriers and overcome

the resistance and negative attitudes towards technology in order to survive in today's

competitive market (Katsioloudes & Weldon, 1998).

<p align="center">Philanthropic Trends</p>

Access to IT has become closely connected to trends in philanthropy. One

common trend in nonprofit philanthropy has been the development of on-line fundraising.

This trend spans from for-profit companies coordinating the solicitation of funds for

multiple charities through one website to individual NPO webpages with the ability to

process donations and corporate partnerships combining commerce with social causes.

An example of successful on-line fundraising is Bill Bradley's Presidential Campaign

website, which raised $30,000 in the first 3 months of 1999, as cited by the Internet Index

in May 1999.

Cause-Related Marketing (CRM) has been recognized as a popular method for

corporate philanthropy, especially in the high-tech industry (Carter, 1999). CRM is a

consumer-driven strategy involving a mutually beneficial partnership between a private

sector business and a charitable organization. The charity lends its name to endorse its

corporate partner or a particular product line of the corporation and in return the

corporation publicizes the charitable association, helps to raise funds by donating a

portion of its proceeds, and sponsors a website or event to promote the organization's

mission (Carter, 1999).

Market research has revealed that 86% of consumers surveyed stated they would

be more inclined to purchase products associated with a charity or cause (Carter, 1999;

Blake, 1997). Consumer confidence was nurtured when there was a perception that a

company was making a genuine effort to contribute to the world or the local community.

The majority (81%) of the corporate marketing directors surveyed agreed that companies

benefited from associating themselves in a positive way with social issues relevant to

their market (Carter, 1999). Several Internet Service providers have initiated programs

offering low, negotiated prices for Internet and e-mail services for NPOs (Katsioloudes &

Weldon, 1998). However, CRM has also been referred to as philanthropic "product

placement," a way for corporations to exploit free advertising and positive public

relations from gestures not necessarily representing a genuine philanthropic commitment

(Blake, 1997).

Other philanthropic efforts that have been criticized as being for corporate benefit are those of Microsoft Corporation's Chairman of the Board, Bill Gates. His initiative to connect the libraries of America to the Internet has been heavily scrutinized. Gates' massive donation of computers featuring Microsoft software and operating systems to libraries across the country has been perceived more as an effort to solidify his monopoly within the nation's infrastructure than as true altruism (Hafner, 1999).

Conclusion

Prior to 2001 the prevailing IT-related literature concerning NPOs focused primarily on the needs of large government agencies or educational institutions. The vast majority of articles and research reviewed on the topics of the Internet and e-mail within the nonprofit sector addressed issues of fundraising and technology. The challenges faced by small, community-based social service organizations were not being addressed until organizations began to focus attention on the Digital Divide.

There is still very little available literature specifically geared towards the needs of small social services NPOs, despite the fact that they account for more than forty percent of the social service industry in the United States. The paucity of specific literature regarding the impact of e-mail and the Internet on small NPOs made it necessary to consider any research that addressed the impact of IT on the social services or the general nonprofit community.

CHAPTER THREE: METHODOLOGY

Subject/Respondents

The subjects for this study were Bay Area, nonprofit social service organizations that reported annual incomes to the IRS under $500,000. A sample subject population of 400 nonprofits meeting the subject criteria was randomly selected from a list generated through the California Nonprofit Database Project. The unit of analysis for this study was nonprofit social service organizations selected from this list as represented by survey respondents.

The survey targeted senior executives or equivalent staff from the selected nonprofit organizations. It was intended to attract respondents involved in the decision-making process in regards to technology operations, who would therefore have knowledge of their NPOs' current IT systems.

The subjects were geographically restricted to the consolidated metropolitan area of northern California, specifically the Bay Area. The Bay Area was defined to include six counties: Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, and Solano counties. The Silicon Valley, an area considered to be the epicenter for the computer industry, is located within the Bay Area and for the purpose of this study, was limited to and defined by Santa Clara County.

An annual income under $500,000 as the qualifying subject criteria was selected as the parameter to identify and define "small organizations" within the Bay Area. "Small" therefore refers to the size of the NPO's annual budget as opposed to the number of staff or number of individuals served. The monetary amount of $500,000 was selected based on the relevant cost of living in the subjects' geographic location.

Research Design

This study used a descriptive research design. A cross-sectional survey method was distributed to gather data and included a questionnaire mailed to the entire sample population.

Instrumentation

The instrument used to collect data was a self-administered questionnaire (see Appendix A). The questionnaire was designed for respondents to complete quickly and with ease. The questionnaire was pilot tested by eight supervisory/management level personnel from two different social service organizations to assure that the questions were coherent and could be completed in approximately ten minutes. Several of the survey questions were previously used in a similar study examining a broader sample population (Princeton Survey Research Associates, 2001).

Procedure

A list of nonprofit social service organizations with California county zip codes for Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo and Solano, with annual budgets under $500,000, was purchased from the California Nonprofit Database Project. The California Nonprofit Database Project compiles data reported to the IRS, compiled by the Registry of Charitable Trusts of the California Attorney General's Office.

The original list included the names and addresses of 600 NPOs coded by the Registry of Charitable Trusts to meet the study criteria, consisting of 100 NPOs from each county included in the consolidated metropolitan Bay Area. The names and addresses of 400 organizations were randomly selected from this list. Prior to randomly selecting the sample population, the list was edited for cases that appeared, by virtue of name, not to be

social service organizations, such as homeowners' associations and recreational sports groups.

A survey package was sent to each selected sample organization by standard mail on August 6, 2002. The package was addressed to a contact name when available, or to the position of Executive Director when a contact name was not available. Along with a copy of the questionnaire and a postage-paid, pre-addressed return envelope, each survey package included a copy of the cover letter explaining the purpose of the study, the confidentiality of responses, and instructions on how to receive a copy of study results (Appendix A). Data were collected from returned surveys for eight weeks after the original mailing, terminating on September 30, 2002.

To track the surveys the questionnaires were numbered from 1 to 400, corresponding with the sample population address list. A second copy of the questionnaire was not sent out 10 days after the original mailing, as originally proposed, due to excessive mailing cost.

Survey results were made available to respondents by request. Respondents were instructed to include a return address on the pre-stamped return envelope provided in the survey packet to indicate their interest in receiving survey results.

A possible ethical issue posed by this research instrument was the potential for inspiring feelings of negativity in the respondents towards their organizations. By virtue of asking questions pertaining to the availability of tools and equipment provided or not provided by an organization, respondents were asked to assess whether or not their NPOs adequately equipped their staff. However, a possible benefit from such an assessment was the identification of unattended needs or vulnerabilities of the organization or the re-

affirmation of the organization's efforts to provide appropriate tools. In either case, there was a possibility for change in the organization as a result of the respondent's participation in this research project.

In order to decrease the probability of the negative outcome mentioned above the following statement was incorporated into the cover letter:

> Thank you for your time and effort in this research project. As a professional in the nonprofit sector, you are probably well aware that resources can be tight. As a result, the researcher understands that organizations must continually make difficult choices regarding the best allocation of funds. Your organization, in all likelihood, has weighed appropriate relevant factors to make the best decisions possible for the organization. This researcher thanks you and your organization for your contribution to the social service field and to this project.

