A Study on the Impact of Information Technology Use on Nonprofit Organizations

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A Study on the Impact of Information Technology Use on Nonprofit Organizations

By

Ashima Saigal

April, 2008
A Study on the Impact of Information Technology Use on Nonprofit Organizations

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Ashima Saigal

A Thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science in
Computer Information Systems

at
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April, 2008

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ABSTRACT

A Study on the Impact of Information Technology Use on Nonprofit Organizations

By

Ashima Saigal

The benefits of Information Technology (IT) in for-profits have been studied since the early 1970’s. These benefits, including increases in productivity, necessitate investments in resources, human capital and strategic plans. This triangle of investments is crucial to the success of IT implementation and its correlation to a positive fiscal bottom line. The impact on nonprofits has only been studied since the late 1980’s. This study has evaluated what makes an IT project successful for nonprofits and why. The methodology used is triangulation, which blends three types of data to provide multiple viewpoints: face-to-face interviews, surveys and research. This will ascertain which IT investments enhance or diminish a nonprofit organization’s productivity and effectiveness.
ACKNOWLEDGEMENTS

There are so many people to thank and like all accomplishments in life. I would like to first thank my thesis committee: Dr. Jagadeesh Nandigam, Dr. Mark Hoffman, Dr. Roger Ferguson and Ms. DeDe Esque. I am forever grateful for all your guidance, support and meetings by helping me analyze the findings and critical think about the results.

Secondly, I would like to thank my Johnson Center colleagues, Dr. Mary McDonald, Dr. Kathy Agard and Ms. Susan Morales-Barias. I am forever grateful for all you did in helping me to analyze and organize the data, providing me time to work during the day and showing up on the day of the presentation.

Third, thank you to Dr. Judy Kim and Ms. Karen Henry who read and re-read my work more times than I would like to say. They provided me such great feedback and often conversations got started over the phone where we spent hours discussing and analyzing the data.

Fourth, I want to thank the WTC members and the Nokomis Foundation who provided me the amazing data and laboratory to uncover the findings in an open minded and encouraging environment. Thanks for your willingness to volunteer hours for this work; I certainly hope it is helpful.

Finally, thank you to my family who has always encouraged the pursuit of higher education. They supported, encouraged and fed me frequently. Particularly, to my supportive husband David Fridsma. Thank you for being my editor and best friend. I love you!
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Chapter 1

Introduction

Background

Information technology (IT) is "the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data" (Merriam-Webster’s Online Dictionary [MOD], 1978). For-profits\(^1\) have long recognized IT’s power to reduce costs of coordination, communication and information processing (Brynjolfsson & Hitt, 2000) by incorporating and effectively utilizing IT to increase efficiencies in their management and operations. These efficiencies often lead to an increase in the fiscal bottom line, which is a benefit for the owners of the for-profit. The technology tools used most often encompass computer hardware, software and networks, including the Internet.

Technology has a positive impact on the economy and productivity of organizations in the for-profit sector. A report by McKinsey Global Institute reveals that, although it is complex and varies across industries, IT enables and contributes to economic growth (2002). Technology gains have allowed for-profits to keep a competitive edge over their rivals, develop new products and services, realize substantial increases in output and productivity (Brynjolfsson & Hitt, 2000), and ultimately provide fiscal savings.

Researchers Brynjolfsson and Hitt found firms achieved productivity gains and savings with IT implementation by incorporating changes in work practices, strategies and products and services. The various studies cited throughout this research also suggest

\(^{1}\) Established, maintained, or conducted for the purpose of making a profit (MOD, 1972).
IT helps increase output and productivity. The correlation between implementation of IT and increased productivity and efficiency in for-profits has been well documented (Aral & Weill, 2006; Brynjolfsson & Hitt, 2000; McKinsey Global Institute, 2002; Stiroh, 2002). Successful IT projects have increased profits, making it possible for many for-profits to realize improved stock market value. Based on this and other research, this thesis will first describe the “triangle of investment” needed for success with IT implementations in for-profits: infrastructure, human capital and planning.

First, in relation to the investment in infrastructure, research has shown that it increases profitability and organizational performance in the long term but carries high up-front costs (Aral & Weill, 2006). Moreover, when organizations commit to IT infrastructure, they must be ready for the added costs, not just in the short term, but also for the long term. The need to update, upgrade and change the infrastructure is imperative to keeping the machines running smoothly.

Secondly, regarding the investment in human capital, the importance of matching organization staff’s ability with the technology capabilities is illustrated by a case study of “MacroMed”, a medical parts manufacturer. Their IT system fell short because line workers retained many elements of the obsolete work practices, which were time-intensive. These individuals were unable to let go of inherited patterns of behavior. The company needed to invest in re-training staff to achieve the desired results. This organizational learning and investment in human capital was crucial to the success of IT projects (Brynjolfsson & Hitt, 2000).

Finally, in relation to investment in planning, success of IT projects relies on alignment of the organizational and IT strategic plans. IT projects fail because they do
not align with the organization’s requirements as outlined in their organizational plan (Brynjolfsson & Hitt, 2000).

Clearly, investments in infrastructure, human capital and strategic planning are central to the success of the IT implementation.