Operational Definitions

Whether or not the sample population used e-mail was investigated in survey question eighteen. Survey question 10 asked if the Internet was used for work related activities. These two questions created four subgroups within the sample population based on respondent answers. Question number 18 identified the main subgroups. Respondents who answered, "Yes," their NPO used e-mail as a standard communication tool, were identified as the "Plugged In" group for purposes of the questionnaire. The group received further instructions to answer, questions 19 through 28. Respondents who answered, "No" to question 18 (i.e., they did not use e-mail) were identified as the "Acoustic" group for the purposes of the questionnaire and were instructed to complete survey questions 29

through 36. These group names were selected with intent to avoid negative group label associations such as "haves" and the "have-nots".

Question number 10 identified respondents who had access to the Internet through their NPO. How this subgroup used the Internet was addressed by questions 10-A, 10-B, and 13. How the "Plugged-In" group used e-mail was addressed in questions 20-A, 20- B, and 20-C.

Possible reasons for an organization not to use e-mail were investigated in questions 30 through 33. Possible reasons an organization that used e-mail may not regularly have updated their IT systems were examined in questions 24 through 27. Question number 16 identified whether respondents were aware of resources designated to assist NPOs with technology.

The possibility of a relationship between the use of information technology (IT) and an organization's demographics was investigated in survey questions 1, 2, 3, 4, and 19 in relation to the previously discussed subgroups created by questions 18 and 10. Demographics referred to the number of paid staff, volunteers, and years of operation. The scope of the organizations in each case was identified by classifying the respondents as "Local," "Statewide," "National," "Regional," or "International."

The potential for a relationship to exist between the use of IT and the NPOs' proximity to the Silicon Valley was investigated in questions 5, 6, 8, 9, and 13.

The possibility for relationships existing between the use and the perceived value of IT systems was determined through analysis of the data collected from questions 12, 17, 22, 23, 28, 34, 35, and 36. Value would be demonstrated by the level of attention paid to IT in the budget, dedicated staff, level of concern regarding advances in technology,

and the level of importance to daily operations. Perception of technology was also identified by the selection of judgmental answers such as "necessary evil" or "saving grace" used in question number 17. Other terms that helped determine perceived value related to the impact of the systems on production such as "time-saving," "production-enhancing," and "beneficial."

Treatment of Data

The Mini Tab statistical software package was used to analyze the data collected from the questionnaire. When possible data are described by the use of raw scores and percentages. Data are presented using pie charts and simple bar graphs when reasonable.

The data collected were analyzed using sub-group comparisons and inferential statistics. The chi-square test for statistical significance was used to determine the existence of relationships between selected variables.

To investigate whether small, Bay Area, nonprofit social service organizations used e-mail the sample population was divided into two main subgroups. The "Wired" group used e-mail and the "No E-mail group" did not use e-mail, as indicated by the answers to question 18. The responses to question 10 determined the subgroup within the sample population that had access to the Internet. This is the "Internet" group.

Cross-tabs were used to analyze who within the "Wired" group used IT. Cross-tabs were also used to demonstrate how the sample population used e-mail and the Internet.

Limitations of the Study

This study was limited by the integrity of the California Database Project data that formed the basis of the random sample. The sample population was initially selected on the basis of the self-reported data to the Internal Revenue Service (IRS). The age and

accuracy of the data were also compromised by the time and error involved in the transfer of information from the IRS to the Registry of Charitable Trust to the database.

One hundred and fifty-seven survey packets were returned to sender marked as undeliverable by the postal office. Some organizations were no longer in existence and several had expired addresses. The original sample population of 400 organizations was reduced to a possible 243. The study was then limited by the self-selection of the respondents. Although the survey targeted senior and executive staff, there was no control for who actually completed the survey.

The geographic restrictions limited the study to only six specific counties within the Bay Area. Considering the high cost of living in the Bay Area, the financial criteria for the respondent organizations limited any potential comparisons to social service organizations across the country with similar annual budgets. Such a comparison would require adjustments to compensate for differences in cost of living between the areas.

Proximity to the technological resources of the Silicon Valley may have also limited the study in that this population may have been uniquely reflective of the Bay Area, as opposed to the national, nonprofit population. In Silicon Valley there were hundreds of corporate charity efforts, including grant opportunities, focused on the donation of computer hardware. Several of these corporate opportunities were restricted to organizations that provided service to members of the "local community" (Hewlett Packard, Apple, and Intel were three corporations with such grant program restrictions). Therefore, a greater opportunity may have existed for NPOs serving the "local community" of California's Silicon Valley to receive technical support than, for example, similar NPOs located in rural Ohio where no IT corporation was present.

Proximity to the Silicon Valley may also have impacted the overall awareness of technology. NPOs operating within communities where an abundance of high-tech companies existed were regularly exposed to trends and changes in the high tech field. Such issues were covered in area newspapers and television programs as part of local news. Therefore, NPO executives in the Bay Area may have had an increased awareness of technology by virtue of the local culture.

Changes in the Bay Area economy between 1999, when the IRS data used for this study were collected in1999, and when the population was surveyed in 2002, appeared to have a significant impact on the study in regards to the number of potential respondents. The Bay Area experienced an economic boom in the late 1990s, which created an increase in real-estate prices and pushed rents to a premium.

Nonprofit organizations, along with others in the Bay Area, experienced an epidemic number of evictions and forced re-locations due to rising rent costs. Local news reports and articles repeatedly discussed closings of both nonprofit and for-profit organizations as a result of the high cost of living and conducting business in the Bay Area.

Although no articles are cited in this research to substantiate the influence of the local economy on study participants, the number of returned surveys due to bad addresses and the number of defunct organizations suggested that the economy had a possible effect on the study in the form of NPO re-locations.

CHAPTER FOUR: ANALYSIS OF DATA

Survey packets were mailed to the random sample of 400 nonprofit organizations with annual budgets under $500,000 from six Bay Area counties on August 6, 2002. Eight weeks after mailing the surveys, 103 packets had been returned by the post office due to "bad addresses." In addition, sixty-five survey packets were returned because the organizations were defunct, as indicated by several letters received from former employees and, in some cases, from attorneys reporting the closure of an organization. The high number of returned packets as a result of bad addresses in addition to an increase in postal rates made a second survey mailing cost prohibitive.

Sixty-one percent of the initial selection was included in the sample. Seventy-two of the possible 243 organizations completed and returned the survey. There was a 30% response rate during the eight-week data collection period.

Population Demographics

All participating nonprofit organizations were operating within the Bay Area at the time of the study. The study did not consider the number of participant organizations with sites outside of the Bay Area, as it was not pertinent to the research questions. A few respondents indicated on questionnaires that their NPOs operated entirely with volunteer staff, and therefore business was often conducted from private homes and mobile sites, rather than from any one specific location.

Fifty-two respondents, or 73% of the sample, categorized their organizations as local NPOs. Six of the organizations, 8% of the sample, described their NPOs as international, 8% considered themselves national in scope, 6% regional, and 4% statewide.

Out of the 72 respondents, 32% reported having sites or operations in more than one county within the Bay Area. Figure 1 illustrates the number of respondent sites that were reported in six Bay Area counties.

County	%	# of Sites
San Mateo	17%	21
Santa Clara	18%	22
San Francisco	16%	19
Alameda	19%	23
Contra Costa	19%	23
Solano	11%	15
Total	100%	123

Figure 1: Summary of Respondent Site Locations

The response to the survey question regarding what county the participating NPOs called home varied from the number of surveys returned from each county based on the mailing addresses provided by the California Database Project. Figure 2 illustrates the percent of completed surveys returned by respondents per county. (See Appendix B, graph A.)

County	% of Returns	# of Returns
San Mateo	18%	13
Santa Clara	21%	15
San Francisco	7%	5
Alameda	14%	10
Contra Costa	26%	19
Solano	14%	10
Total	100%	72

Figure 2: Summary of Returned Surveys by County Mailing Address

As presented in Figure 2, the majority of respondent organizations had Contra Costa County mailing addresses. 21% of the NPOs had mailing addresses in Santa Clara County and 18% in San Mateo County. Approximately 14% of survey respondents were

from the Alameda mailing list and 14% were from the Solano County mailing list. Unfortunately, only 7% of the returned surveys came from the San Francisco County mailing list.

Approximately 52% of the surveys mailed to San Francisco NPOs were returned to sender because of bad mailing addresses or because an organization was defunct. San Francisco was notorious for having more NPOs per square inch than any other county in California, therefore a low participation rate from San Francisco County suggested that the respondents population may not have adequately represented the Bay Area nonprofit community.

The initial California Database Project frequency report for this study indicated that 24% of the 6,349 qualified NPOs in the Bay Area had San Francisco mailing addresses. Twenty-eight percent had addresses in Alameda County, 19% in Santa Clara, 13% in Contra Costa, and only 10% in San Mateo County. The smallest percentage (6%) of qualified NPOs had mailing addresses in Solano County.

<u>Staff Size</u>

This study did not differentiate between full time and part-time staff.

<u>Volunteer Staff</u>

- 40% of the sample population had no paid staff and depended entirely on volunteers for the daily operations of the NPO;

- 43% percent reported depending on one to ten volunteers for daily operations.

- 11% depended on eleven to twenty volunteers;

- 13% of the survey sample depended on twenty-one to fifty volunteers;

- 18% of the respondent organizations depended on more than fifty volunteers.

<u>Paid Staff</u>

- 15% of the NPOs participating in the study reported that they did not depend on any volunteers for the organizations daily operations;

- 25% of the sample had between one and ten paid employees;

- 7% of the sample population had between eleven and twenty paid employees;

- 19% of the sample had between twenty-one and fifty paid employees;

- 8% of the sample depended on more than fifty paid staff members for normal operations.

<u>Years of Operation</u>

All respondent organizations reported to be in operation longer than three years.

- 49% reported operating for more than 20 years;

- 24% had been operating between eleven and fifteen years;

- 11% had been operating between seven and eleven years;

- 10% were organizations that had been in operation between three and six years.

Access: Research Question #1

According to the survey results, the majority of small Bay Area social service NPOs used e-mail and the Internet. Seventy-one percent of the sample population reported using e-mail as a standard communication tool in their organization. These 51 respondent organizations comprised the "Wired" subgroup. The remaining 29%, or 21 respondent NPOs, formed the "No E-mail" subgroup. (See Appendix B: Graph B.)

Fifty-seven percent of the "Wired" group reported that staff who needed computers had access to computers at their workstations. Only 33% of the "No E-mail" group reported that staff who needed computers had access to computers at their

workstations. Some respondents (10%) reported using their own personal computers for work-related activities. Thirty-four percent of the "No E-mail" group selected either "don't know" or "not applicable" regarding access to computers. The chi-square test for statistical significance determined that no statistically significant relationship existed between access to computers at work and the use of e-mail within the sample population.

Results were similar in both groups regarding whether or not staff had access to computers that were adequate to perform work efficiently. There was no statistical correlation between use of e-mail or Internet and adequacy of existing computers.

- 55% of the sample population had adequate computers to efficiently perform work;

- 21% did not have adequate computers to efficiently perform work;

- 18% reported that some computers were adequate but some were not;

- 6% did not know whether computers were adequate or not.

(Appendix B: Graph C illustrates the difference in accessibility to adequate computers between the "Wired" and "No E-mail groups.")

Seven respondents included hand-written responses on their questionnaires reporting that they used either e-mail or the Internet. However, in the case of these respondents, the computer hardware, e-mail and Internet service were not provided by the NPO. These respondents indicated they were volunteers and used their own computer resources for NPO operations. The multiple-choice questionnaire did not provide respondents with an option for alternative access to IT systems. The decision made by seven independent respondents to include this information on their surveys suggests the

possibility that other respondents may have had similar circumstances but chose not to elaborate.

Fifty-nine respondent organizations, equating 84% of the sample population, reported having Internet access. Out of this "Internet" group there was further identification of who within the organization used the Internet for work related activities.

- 46% indicated that ALL staff used the Internet;

- 69% of volunteer staff used the Internet;

- 4% of line staff used the Internet;

- 9% reported that their clients used the Internet;

- 19% of supervisory staff;

- 22% of executive staff;

- 33% of administrative staff;

- 11% of fundraising staff.

Use of technology: Research Question #2:

Researching information relevant to serving clients was the most common use of the Internet by this subgroup with 72% use. Promoting the organization and its mission was the second most popular function with 69% using the Internet for promotion. Fifty-percent of the "Internet" group used Internet technology for fundraising-related activities. Recruiting staff and clients through the Internet was also common within the subgroup. (See Appendix B: Graph D)

Fifty-eight percent of the organizations that used e-mail had been using it for three to five years. Eighteen percent of the "Wired" NPOs implemented the use of e-mail

within the previous two years, 20% had been using e-mail in their organization for more than six years, and only 4% had been using e-mail longer than 8 years.

The "Wired" group reported using e-mail for internal communication just as often as for external communication. E-mail was used by 46% of the "Wired" group "a great deal" for internal communication and 56% used e-mail "a great deal" for external communication. However, external communication did not usually include clients, as 43% of the group reported never using e-mail for communication with past, current, or potential clients. Approximately 15% of the respondents in the "Wired" group reported not using e-mail very often for either internal or external communication.

The "Wired" group was divided on how critical e-mail was to an NPO. Approximately 36% of the "Wired" group believed e-mail to be critical or essential to their operations, 30% of the group believed e-mail was important but not essential to their work, and 8% did not believe e-mail was important at all.

Relationships between use and demographics: Research Question # 4

The chi-square test for significance was used to determine if a statistically significant relationship existed between access to IT systems such as e-mail or the Internet and the demographics of the sample population. According to this analysis the relationship between the number of staff and whether or not they had access to e-mail or the Internet was not statistically significant. However, there was a statistically significant relationship between whether staff were paid or not paid and an organization's access to e-mail as well as access to the Internet (Figures 3 & 4). Further analysis of the survey data indicated that no statistically significant relationship existed between access to e-

mail or the Internet and years in operation or scope of the organization (i.e., local,

national, international, etc.).

All results based on a .05 level of significance			
	Wired	No E-mail	Total
Non Paid Staff	15	14	29
%	52%	48%	100%
Paid Staff	36	7	43
%	84%	16%	100%
Total	51	21	72

N= 72
Chi Square= 8.583
P-value= .003

Figure 3: E-mail Access and Paid Staff

	Internet	No Internet	Total
Non Paid Staff	19	10	29
%	66%	34%	100%
Paid Staff	47	5	52
%	90%	10%	100%
Total	66	15	81
% of Total	81%	19%	100%

N= 81
Chi Square= 7.630
P-value= .006

Figure 4: Internet Access and Paid Staff

Proximity to Silicon Valley: Research Question #5

The chi-square test for significance determined that a relationship existed between

NPOs in the sample population and their proximity to Santa Clara County, the center of

California's Silicon Valley. One could predict that respondents located in Santa Clara

County were more likely to use e-mail than NPOs in other Bay Area counties (Figure 5).

Only one NPO based in Santa Clara did not use e-mail.