Problem Statement

Nonprofit\(^2\) enterprises are increasingly incorporating IT into their operations (Blau, 2001; Gifts in Kind International, 2001; Finn, Maher & Forster, 2006; Peizer, 2006; Popjoy, 1992; Public Sector Consultants, Inc., 1999; Quinn, Verclas & Hoehling, 2006). The impetus can come from other nonprofits, individual donors, foundations or government requirements and accountability pressures (Saidel & Cour, 2003; Te’ein & Young, 2003). Those nonprofits, seeking to grow and expand, have taken a cue from the for-profits with the goal of achieving comparable efficiency gains and growth in support of their mission.

The three main investments – infrastructure, human capital and strategic plans – are the cornerstone of success in IT implementations in organizations. Throwing more money or resources at an IT project will not necessarily increase its success if there is no strategic plan (Brynjolfsson & Hitt, 2000). Providing more training to staff will not help an IT project if there is no infrastructure investment (Aral & Weill, 2006; Brynjolfsson & Hitt, 2000; Stiroh, 2002). Clearly, this triangle of investment is critical to the project’s success, with each point on the triangle playing a vital role.

The purpose of this research was to examine this triangle of investment and its impact on the effective implementation of IT and its relation to nonprofit organizational

\(^2\) Not conducted or maintained for the purpose of making a profit (MOD, 1896).
effectiveness. The research design was comprised of in-depth interviews with a group of tech-savvy nonprofit leaders, a survey to those same individuals and research of available literature. The large body of research surrounding IT use by for-profits was applied to nonprofits to reveal patterns and make recommendations.

**Organization of Thesis**

Chapter 1 presented an explanation of the use of IT by for-profits, the problem statement and purpose of this research. Chapter 2 provides a review of literature showing the lack of research on the nonprofit sector's use of technology. Chapter 3 introduces the research methodology and the participation of the Women's Technology Consortium. Chapter 4 presents the data collected, analysis and findings. Chapter 5 offers recommendations for both nonprofits and funders. Chapter 6 provides concluding remarks and suggestions for future study.
Chapter 2

*Literature Review*

Nonprofit organizations seek to achieve increased efficiency and productivity to support their mission. Although many surveys have been conducted to uncover nonprofits’ attitudes about IT, how it is adopted and what types of nonprofits adopt IT (Blau, 2001; Gifts in Kind International, 2001; Peizer, 2006; Popjoy, 1992; Public Sector Consultants, Inc., 1999; Quinn, Verclas & Hoehling, 2006; Forester, Jeffery J, 2006; Finn, Maher Forester, 2006), the research on organizational readiness and the impact of IT implementation is sparse (Blau, 2001; Saidel & Cour, 2003).

Thus, this research focuses on the rich literature on IT’s impact on for-profit organizations (Aral & Weill, 2006; Brynjolfsson & Hitt, 2000; McKinsey Global Institute, 2002; Stiroh, 2002). This research shows that a triangle of investment in infrastructure, human capital and planning is critical to successful implementation of IT. The challenge with these three investments is that they are often in direct conflict with the nonprofit organization’s mission. The next sections look deeper at each type of investment and explain the main issues as related to nonprofits.

*Infrastructure Investment*

Nonprofit organizations often view investment in infrastructure as taking focus away from their missions. A nonprofit whose mission is to feed the hungry, for example, would rather spend money to feed more individuals than on a new computer for which effective implementation could ultimately facilitate even more food. The Bayer Center’s biannual study of Pennsylvania nonprofits demonstrates that 44% of nonprofit organizations have an IT budget (Forester, 2006). This low percentage exemplifies the
fact that nonprofits lack interest or sufficient knowledge in allocating dollars for IT infrastructure investment. Saidel & Cour’s study demonstrates that there is a tricky tradeoff between spending on IT and direct service to clients, making IT spending a difficult decision (2003).

Other funding sources, such as foundations and governmental agencies, display indifference in building the organizational IT infrastructure by restricting the amount of money a nonprofit can allocate on its grant application to support administrative capacity or by refusing to allow any capacity support whatsoever. There is little funding to sustain the internal infrastructure of the organization on which programs are built, but the funding is available and continues to support the programs.

**Human Capital Investment**

Investment in human capital remains a challenge. Nonprofits face two predicaments: staff untrained in technology and IT professionals uninterested in working in the nonprofit sector. A nonprofit survey in Michigan (Public Sector Consultants, Inc., 1999) reveals that less than 50% of nonprofit computer managers received formal training. Often employees and volunteers of nonprofit organizations are passionate about the mission, but have little technical knowledge or training (Public Sector Consultants, Inc., 1999; Quinn, Verclas & Hoehling, 2006). Organizations may try to hire individuals with IT skills, but interested individuals are difficult to find and hold onto because IT professionals prefer to stay on the cutting edge of technology to remain a desired commodity in their profession (Saidel & Cour, 2003).
Planning Investments

Even with dollars dedicated to developing IT infrastructure, organizations often lack a strategic plan on how to spend them. One study shows that in 2000 and 2001 only 32% of nonprofits had long-term technology plans (Gifts in Kind, Inc., 2001). Competition between nonprofits may lead to IT purchases that do not fit strategic needs. When some nonprofits extend their scope and enhance their services using IT, other nonprofits may feel pressured to follow their lead, often without the organization’s leaders understanding the ramification of such an implementation (Blau, 2001).

This illustrates the importance of strategic planning - ensuring the use of the right technology for the right purpose. This is evidenced by a story about an African village and a bell. The village invited a delegation of Western technology experts to help them build communication technology. The delegation spoke to the village leader about the plan for a sophisticated IT station. The village leader listened respectfully and, after hearing all the wonders of modern IT, requested a simple bell. Ring once, it is time to gather in the village; ring twice, the well has run dry; and so on. The delegation was shocked. They had not asked first but assumed what was needed (D. Koning, personal communication, 1999). They thought modern technology held all the answers but they failed to ask the right questions.

Planning provides the organization an opportunity to reflect and ask the right questions which allows for the alignment of the IT strategic plan with the overall strategic plan.
Chapter 3

Methodology

In 2000, Nokomis Foundation founded the Women’s Technology Consortium (WTC) because they discovered that a large number of nonprofit organizations serving women and girls were using outdated software and hardware. This research focuses on the WTC.

Organizations Studied

The original intent of the WTC was to help nonprofits improve their use of technology and their ability to manage and maintain the equipment. At the time of this research, the WTC was comprised of ten organizations serving women and girls in West Michigan. The original purpose was three-fold: provide members access to technological information, advice, techniques and training provided by peers and an outside tech advisory panel; leverage the power of aggregated purchasing of hardware/software and contracted services; and create a web site highlighting activities of the consortium members.

Nokomis Foundation was able to achieve the first of these three original purposes. Since 2000, it has provided financial support to the WTC members (average grant of $6,500) and the facility and facilitation for the WTC to meet on a monthly basis to discuss technology and exchange ideas. The value of the WTC goes well beyond the funding, although that should not be overlooked. Most members said they felt that being a part of the WTC helped them to not only keep up with the technology, but to begin to see the importance in having technology in their organizations.
Nokomis Foundation, by in its request for proposal (RFP) guidelines (see Appendix E - Nokomis Request for Proposal), provided funding for: contract services related to technology; database or website design; expanded e-mail and Internet access; hardware, including printers and other peripheral equipment; networking; software; telephone systems; and training. The RFP also required answers to questions: organizational and contact information, IT budget information, commitment to the WTC through individual participation and board support, and current technology plan.

**Target/Sample Population**

In 2007, the WTC was comprised of ten nonprofit organizations of which nine were included in the research. One organization was excluded from the research because it was a funding organization; another organization was included solely in the technology survey because the Executive Director fell ill during the data collection process; and another organization was excluded from the request for proposal and narrative data because it was in the midst of reorganization. For purposes of this report, the nine organizations are labeled using alphabetic letters A through I.

Participation in the study was voluntary, but strongly encouraged by Nokomis Foundation, so individuals were highly motivated to engage in the research process through to completion. Interviews were conducted with a single decision-making staff member at each organization such as Chief Operating Officer, Chief Executive Officer, President, Executive Director or Assistant Director. All were female and had worked at their organizations for 10 or more years.

The WTC organizations studied were located in Michigan. Although the initial goal of Nokomis Foundation was to work with organizations in West Michigan (defined
as Kent, Ottawa, Muskegon and Allegan Counties), there was one organization located further north.

**Data Collection**

Three methods of data collection used were face-to-face interviews (see Interview Instrument), emailed survey (see Appendix A - Survey Instrument) and request for proposals (RFP) and response narratives since 2000 (see Appendix D - Organizational Overviews).

The documentation analysis began with a review of the RFPs and response narratives. Nokomis Foundation provided folders, which contained the RFPs and the narrative responses, for all nine organizations. The researcher spent time organizing and creating overviews for each organization (see Appendix D - Organizational Overviews).

The researcher conducted face-to-face interviews with questions (see Appendix B - Interview Instrument) and the organizational overviews (see Appendix D - Organizational Overviews) sent prior to the interview. This allowed the interviewee an opportunity to prepare. The researcher interviewed eight organizations once or twice, digitally recorded and transcribed each of the interviews, which lasted about two hours.

Emailed surveys were identical to the 1999 survey sent by Nokomis Foundation to a larger group of nonprofits omitting questions related to year 2000 computer issues. Nine organizations returned the new surveys.

**Data Analysis**

Spreadsheets were used to compare survey data from 1999 and 2007. Figures and tables were created using the data collected.
The researcher transcribed the interviews and created a document for each organization. After all interviews were completed, the researcher placed each question into a single document (see Appendix C - Interview Analysis Sample). After transcribing the interviews, the researcher looked for themes and similarities in the answers from the interviews (see Appendix C - Interview Analysis Sample). Those answers that had clear themes are included in the research.

The researcher then used triangulation method as described by Jick's research, Mixing Qualitative and Quantitative Methods: Triangulation in Action, to interpret the results of the interviews, surveys and RFP. Revealed patterns formed the basis for recommendations.

Chapter 4

Findings

The following sections present the findings of the data collection and analysis. Each of the three methods is reviewed in detail: request for proposal and narrative that was provided by Nokomis Foundation, information technology survey that was emailed to WTC members and face-to-face interviews conducted with the WTC members.

Request for Proposal and Narrative

The results of this section omit two organizations; one was in the midst of reorganization and the other because the Executive Director became ill during the data collection process. The following tables provide details on the type of organizations that were included in this research.