	Wired	No E-mail	Total
Santa Clara	21	1	22
%	95%	5%	100%
Not Santa Clara	74	27	101
%	73%	27%	100%
Total	95	28	123
% of Total Sample	77%	23%	100%

N= 123
Chi Square= 5.058
P-value= .025

Figure 5: Proximity to the Silicon Valley

A statistically significant relationship was also identified between e-mail use and

awareness of programs or resources dedicated to helping NPOs use and access

technology. The "No E-mail" group was less likely than the "Wired" group to be aware

of such resources (Figure 6).

	Aware of IT Resources	Not Aware of IT Resources	Total
No E-mail	2	17	19
	11%	89%	100%
Wired	21	30	51
	41%	59%	100%
Total	23	47	70

N= 70
Chi Square= 5.895
P-value= .015

Figure 6: E-mail Access and Awareness of Available IT Resources for NPOs

Perceptions: Research Questions #6 & #7

The perception among the sample population in regards to the impact e-mail had

had on the social service field was not statistically related to whether or not the

respondent organization used e-mail. The majority of respondents agreed that e-mail had

had at least some impact on the social service field whether or not their NPO used the technology. "Don't know" was selected 33% of the time by members of the "No E-mail" group and only 10% of the time by those of the "Wired" group.

A chi-square test identified a statistically significant relationship between the use of e-mail and the perception of how useful the Internet was for the social service field. The "Wired" group was more likely to perceive the Internet to be somewhat or very useful than respondents from the "No E-mail" group (Figure 7).

	Wired	No E-mail	Total
Useful	45	9	54
%	83%	17%	100%
Not too useful	4	5	9
%	44%	56%	100%
Total	49	14	63

N= 63
Chi Square= 6.75
P-value= .009

Figure 7: Perception of How Useful the Internet is for an NPO.

The following reflects the total population's response to how useful the Internet was or would be as a tool to help carry out programs:

- 50% perceived the Internet to be "very useful";

- 25% perceived the Internet to be "somewhat useful";

- 9% perceived the Internet to be "not very useful";

- 5% perceived the Internet to be "not useful at all";

- 6% stated they did not know how useful the Internet would be in this regard.

Survey question number 17 addressed research question 7 as well by asking respondents to categorize the current role of information technology as one of the following: "necessary evil," "saving grace," "strategic advantage," "natural evolution," or "other." There were too few responses in each category to confidently determine if a statistically significant relationship existed between use of IT and any category; however 45% of the "Wired" group classified e-mail as a "strategic advantage" and the majority of "No E-mails" chose to describe e-mail as a "natural evolution." (See Appendix B: Graph E.)

Although no statistically significant relationship was determined between the groups by chi-square analysis, 84% of "Wired" respondents believed websites were "somewhat beneficial" to "very beneficial" to have in the social service industry, compared to only 48% of "No E-mails" who believed the same. Thirty-eight percent of "No E-mail" and 16% of the "Wired" subgroup reported that a website was "not very" to "not beneficial" for the social service industry.

Keeping Up with IT

"We are doing a good job keeping up with the advances in information technology compared to others in our industry," was the statement selected by 36% of the sample population to best describe their organization. Nine organizations, representing 13% of the sample, reported they were doing an excellent job of keeping up with IT. Six percent stated they did not know and 17% of respondents felt the question was not applicable.

The statement, "We are struggling to keep up with the advances in information technology compared to others in our industry," was selected by 29% of the respondents.

There was no statistically significant relationship between these self-descriptive selections and respondent organizations' use of e-mail.

A statistically significant relationship existed between each of the "Wired" and "No E-mail" groups and their respective levels of reported concern for the ability to "keep up" with advances in technology. The "Wired" group was more likely to be concerned about their NPOs ability to "keep-up" with technology than the "No E-mails" (Figure 8).

Out of the sample population, 36% of the respondents reported their organizations did not have a website. Approximately 60% of NPOs within the "No E-mail" group and 25% of the "Wired" organizations did not have a website.

	Wired	No E-mail	Total
Concerned	34	6	40
%	85%	15%	100%
Not Too Concerned	12	9	21
%	57%	43%	100%
Not Concerned	5	5	10
%	50%	50%	100%
Total	51	20	71
% of total sample	72%	28%	100%

N= 71
Chi Square= 8.023
P-value= .018

Figure 8: Level of Concern for Keeping Up with Advances in Technology.

Among the 42 respondents that had websites, 30% stated their websites were in need of at least some improvement in order to suit the needs of the organization. Ten percent claimed that their sites merely "serve their purpose" and yet another 13 respondents, making up 19% of the sample with websites, reported that relevant to their

needs, their sites were good to great. Only one respondent NPO categorized their website as "state-of-the art."

Investment

There was a statistically significant relationship identified between the use of e-mail and the inclusion of information technology in the annual budget. The "Wired" group was more likely to designate funds for IT-related issues in their annual budgets than the "No E-mail" group (Figure 9). However, there was no statistically significant relationship between having staff designated to address IT issues within the sample population and the use of e-mail.

	Wired	No E-mail	Total
Budget for IT	21	1	22
%	45%	6%	35%
No budget	26	15	41
%	55%	94%	65%
Total	47	16	63
	100%	100%	100%

N= 63
Chi Square= 7.757
P-value= .005

Figure 9: Inclusion of IT Funds in the Annual Budget.

Barriers to Access: Research Question #3

Respondents within the "Wired" and "No E-mail" groups shared reasons for not using or upgrading IT systems but few reasons were shared between the two groups. Out of the 50% of the "Wired" group that did not upgrade IT systems as needed, 68% reported that cost prohibitions stopped their organization from upgrading, and 83% stated that upkeep and the trained staff needed to operate the systems were reasons they did not upgrade. Surprisingly, only 10% of "No E-mails" claimed cost was a reason their

organization did not use e-mail and 16% identified upkeep and trained staff needed were reasons they did not have e-mail access.

Analysis of the data collected from completed surveys supported the hypothesis that NPOs with access to e-mail and the Internet were more likely to value information technology and therefore, were more willing to invest resources in IT. The opposite was also supported by respondent data: NPOs not using e-mail or the Internet did not value information technology enough to invest resources so that they might gain access to the technology and become "wired."

CHAPTER FIVE: SUMMARY AND CONCLUSIONS

Review of the Problem

The private and public sectors have incorporated information technology in almost every component of modern-day business operations. E-mail has been identified as representing the new standard in communication on both a social and economic level (Bikson 1995; Mitchell, 1995). The Internet and e-mail are a reality, not the wave of the future, and it is time for nonprofit organizations to catch up or be left behind.

Traditionally NPOs have been able to avoid investing in technology. Computer technology had rarely been part of the social service culture, and therefore social service staff had had limited exposure to it (Hanna, 1995). As illustrated by the concept of the Digital Divide, limited exposure to technology can perpetuate a low level of interest or awareness of relevant technological applications. Overall, the less exposure one has to technology, the less confident one may feel in using it, and the less relevant one may feel it is to one's needs (Hargittai, 2002).

The efficiency and cost effectiveness of information technology (IT) applications like e-mail and the Internet have made avoiding technology no longer feasible if an organization intends to be competitive, even in the social service industry. Both public and private funding sources are increasingly expecting NPOs to use IT to expedite processes like grant applications, data collection, report distribution, and general communication.

Findings

This study confirmed that there were still Bay Area NPOs not using e-mail. The majority of social service NPOs in the study used e-mail as a standard communication tool. However, close to 30% of the sample population was not using e-mail at the time of the study.

Data from this study identified a statistically significant relationship supporting the hypothesis that organizations currently using e-mail were more likely to be concerned about keeping up with technology than organizations not using e-mail. NPOs that used e-mail were also more likely to be aware of resources available to assist NPOs in expanding use and access to technology.