Organizational revenues and expenses from 2006 audited balance statements had similar distributions between organizations (see Table 1 - Revenue Chart and Table 2 -
Expense Chart). For the purposes of this research, small-sized organizations were defined as having annual revenue or expenses equal to or less than $500,000; medium-sized organizations, between $500,001 and $3 million; and large-sized organizations, more then $3 million.

The average revenue of these organizations was more than the average expenses, meaning that the organizations were able to cover their expenses with revenue.

<table>
<thead>
<tr>
<th>Revenue</th>
<th># Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= $500,000 (small)</td>
<td>2</td>
</tr>
<tr>
<td>$500,001 - $3,000,000 (medium)</td>
<td>3</td>
</tr>
<tr>
<td>&gt;= $3,000,001 (large)</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 1 - Revenue Chart

<table>
<thead>
<tr>
<th>Expenses</th>
<th># Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= $500,000 (small)</td>
<td>2</td>
</tr>
<tr>
<td>$500,001 - $3,000,000 (medium)</td>
<td>3</td>
</tr>
<tr>
<td>&gt;= $3,000,001 (large)</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2 - Expense Chart

All the organizations had technology budgets with varying amounts (see Table 3 - Technology Budget). Although the sampling was too small to draw any specific conclusions, the 3% average allocated to IT was still well below the 6% benchmark stated in the Bayer Center’s biannual study of Pennsylvania nonprofits (Forester, 2006).

The size of an organization does not conclusively influence the technology budget. An organization with more revenue does not necessarily spend a larger percentage on IT. Notice that a small organization had a greater technology budget percentage than the two large organizations.

<table>
<thead>
<tr>
<th>Technology Budget</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1% - 3%</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>&gt;= 3.1%</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 - Technology Budget
These organizations often designated dollars for program and administrative functions. Some embedded the administrative expenses into their program expenses, thus looking at the administrative percentages alone does not tell the entire story. Funders set the unrealistic expectation that all money should provide direct service thus forcing the nonprofit organization to keep their administrative percentages low (Draper, 2003; Urban Institute, 2004).

**Information Technology Survey**

Nine WTC members received and responded to the survey and were included in the results (see Appendix A - Survey Instrument). The 2007 survey questions were taken from the 1999 survey, which thirty-four nonprofit organizations completed. This comparison showed the technological movement from 1999 to 2007. A one-on-one comparison was not possible as the organizational level data was not available from the 1999 results. The final 1999 report was used to compare the aggregated data. The findings presented relate to web site and web master, barriers to technology and future plans.
Web Site and Web Master

Figure 1 - Web Site and Web Master illustrates that 90% of organizations in 2007 had a designated web master and 100% had a web site whereas in 1999, little more than 60% had a web site and 44% had web masters. Note that designated does not mean full-time.
**Barriers to Technology**

Figure 2 - Barriers to Technology shows that the three barriers to technology in 1999 continued to be barriers in 2007: funding, staff time and staff expertise. There was an increase in the funding barrier from nearly 82% to 100% illustrating technology needs continued to grow, but the funding available appeared to be shrinking and the ability to budget for technology continued to be a struggle.

![WTC Barriers to Technology Graph](image)

**Figure 2 - Barriers to Technology**

In 1999, both funding and staff time were barriers at nearly 82%, but in 2007, the time barrier shrunk to 70% while the funding barrier increased. Staff expertise had the smallest percentage change, in 1999, it was a barrier at over 73% and in 2007, it was 70%. In addition, the figure illustrates that consultants lack technology skills. Two items were not barriers: don’t see need and not a board priority.
Future Plans

Figure 3 - Technology Plans illustrates the question posed to the participants related to their technology planning for the next 2-3 years. They checked all items that applied to their organization. Note that all items were included in their technology plans for 2007.

Figure 3 - Technology Plans

The two largest percentages in 2007 were staff training and replacing hardware, both were included in all of the participants 2-3 year technology plans. In 1999, the two highest percentages were upgrading current software and staff training.

Upgrading the computer networks was on the plan in 2007, whereas in 1999 these organizations did not see the need or they had no networks to upgrade. A decrease by over 40% in Update/Add New Equipment was significant. Finally, the last major
comparison pertains to network computer plans where there was a decrease by nearly 10%.

**Face to Face Interviews**

Eight organizations were interviewed face-to-face and the conversations were recorded and transcribed (see Appendix B - Interview Instrument). The researcher based the questions on the RFP responses with an intentional focus on the three main investments: infrastructure, human capital and planning. After review, the thesis committee added additional questions. The Human Research Review Committee (HRRC) then approved the questions (see Appendix F - HRRC Approval).

After transcribing the interviews, the researcher looked for themes and similarities in the answers from the interviews (see Appendix C - Interview Analysis Sample). Those answers, which had clear themes, were included in the research. The questions asked correspond to one of the following categories: general, impact, resource, planning and human capital.

**General Questions**

These questions provided a starting point for the discussions. All organizations were able to define and explain information technology, success with technology, technology investments, barriers to use of technology and technology’s role in achieving the organization’s mission.
**Table 4 - General Question Summary**

<table>
<thead>
<tr>
<th>Question</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>How would you define Information Technology?</td>
<td>Using technology to communicate; store, analyze and exchange data; and facilitate knowledge.</td>
</tr>
<tr>
<td>How would you define success with technology?</td>
<td>Being useful, impactful, efficient, productive and easy.</td>
</tr>
<tr>
<td>What are the investments that must be made for technology projects to be successful?</td>
<td>Strategy, planning, time, training, expertise, money and up to date equipment.</td>
</tr>
<tr>
<td>What are the barriers that stand in the way of effective use of technology in your organization?</td>
<td>Funding, secondary budget item, support from executive level, staff time, on-going staff training and staff/consultant expertise.</td>
</tr>
<tr>
<td>Does implementation of technology help your organization achieve its mission?</td>
<td>Successful IT projects help these organizations better analyze gaps and respond to needs of their constituents by being more responsive and efficient.</td>
</tr>
</tbody>
</table>

**Impact Questions**

The questions related to impact of IT were about increasing productivity and efficiencies in the organization. When presented these questions, which were written in a positive manner, universally the individuals shared their challenges before their successes (see Table 5 - Impact Question Summary).

Challenges revolved around management, systems and processes. The responses related to increasing staff productivity and efficiency, internal communication and external communication focused on email management and impact on staff's productivity. The responses related to data management and fundraising focused on systems, internal processes and lack of knowledge.

Successes were more challenging to quantify, but there were some similar themes. Regarding internal and external communications, IT had reduced costs and improved communication with board members, donors and volunteers. Regarding impact on staff, internal communication had allowed staff to keep up with changes and receive consistent
messages. Secondly, staff focused on tasks related to programs because they were able to access information and analyze data quickly and easily.

<table>
<thead>
<tr>
<th>Question</th>
<th>Theme</th>
</tr>
</thead>
</table>
| How has technology had an impact on increased productivity and efficiency with staff? | Staff is able to keep up with organizational changes; create reports to streamline work; empower volunteers to access information; find information quickly.  
*Challenge: Email management could decrease staff productivity.* |
| How has technology had an impact on increased productivity and efficiency with reporting outcomes and data management? | Ease in collecting data, exporting data and analyzing the data making reports more accurate and consistent. Allows individuals managing data to focus on other tasks.  
*Challenge: Changing requirements and lack of knowledge on what to collect to analyze data effectively.* |
| How has technology had an impact on increased productivity and efficiency with fundraising? | Targeting and communicating with donors effectively. Results for fundraising efforts easily available.  
*Challenge: Knowing the system and having an internal process.* |
| How has technology enhanced internal communication?                      | Quick, frequent and consistent communication. Issues dealt with and organizational information shared quickly.  
*Challenge: Email management and misunderstanding email.* |
| How has technology enhanced external communication?                      | Saving money on phone and snail mail via email. Getting information immediately to clients and board members. Web sites have impact on individuals needing access to organizational information 24/7. Web site also serves as a platform for consistent message and branding.  
*Challenge: Managing emails and web site does take time.* |

Table 5 - Impact Question Summary
Resource Questions

These questions related to resources such as funding, IT infrastructure and WTC participation (see Table 6 - Resource Question Summary). All of the organizations agreed that without the support of the Nokomis Foundation and their participation in the WTC, their technology infrastructure would have been much weaker and their achievements less significant. Specifically, they saw their participation in the WTC as providing them with peer learning and shared resources. The WTC provided the organization funding, networking and collaboration opportunities not otherwise available.

If money were no object, these organizations would have hired staff to help guide IT projects and provided staff training and support. Organization B’s Executive Director, who had no IT staff, explained that the benefit of having “someone who could be right there and explain it and could truly get us the training we need to use it to the most of its ability” would be valuable.

Even organizations with IT staff suggested that they would benefit from hiring additional staff as noted by organization H’s COO, “right now our technology person is also our facility manager and deals with construction, janitorial, maintenance and security issues.”

Finally, concerning funding, these organizations were able to leverage the Nokomis funding with additional dollars, but the funding was not solely for technology. Three of the eight organizations received additional funds earmarked exclusively for technology.
What would you have done if you didn’t have the support of the Nokomis Foundation?

Technology infrastructure would be much weaker and organizations would not achieve all that they have.

Were you able to leverage the Nokomis funds with other funds?

Three organizations were able to leverage additional technology funds.

What advantages does your organization have because of its participation in the WTC?

Funding, networking, peer learning and sharing resources, collaboration and continuing education.

What is the one thing you would do to your infrastructure if money were no object?

Wireless access, hiring staff, upgrade/add computer/network, provide training, and upgrade software.

Planning Questions

These questions related to organizational planning which include strategic and technology plans. There was a clear distinction between the size of the organization and the nature of the IT plan, which was either tactical or strategic. The small-sized organizations had tactical IT plans, mid-sized organizations had a mix of tactical and strategic IT plans and large-sized organizations had strategic IT plans. Whether the plan was strategic or tactical, the plans spanned one to two years and were updated annually.

How often do you update your technology plan?

Annually and the plan spans 1-2 years.

How do you ensure the IT plan is in sync with your organization’s strategic plan?

For those with strategic plans, most of these organizations see technology as embedded in the strategic plan and keeping it synced is not relevant. Those with tactical plans are not able to keep the plans in sync.
the tech staff to implement the strategy. The COO’s role, to translate the strategy into a tactical project to be implemented, played a critical role in the success of IT projects, ensuring the alignment of strategy and implementation.