This research also supports the hypothesis that small nonprofit social service organizations were more likely to use e-mail if they were located in Santa Clara County, otherwise known as the Silicon Valley, than if located in other parts of the Bay Area. No relationships were identified between e-mail use and other demographic variables such as scope of operation, staff size, or years in operation. NPOs with paid staff were statistically more likely to use e-mail and the Internet than NPOs dependent on volunteer staff.

Supervisory staff, direct line staff and clients were the least likely to use the Internet for service-related activities. The Internet was primarily used for research, fundraising, and organizational promotion. The Internet was perceived by 14% of the sample not be very useful in carrying out programs or promoting the organization's mission.

Data analysis determined that a statistically significant relationship existed between a respondent's perception of technology and use of technology by the

NPOs in the sample. "Wired" respondents are more likely than "No E-mail" respondents to perceive IT as useful for the social service field. Forty-five percent of the "Wired" group described e-mail as a "strategic advantage" compared to only 10% of the "No E-mail group."

One of the strongest statistically significant relationships determined in this study was between the use of e-mail and having funds specifically marked for information technology in the annual budget. Ultimately, the value of developments in American culture is determined by the willingness to invest resources in it, as articulated by the classic saying, "put your money where your mouth is." Organizations that value information technology include it in their annual budget planning.

Conclusions

Small, Bay Area, nonprofit social service organizations currently using e-mail are more likely to value IT enough to invest resources in IT related issues. Most small organizations in the region that are not using e-mail as a standard communication tool will require additional incentive or support before committing any resources for technology.

The percentage of the sample not using e-mail was high, considering the proximity of all participating NPOs to the Silicon Valley. One might suspect that if almost 30% of small social service NPOs in California's Bay Area did not use e-mail, then the percentage of small NPOs not using e-mail would be even greater in regions less known for technological resources, such as rural Mississippi or Arkansas.

The study identified a need in the Bay Area for more adequate computers

and staff training, and greater awareness of those organizations and resources

available to help NPOs access technology. The study identified that only 31% of

respondents incorporated IT in their annual budgets, which suggests an additional

need for organizations to receive training on financial and strategic planning for

the future.

Lessons Learned

Volunteers were widely used by the sample population for daily operations.

Several respondents indicated a reliance on volunteers' using their own IT

resources in order to provide services. The survey tool did not address the issue of

in-kind IT resources. Future or follow up studies should incorporate the potential

for in-kind services.

The percent of respondents per county did not reflect the ratio of actual

NPOs in each county, particularly in regards to San Francisco. The low number of

respondents compared to the high volume of returned packets due to bad addresses

from San Francisco County indicated a potentially skewed representation of the

actual Bay Area nonprofit population.

Investigating the impact of information technology among small social

service NPOs on a larger scale would be beneficial to determine if these initial

findings are representational of the larger population. Unfortunately, data analysis

for this study was not robust in some cases due to the small number of responses.

The study used the California Database Project at the University of San

Francisco's Institute for Nonprofit Organization Management. A sampling frame

was drawn from the Registry of Charitable trust, compiled by the State Attorney

General's Office to generate a population sampling of NPOs that met the study criteria. The California Database Project is currently the only relevant database that lists very small nonprofit organizations in California, however it has limitations due to a significant amount of out-dated and incorrect data.

The data are compiled from tax return form 990 and annual registration filings. The data errors include not only out-dated information and basic data entry errors but also the original misclassification of nonprofit organizations by the Registry of Charitable Trust (RCT). Although the request submitted to the California Database Project was for a list of social service NPOs, indicated by the selection of RCT codes that reflect direct-care social service categories, the original list of 600 NPOs included over 100 that were not social service organizations at all. There was an environmental organization and many neighborhood associations and private trusts with no relation to the social services. The data provided through the California Database Program are still the best nonprofit data available; however if the present study were repeated, a larger population sample would be requested and additional filtering and "cleaning" of the list would help to improve the reliability of the population sampling.

Dependent upon securing adequate funding, the next step for this research study would be to conduct the study in different regions within California, including a repeat of the study in the Bay Area using a more reliable sampling. The existence of the California Database Project, the large population, and the regional diversity of California make it a great state for a comparative study of NPOs. This next phase would examine any potential statewide trends or statistically significant

regional relationships regarding the use and access to IT by the larger Californian NPO population.

A national study would further Organizational Divide research by determining if there are any statistically significant differences between NPO access and use of technology and location within the United States. Many of the articles reviewed spoke of the Digital Divide and the community it effects in general terms, defined primarily by socio-economic factors, race, and gender, with little attention to geography beyond urban or rural status.

<center>Recommendations</center>

As with the Digital Divide, the "have-nots" of the Organizational Divide are in need of direct exposure to the relevant uses, benefits, and efficiency of technology. The NPOs that make up the Organizational Divide may not be aware that they are missing out on cost-effective business solutions. Technology needs to be introduced and adopted into the culture of the organizations so it can be implemented as an effective tool, rather than perceived as a threat or a "necessary evil," as indicated in the study. If the leadership of an NPO perceives technology as useful, then they will want to use it. There are several steps involved before an organization will begin to adopt a foreign entity, such as information technology, into the organizational culture. There are some steps that would help introduce a small social service NPO to the benefits of technology.

- There needs to be a personal engagement of NPO staff regarding the increasing demand for technology to be implemented in the social service field by funding sources, licensing agents, and consumers. Physically

demonstrate how e-mail, a website, the Internet, or even a database is relevant and beneficial to the organization.

- NPOs should experience an IT-needs assessment to specifically identify how the NPO would benefit from the incorporation of IT. (This could involve a range of IT-related functions from the generation and organization of outcome data to enhanced communication tools.)

- A thorough assessment of the financial and planning needs for the short term and long-term future of the organization could include a comparison of similar organizations in the area or successful organizations in the field.

- The NPO could identify applicable IT resources that it might access for assistance or technical support in the planning, purchasing, or implementation of an IT system.

- Education and training could be provided for NPO leaders on the integration of applications, pooling resources, collaborative networks, as well as assistance to these leaders in realizing that the integration of technology into the social services is feasible, practical, and necessary to remain competitive. Technology can strengthen their abilities by increasing efficiency, maximizing existing resources, and improving the effectiveness of their operations.

Technology needs to be brought to the NPO community in order to increase awareness of its relevance to current work and to the longevity of an organization, as it is not typical in the social service culture to aggressively seek out or investigate information technology. There are several sophisticated software applications that are very simple for staff and clients to use, and some even require

no reading or keyboard skills to operate. An example is the ASI-MV, produced by the Inflexxion (www.asimv.com). This is a multi-media version of the Addiction Severity Index-lite form (ASI), a standardized patient assessment tool commonly used nationwide in the field of substance-abuse treatment to help collect patient history and aid in developing appropriate patient treatment plans. The average ASI administered by a trained staff member takes approximately an hour and is frequently followed by the development of the patient's treatment plan. The ASI-MV allows a client to self-administer the ASI by using a computer with little to no supervision or assistance from a staff member, who is free to do other work for that hour. The software application is analogous to a simple video game, where the client is able to watch the screen, listen to the audio question, and click on the most appropriate answer.

The ASI-MV automatically scores the assessment and provides a variety of automated treatment plan options. The results can be stored electronically. It is even possible to store files on the Internet. The electronic files can be forwarded to other service providers electronically, if applicable, to eliminate the need for an unnecessary repeat of the assessment. The ASI- DENS (Drug Evaluation Network System) is another program that uses the computer to help expedite the ASI assessment process by automating the treatment plan process, scoring the data, and reducing human error during data collection. The ASI-DENS is available at no charge to qualified organizations because it is part of a nationwide research project tracking substance-abuse assessment data on a national level. The application is not self-administered by the patient, however it still saves trained staff time and reduces the potential for human error in calculating and scoring the assessment.

These two applications offer current opportunities that could benefit social service providers using the ASI assessment forms, if they were aware of them.

Understanding the social service, nonprofit culture as well as the culture of the surrounding community is important to consider when engaging an NPO. NPOs existing on a shoestring budget are not likely to sacrifice resources designated for one area in order to invest in something new like technology. NPO management staff would be understandably hesitant if an individual or consultant team tried to promote an IT product in the same manner that they would promote it to an organization from the private sector. NPOs need to be sure that their investment will fit their "unique" setting, as most can not afford a failed investment. The individual promoting technology to a nonprofit social service organization needs to gain the NPO's trust, assuring the NPO that they understand nonprofit culture and what taking a financial and systemic risk means to such organizations.

There are IT markets virtually untapped in the field of small, community-based nonprofit organizations. NPOs will need hardware, software, training, guidance, support, and resources to successfully transition into the Information Age. Helping to close the Organizational and Digital Divide is beneficial for the community as a whole because it ensures the sustained existence of those small, specialized organizations providing service to niche populations which might otherwise fall through the cracks.

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Appendix A:

Questionnaire/ Letter of Consent

Section 1: BACKGROUND
The percent of respondents who circled each answer precedes the lettered selection. Not all respondents answered all questions. The number of respondents for each question is included.

1. Approximately, how many paid employees are in your organization? **N=72**
   a. **40%** None
   b. **14%** 1 – 5
   c. **11%** 6 –10
   d. **7%** 11-20
   e. **19%** 21-50
   f. **4%** 51-100
   g. **4%** more than 100

2. Approximately how many volunteer positions does your organization depend on for normal operations? **N= 72**
   a. **15%** None
   b. **24%** 1 – 5
   c. **19%** 6 –10
   d. **11%** 11-20
   e. **13%** 21-50
   f. **8%** 51-100
   g. **10%** more than 100 volunteer positions

3. Approximately how many years has your organization been in operation? **N=72**
   a. **0%** 0-3 years
   b. **10%** 4-6 years
   c. **11%** 7-10 years
   d. **24%** 11-15 years
   e. **7%** 16-20 years
   f. **49%** more than 20 years

4. Would you describe your organization as: (circle all that apply) **N=72**
   a. **74%** Local
   b. **4%** Statewide
   c. **8%** National
   d. **6%** Regional
   e. **8%** International
   f. **0%** Don't know

5. Which Bay Area counties are home to your organization? (circle all that apply) **N=72**
   a. **17%** San Mateo
   b. **16%** San Francisco
   c. **18%** Santa Clara
   d. **19%** Alameda
   e. **19%** Contra Costa
   f. **11%** Solano

6. Which description best fits your organization? **N=72**
   a. **29%** We are struggling to keep up with the advances in information technology in comparison to others in our industry.
   b. **36%** We are doing a good job keeping up with the advances in information technology in comparison to others within our industry.
   c. **13%** We are doing an excellent job keeping up with the advances in information technology.
   d. **6%** Don't know
   e. **17%** Our organization does not fit any of these descriptions.

7. To what extent are you concerned about your organization's ability to keep up with the advances in information technology? **N=72**
   a. **18%** Very concerned
   b. **38%** Somewhat concerned
   c. **29%** Not too concerned
   d. **14%** Not concerned at all
   e. **1%** Don't know

8. In general, how are computers made available to staff who need or use them? (Circle the choice that best describes your organization) **N=65**
   a. **55%** All staff who need or use computers has access to a computer at their workstation.
   b. **22%** The majority of staff has individual access to a computer but some do share computers.
   c. **6%** The majority of staff share computer access at or near their workstation.
   d. **9%** Most staff use computers at a centralized computer area.
   e. **8%** Don't know

9. Does your organization currently have adequate computer hardware for staff to efficiently perform their work? **N=71**
   a. **55%** The computer hardware we have is adequate.
   b. **21%** The computer hardware we have is not adequate.
   c. **18%** Some of the computer hardware is adequate but some is not adequate.
   d. **6%** Don't know

10. Does your organization have access to the Internet? **N=71**
    a. **84%** Yes
    b. **16%** No
    c. **0%** Don't know

    IF "YES"
    ↓

10-A.) Who uses the Internet for work related activities? (circle all that apply) **N=54**

    a. **46%** All staff
    b. **69%** Volunteer staff
    c. **19%** Supervisory staff
    d. **33%** Administrative staff
    e. **4%** Direct care and line staff
    f. **9%** Clients (with or without staff assistance)
    g. **22%** Executive staff
    h. **11%** Fundraising / development staff
    i. **6%** Don't know

10-B.) How is the Internet used in your organization? (circle all that apply) **N=54**

  a. **50%** Fundraising (soliciting funds, identifying funding sources, etceteras)
  b. **72%** Researching information relevant for clients
  c. **41%** Industry related research such as: programming, training and operational issues
  d. **46%** Recruitment for volunteers or employees
  e. **20%** Recruitment for clients
  f. **69%** Promoting the organization and the mission
  g. **13%** Other
  h. **2%** Don't Know

11. How useful of a tool is or would the Internet be in helping your organization carry out programs? **N=71**
  a. **49%** Very useful
  b. **27%** Somewhat useful
  c. **8%** Not too useful
  d. **4%** Not useful at all
  e. **12%** Don't know

12. Currently, how beneficial is it to have a website in your industry? **N=72**
  a. **37%** Very beneficial
  b. **32%** Somewhat beneficial
  c. **12%** Not too beneficial
  d. **15%** Don't know

13. How would you describe your organization's website relevant to your needs? **N=72**
  a. **11%** Needs significant improvement
  b. **19%** Needs some improvement
  c. **10%** Just adequate- serves its purpose
  d. **10%** Good but not great
  e. **9%** Great
  f. **1%** State of the Art
  g. **4%** Don't Know
  h. **36%** We do not have a website

14. Does your organization specifically include information technology in the annual budget? **N=72**
  a. **31%** Yes
  b. **57%** No
  c. **17%** Don't know

15. Is there a staff member formally allocated to address information technology (IT) issues? (circle the answers that best describes your organization) **N=71**
  a. **16%** Yes, we have staff whose sole responsibility is our IT systems.
  b. **3%** Yes, we have volunteer staff allocated to address IT issues.
  c. **25%** Yes, we have staff allocated to address IT issues but it is not their primary job responsibility.
  d. **49%** No, we do not have staff formally allocated to address IT issues.
  e. **1%** Don't know
  f. **6%** Other / Not applicable

16. Are you aware of any resources or programs dedicated to help organizations like yours to improve access and use of technology? **N=72**
    a. **32%** Yes
    b. **68%** No

17. Which of the following categories <u>best</u> describes information technology's current role in helping your organization fulfill its mission?   (circle the best answer) **N=69**
    a. **8%**   A "necessary evil"
    b. **8%**   A "saving grace"
    c. **42%** Strategic advantage
    d. **42%** Natural evolution

18. Does your organization use e-mail as a standard communication tool? (examples of standard communication tools include: FAX machines, voice mail, pager, and telephone) **N=72**
    a. 71% Yes
    b. 29% No

    • Respondents who answered **YES** to question 18 were asked to complete the **"Plugged In"** Section which includes question numbers 19 to 28.