![Diagram showing the roles of CEO, COO, and Tech Staff in relation to Strategy and Implementation]

Figure 4 - COO Role

**Human Capital Questions**

All organizations treated IT education in the same manner. Staff was provided IT training when first hired into the organization. The training focuses on how to use the systems in the organization, but not on how those systems related to the organizational process. The staff had limited continuing education provided, normally related to software upgrades of system implementations. Most organizations expected staff to master effective IT usage and learn software packages on their own. Only one organization provided dedicated help desk support to their staff to answer questions and provide hands on help with specific questions.

The WTC members varied in the number of staff dedicated to IT. One organization had a full time employee dedicated to IT. Two organizations had a half time employee. The remaining five organizations had various staff, including the CEO, working on IT with the average amount of time dedicated to IT less than 35%.
These organizations all contracted out services and benefited from the contractor’s knowledge of their products and IT. The downside was the lack of contractor’s intimate knowledge of the day-to-day operations of the organization.

<table>
<thead>
<tr>
<th>Question</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often does staff receive technology continuing education?</td>
<td>Organizations provide training upon entry into the organization and training again for updated software packages, but most staff is expected to master IT on their own.</td>
</tr>
<tr>
<td>What are the main differences between hiring staff and contracting services?</td>
<td>Organizations see value in contracting out services because of their depth of knowledge of IT, but these contractors typically don’t have an intimate knowledge of the day to day operations of the organizations to effectively implement IT.</td>
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</tbody>
</table>

Table 8 - Human Capital Question Summary

**Finding Analysis**

The triangle of investments: infrastructure, human capital and planning, play a key role in successful implementation of IT. This section describes the findings of the data in relation to these investments.

**Infrastructure**

Infrastructure investments are lacking for three main reasons: organizations are not providing reasonable IT budgets to support technology; restricted funds limit the organizations’ ability to fund IT; and organizations find it difficult to acquire additional funding to support and update their original investment.

**IT Budget**

These organizations consistently budgeted less then required. The average IT budget in nonprofits was 3% whereas the Bayer Center’s biannual study of Pennsylvania nonprofits suggested a minimum of 6% (Forester, 2006). In addition, when asked what infrastructure they would upgrade if money were no object, some said adding and
upgrading computers and upgrading software. Organizations’ budgets should consider upgrades and additions as an operating expense. Most organizations, when looking to reduce expenses, cut their technology budgets. As noted by the COO of organization C “if we sat down with just the operating budget” it could be problematic “because sometimes on our really tightest years that is where the CEOs have wanted me to cut. Can you cut just a couple computers? And we have.” She continued, “sure you want to cut technology before you cut people, but it hurts just as bad sometimes.” This exemplifies the lack of priority of the IT budget due to financial constraints and lack of priority by the CEO. Clearly, CEOs need to see the value and importance of technology.

**Restricted Funding**

Often public funding is restricted\(^3\) which forces the nonprofit to limit its spending to programs. As stated by organization H’s COO, “it’s easier to hire staff for a program than it is to get technology for the program. So, we can hire more people to write everything down and hand tally easier then funding the technology.” Moreover, public funds were not the only cause of the problem. As noted by the same individual, “it becomes a challenge when every single funding source is saying the same thing. The reality is that it takes staff resources to support IT in a meaningful way where it is actually going to be useful. Even if people will pay for it, so many times they only want to pay for the actual equipment or software or they will pay for outsourced contract expenses.”

\(^3\) Monies that must be used for a specific purpose or in a specific way by the recipient (Nonprofit Good Practice Guide, 2007).
Additional Funding

Nonprofit organizations find it challenging to acquire additional funding for technology. They have noted that lack of funding was a key barrier to success with IT. Executive Director of organization A stated that they “have 50-60 computers and if you’re looking at replacing 1/3, which is 20 per year, then it’s quite expensive when they are a $1000.”

Although all organizations attempted to leverage the funds which Nokomis provided by finding additional funding, only three (37%) received funds for technology. This runs counter to the research out of the Bayer Center, which showed that 72% of technology proposals were fully funded by foundations (Forester, 2006).

Human Capital

Two key barriers noted on the survey and interviews were staff expertise and staff time, which illustrates the importance of human capital investments to the success of IT implementation. Specifically, human capital challenges revolve around the following: having dedicated IT staff, using contractors effectively, staff expertise with IT and available staff time.

IT Staff

There appears a threshold when organizations began to see value in having dedicated IT staff, but the challenge is finding the right person. When those interviewed reflected, they realized that either an IT person focused on the hardware and networking or the programming and database development, but it was not easy to find someone skilled in both. Organization D’s COO hired three different individuals and took 10 years before finding the right IT staff person. She found that it was important to find an
individual who enjoyed people, was process oriented, and was a good problem solver, traits difficult to find in one individual. She said that when hiring staff, instead of "focusing on their experience, it was still important but I wanted hands-on experience. I started looking for skill sets and worker traits: demonstrating people skills, process completion, and analysis." She then felt "it got easier to interview people because clearly some were great at technical parts of it, but not the people part of it."