    • Respondents who answered **NO** to question 18 were asked to complete the **"Acoustic"** Section, which included questions 29 to 36.

PLUGGED – IN SECTION
Circle the letter that best describes your organization

19. Approximately how long has your organization been using e-mail? **N=50**
    a. **18%** 0-2 years
    b. **58%** 3-5 years
    c. **20%** 6-8 years
    d. **2%**   9-11 years
    e. **2%**   more than 12 years
    f. **0%**   Don't know

20. How does your organization use e-mail? **N=50**

    A. To communicate with other staff in the organization
        1.) **46%** A great deal
        2.) **28%** Somewhat
        3.) **16%** Not too much
        4.) **0%**   Not at all
        5.) **4%**   Don't know

    B. To communicate with outside individuals and other organizations
        1.) **56%** A great deal
        2.) **26%** Somewhat
        3.) **14%** Not too much
        4.) **0%**   Not at all
        5.) **4%**   Don't know

    C. To communicate with current, past and potential clients

        1.) **22%**   A great deal
        2.) **18%**   Somewhat
        3.) **14%**   Not too much
        4.) **43%**   Not at all
        5.) **2%**   Don't know

21. How essential to the functioning of your organization's day-to-day operations is e-mail? **N=50** (circle the best answer)

    a. **12%**   Critical: can not provide services without e-mail.
    b. **24%**   Essential
    c. **30%**   Very important but not essential
    d. **26%**   Important
    e. **8%**   Not important
    f. **0%**   Don't know

22. Based on your general knowledge, how do senior staff members of your organization feel about e-mail? **N=50**

    a. **64%**   Major time-saving and production-enhancing tool
    b. **26%**   Minor time-saving and production-enhancing tool
    c. **2%**   Overall, not a time-saving and production-enhancing tool
    d. **10%**   Don't know

23. Based on your general knowledge, how do senior staff members of your organization feel about the Internet? **N=49**

    a. **51%**   Major time-saving and production-enhancing tool
    b. **37%**   Minor time-saving and production-enhancing tool
    c. **2%**   Overall, not a time-saving and production-enhancing tool
    d. **10%**   Don't know

24. Is your IT system upgraded regularly? **N=49**

    a. 39%   Yes
    b. 45%   No
    c. 16%   Don't know

If NO or Don't Know –answer #25 -27
    ↓

25. Is cost a reason why the organization may not upgrade the IT systems? **N=41**

    a. **68%**   Yes
    b. **15%**   No
    c. **12%**   Don't know
    d. **5%**   Upgrades not necessary

26. Is the general upkeep and trained staff needed a reason why the organization may not upgrade IT systems? **N=46**

    a. **83%**   Yes
    b. **9%**   No
    c. **9%**   Don't Know

> 27. Are having more immediate or important priorities in the organization a reason IT systems may not be upgraded? **N=40**

    a. **53%**   Yes
    b. **23%**   No
    c. **25%**   Don't know

28. In your opinion, which statement best reflects the impact of e-mail on the social service field? (circle all that apply) **N=46**
    a. **7%**   Don't know
    b. **37%**   E-mail has not had a significant impact on the social service field.
    c. **43%**   E-mail has had a significant impact on the social service field.
    d. **2%**   E-mail has had some impact on the social service field.
    e. **11%**   It is a significant disadvantage to not use e-mail in the social service field.

THE ACOUSTIC SECTION
Circle the letter that best describes your organization

29. Does your organization really need e-mail? **N=21**
    a. **19%**   Yes it does need e-mail
    b. **38%**   No it does not need e-mail
    c. **38%**   The need for e-mail is debatable within the organization
    d. **5%**   Don't know

30. Is the cost a reason why the organization does not use e-mail? **N=21**
    a. **10%**   Yes
    b. **65%**   No
    c. **25%**   Don't know

31. Is the general upkeep and need for trained staff a reason why the organization does not use e-mail? **N=21**
    a. **16%**   Yes
    b. **74%**   No
    c. **11%**   Don't Know

32. Is having more immediate or important priorities in the organization a reason e-mail is not currently used? **N=21**
    d. **33%**   Yes
    e. **39%**   No
    f. **28%**   Don't know

33. Is there a plan to implement e-mail in the future? **N=21**
    a. **15%**   Yes
    b. **45%**   No
    c. **40%**   Don't know

34. Based on your general knowledge, how do senior staff members of your organization feel about e-mail? **N=21**
    a. **32%**   Major time-saving and production-enhancing tool
    b. **16%**   Minor time-saving and production-enhancing tool
    c. **21%**   Overall, not a time-saving and production-enhancing tool
    d. **32%**   Don't know

35. Based on your general knowledge, how do senior staff members of your organization feel about the Internet? **N=21**
   a. **16%**   Major time-saving and production-enhancing tool
   b. **11%**   Minor time-saving and production-enhancing tool
   c. **21%**   Overall, not a time-saving and production-enhancing tool
   d. **53%**   Don't know

36. In your opinion, which statement best reflects the impact of e-mail on the social service field? (circle all that apply) **N=21**
   a. **11%**   Don't know
   b. **16%**   E-mail has not had a significant impact on the social service field.
   c. **37%**   E-mail has had a significant impact on the social service field.
   d. **37%**   E-mail has had some impact on the social service field.

OFFICIAL LETTER OF CONSENT

Dear Collegue,

My name is Jenifer Fay and I am a graduate student in the Nonprofit Administration Program through the College of Professional Studies at the University of San Francisco. I am also a professional in the social service field and have worked with nonprofits for over ten years. I am doing a study on the impact of information technology in nonprofit social service organizations. I am specifically interested in how widely e-mail and the Internet are used by social service organizations with modest annual budgets.

I am asking for your participation in this study because you are either in a management or executive position within your organization and therefore assume you have a general sense of the organization's priorities, demographics, and daily operations. I obtained the name and address of your organization through a list produced by the California Nonprofit Database Project.

Your CONSENT TO PARTICIPATE in the study will be demonstrated by completing the attached survey and returning it to me in the enclosed pre-addressed, postage paid envelope. *Since this survey is intended to be completed by management or executive staff, your consent also acts as management approval for staff participation.* The survey asks about basic demographics, use of computers, e-mail, and the Internet, and your feelings regarding technology's importance to the social service field.

Study records will be kept as confidential as possible. Only study personnel will have access to the survey results. Each survey will be coded with a number for tracking purposes only. Specific or discerning organizational information such as name and address will not be used in the study nor will any individual survey information be shared.

While participation in this study is completely voluntary and there is no direct benefit to you, there is an anticipated benefit for the field as whole. Currently, there is very little research paying specific attention to the needs of medium to small social service agencies. This study intends to promote and attract attention to the needs of this important niche of service organizations frequently overlooked by the media as well as researchers.

As professionals in the non-profit sector, we are probably all well aware that resources can be tight. As a result, this researcher understands that organizations must continually make difficult choices regarding the best allocation of funds. Your organization, in all likelihood, has weighed appropriate relevant factors to make the best decisions possible for the organization. This researcher thanks you and your organization for your contribution to the social service field and to this project. I am genuinely grateful for your help, because I could not do this without you!

If you have any questions about the research, contact me at (510)839-6730. For further information you may contact the IRBPHS office at the University of San Francisco, which is concerned for the protection of volunteers in research projects. Call the IRBPHS voicemail at 415-422-6091 or contact via e-mail at IRBPHS@usfca.edu or by writing IRBPHS, Dept. of Psychology, Education Building, USF, 2130 Fulton Street., SF, CA 94117.
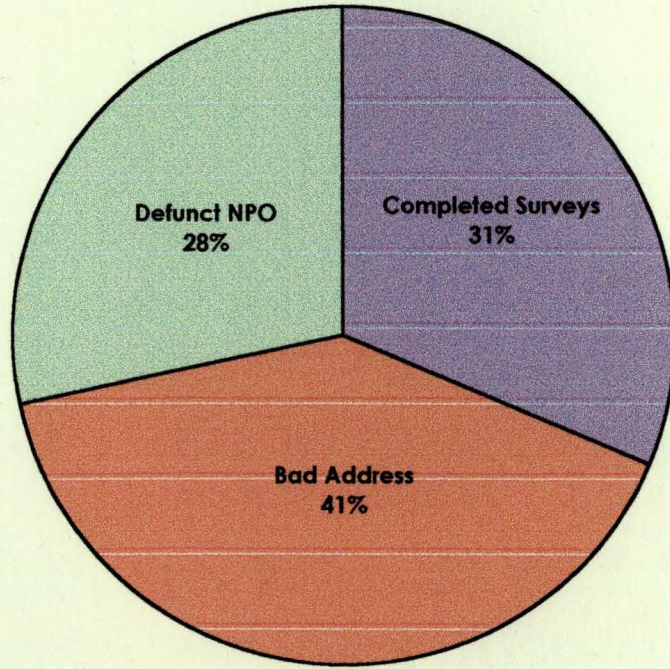
Warm Regards,

Jenifer Fay
Masters Candidate in Nonprofit Business Administration
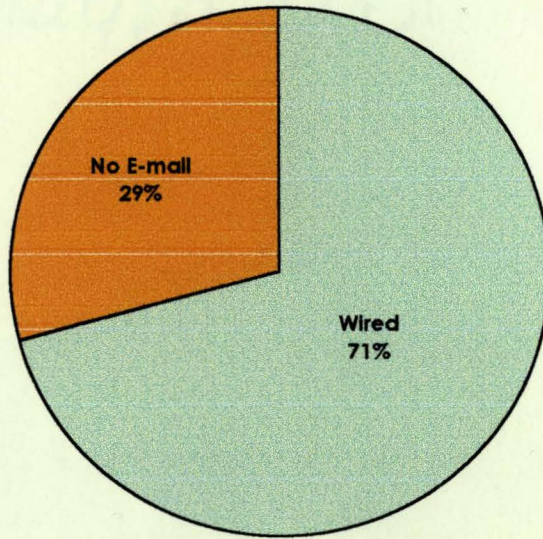University of San Francisco
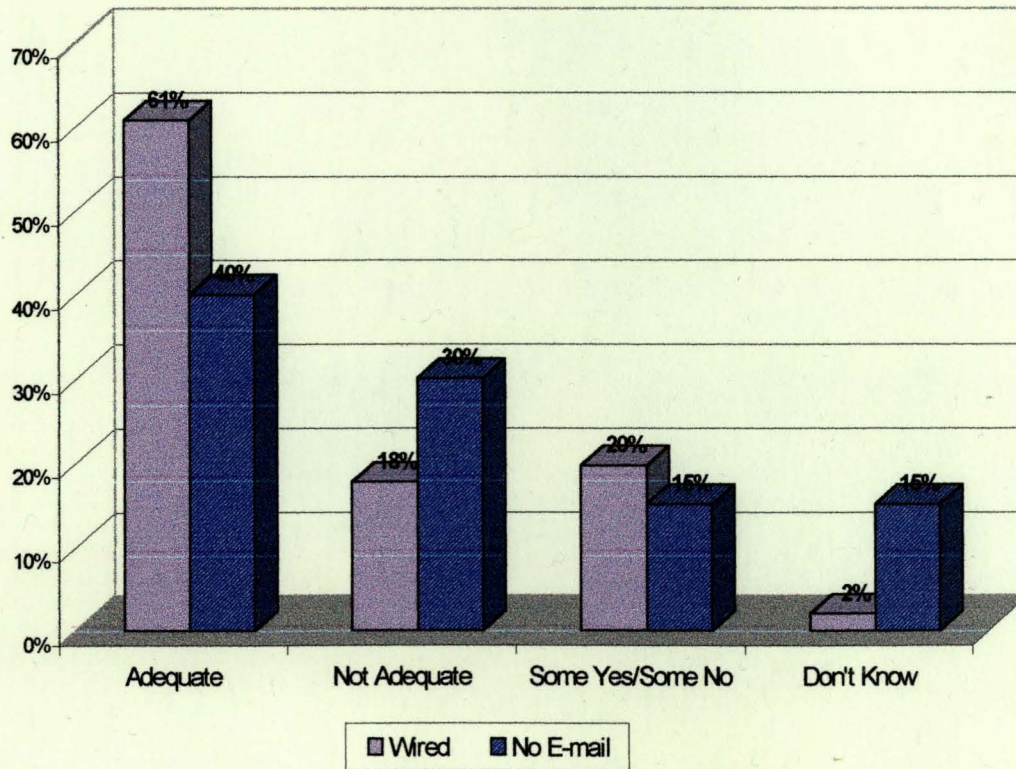
Appendix B: Graphs

GRAPH: A

Response to Mailing: N=400

GRAPH: B

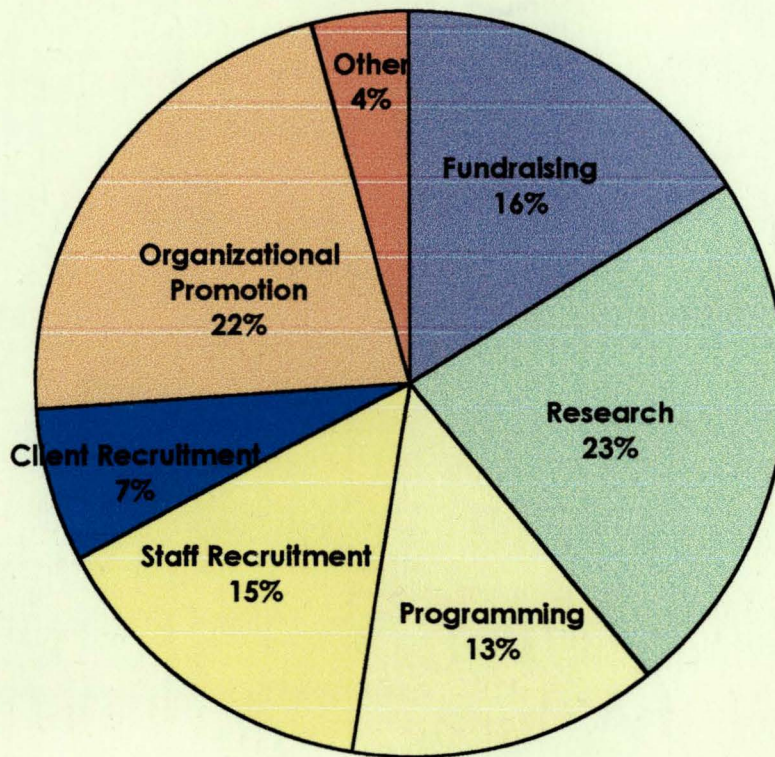**Use of E-mail Among the Sample Population**
N=72

No E-mail
29%

Wired
71%

<u>GRAPH: C</u>

Access to Adequate Computers Within Subgroups

GRAPH: D

NPO Use of the Internet
N=54

GRAPH: E

Perception of E-mail Between Groups

"E-mail is a......."

Wired Group · No E-mail Group