**Contractors**

Contractors play an important role in the success of IT implementations and the findings showed that the use of contractors varies based on size of organization. Small- and mid-sized organizations used contractors to provide tactical implementation of IT projects typically without guidance or support of organizational staff. Large-sized organizations used contractors as strategic partners working in collaboration with the internal IT staff. This reliance on contractors to implement IT projects without internal support in small and mid-sized organizations can be a challenge because often the contractor does not know the organization's goals. As shown in Figure 2 - Barriers to Technology, lack of technology consultant skill was a barrier, and thus this reliance on them may not help the organization achieve success with IT. Large-sized organizations can benefit from the use of contractors to fill gaps in their knowledge of IT as noted by a large-sized organization's COO, "the good thing about having contractors is that their job is to stay on top of everything that is happening in the industry and they have the exposure of seeing hands on, reality based environments." Thus, if used strategically, contractors may play a guidance role in the use of IT, but the work must be led by the organization and done in collaboration with staff.
Staff Expertise

Limited staff technology knowledge or ability to use technology is a hindrance. There are two key points related to staff expertise, the importance of the IT skills in the COO and in the staff itself.

Regarding the COO, they are the bridge between tactical and strategic use of IT and their IT skills are important in the effective use of IT in their organization (see Figure 4 - COO Role). None of these organizations has a COO educated or formally trained in IT. They have been learning on the job and technology has been handed to them as a task to accomplish rather than strategic tool to manage. As recounted by the COO of organization D, "when I first got hired here they had one network and had three people working on it. They said to me ‘Can you be a network administrator?’ and I didn’t know much about that other than PCs and stuff. They didn’t have the vision because they didn’t know what that means.” As the technology became more and more embedded in the organization, she goes on to state that her “job for technology has just not mushroomed, it has been the atom bomb compared to the other stuff that I do, that’s good and bad.”

In relation to IT skills of staff, none of the eight organizations provided ongoing education or training to staff on a regular basis. Education was provided either when staff joins the organization or when major changes are made to software used in the organization. As noted by the Executive Director of organization F, “I think a big part of it is making sure that all staff knows how to use the technology. We have made some strides in getting the technology in place but then not everyone is trained and you have staff turnover and then the person that comes in doesn’t get the training. I don’t think we’ve seen the full result where the efficiency factors in. A lot revolves around the
vigilant training and making sure that staff know what they are supposed to do and understand how to use the technology and also that we have the reporting standards so we can pull out the data and utilize it in the most effective way.” Additionally, some find effectively using IT skills of younger staff challenging. As noted by the COO of organization G, “I have found employees who are younger age are much more comfortable and more trained on computers because of the work at their university or college. Some of the staff who have been here for a while have not been through that process perhaps getting them though the learning curve has been a bit more of a challenge.”

**Staff Time**

Barriers related to staff time are the following: staff training, project management and information management. The lack of time available or provided to staff for IT limits its use and effectiveness.

Regarding staff training, most organizations felt there was little or no time for staff to receive training, yet they saw the lack of staff training and expertise as key barriers. Often, staff is educated as they work and are unable to experiment or learn through failure. As recounted by the Executive Director of organization D, “had we more time for more training and getting everybody on the same page to learn it, we could be even more efficient. But who has time for that?” Clearly, the training is valued, but time is often not available.

It takes time to implement IT projects and failure and success depend on the management of the project by key staff. Organization G’s COO said that technology projects “brings people together to use their time and ferret out the information.
Something you think will take only an hour, will probably take 4 or 5 hours. Or, if you really want to do it well, you might need to talk to 2 or 3 or 4 consultants or look at 2 or 3 or 4 web sites for research. So, you have to invest the time to really look and see what do we need and where are we going. That takes time.” Project management is important, but it takes time, not just for the individual managing the project but also for the staff providing the information. Although project management is valued, time is often not available.

Finally, management of information is another challenge related to effective use of staff time. All of the interviewees acknowledged that staff was inundated with massive amounts of information and they were challenged to filter relevant information. Organization D’s Executive Director was not entirely clear if staff wasted time, and she worried that “you always have that Internet, and we have policies and procedures in place but there is a temptation to allow way too much of that stuff that is not business related into your house. You can’t have 500 visitors here to chit chat with your staff physically, and you’d know it if somebody’s husband was here every four minutes or an hour. But, with the Internet, there is a problem. And it’s not just the kids, husband or grandma, it’s the world.” She goes on to note that although the organization had email policies “how do you enforce it without alienating people?” Organization staff find it challenging to optimize their time and use the technology tools available without wasting time.

Planning

Investment in planning is significant to IT project success, both in the overall IT planning process and the planning of specific IT projects. These organizations have
struggled to find balance between tactical and strategic work and often IT projects are not well planned or managed.

**IT Plans**

None of the individuals interviewed had any IT background. They relied on their IT staff or contractors. Based on the interviews with these organizations, it appeared the key was having IT experience to help guide the strategic decision-making process. The challenge is that these organizations relied on the decisions of IT staff or contractors who, if not given clear direction, will fall back on their knowledge. Thus, the technology often drives the organization instead of the organization driving the technology.

Most of these organizations did not tie their IT strategic plans to their organization's strategic plan. The main dilemma is that organizations lack anyone with technology skills who also has intimate knowledge of the organization. The individual in charge is often a human services person who understands the opportunities offered by technology, but struggles with its strategic use. They are stuck in a tactical realm following guidelines and benchmarks instead of driving the technology based on the organization's needs. The Executive Director of organization F stated, “our technology planning is mostly around crisis aversion instead of maximizing the technology because we don’t always fully understand the functionality. So, it always is a bit of operating at a loss or behind the eight ball not having that expertise as part of the process.”

**IT Project Planning**

Finally, IT projects lack planning or management. Projects start without dedicated staff to manage the project or, worse yet, a consultant manages the project. Often those in charge of the project plan do not know which questions to ask and they rely on
consultants to guide or develop systems based on the consultant’s skill instead of the organization’s needs and requirements.

Chapter 5

Recommendations

The recommendations focus on two audiences, nonprofits and funders. These recommendations are important to the success of IT implementation. Each recommendation focuses on one of the three key investments: infrastructure, human capital and planning.

Nonprofits

Nonprofits must begin to look at IT as a strategic tool. Instead of having the technology drive the organization’s goals, the goals should drive the technology. Focusing on the three main investments, each of these recommendations relate to what the nonprofit can do to ensure the success of IT implementation.

Infrastructure

- Create baseline budget line item for IT that supports the maintenance and growth of IT in the organization – nonprofit organizations embrace technology, but the amount of money available for IT is limited and, too often, a victim of budget cuts. It is critical that organizations build a baseline budget item for IT to support the growth and maintenance of IT. Spend the IT budget throughout the year, not just at the end of the year if money is remaining. Pay for IT work as you would pay for your utility bills, on a regular basis.
Human Capital

- **Develop a technology committee in which board members, staff and volunteers can participate** – this committee will provide much of the IT knowledge that these organizations lack. The committee would be similar to the Women’s Technology Consortium by providing peer support, recommendations and guidance. The individuals selected can come from the board and volunteers in the community. The IT staff of the organization, along with any other technology-savvy individuals, should also be included in this committee.

- **Use consultants to help support with their expertise, but not to drive IT projects** – a clear vision and focus for consultants will help in the successful implementation of IT projects in the organization. All projects should be managed and supported by internal staff in the organization, not an outside consultant. When engaging a consultant, clearly outline the requirements expected of the consultant and those expected of the organization.

- **Provide on-going continuing education for all staff** – this particular investment is critical because staff is provided little IT support or education. The importance of education is noted by organization D’s COO who states, “we are a human service agency, we are not a technology firm and we have non-technical people using a lot of our technology. And if you don’t have that bridge between the technology verbiage and usage, to that human service part, you can give them the best instruments in the world and they won’t use them and they won’t use them well in some instances.” Organizations need to provide IT education regularly and this can be accomplished through brown bag lunches or staff meetings. The education could occur as often as
monthly or less frequently, but the key is to provide regular education for staff focused specifically on IT.

Planning

- *Embed IT into the organization’s strategic plan* – planning is critical to effective use of IT. When using the strategic plan to drive the requirements of IT the projects will align with the organization’s goals rather than focusing on guidelines and benchmarks. Create a tactical IT plan for IT staff to use, but keep the IT strategy in the strategic plan and make sure it meets the goals of the organization.

- *Provide project planning and support for all IT projects in organization* – support and manage every IT project undertaken by the organization by assigning a single key staff person. To ensure successful IT project implementation, allocate sufficient time and organizational assistance to this individual. Organizational assistance can be education, external resources such as a team of advisors like the Technology Committee, and organizational leadership.

- *Identify key measurements for identifying success* – knowing your goals and objectives for the project by developing key measurements will help to identify project success and, in the case of failure, learning what to avoid next time. Drive the measurements by the organization’s goals. For example, the goal of being able to track clients more efficiently could have the measurements of staff spending less time managing client paperwork. These types of measurements will allow the organization to reflect on projects which can be successfully completed internally and those where external support would be beneficial.
Funders

Funders that help these nonprofits should look at IT through the lens of providing long-term IT support. Finding and collecting resources and working with the nonprofits to develop outcomes will help their grantees.

Infrastructure

- *Provide continuous IT funding* – not all organizations are able to fund their own IT infrastructure and may struggle to implement special projects. These organizations will require continued funding support. Too often funders provide grants for single purchases without understanding that nonprofits need more than one-time, narrowly defined funds. Funders should view IT infrastructure investments as key and vital to the growth and attainment of the organization's mission.

- *Provide planning and guidance to embed IT into organization’s budget* – these organizations strive to budget effectively for IT but are often restricted to fund only programs or specific projects. Funders can help these organizations by providing advice and recommendations on how they can begin to embed IT into their budgets.

Human Capital

- *Require staff to have formal training or education for all technology requests* – organizations realize that providing education and training for staff is important to success with IT but struggle to make it a reality. Funders should provide additional funding specifically for educating staff. By providing additional dollars for formal training and education, organizations will be obligated to spend the dollars on education and, as was the case with infrastructure, begin to realize the benefit.
• **Provide IT consultants and consulting services to grantees** – rather than organizations discovering consultants through word-of-mouth, funders should provide a pool of vetted IT consultants and connect the grantees with their services. The funder negotiates these consultants’ rates and would verify their skills. The consultants’ skills and understanding would continue to mature as more grantees enlist their services. This benefits the funder and their grantees.

• **Develop a platform of peer-learning to allow grantees an opportunity to share failure, successes and ideas** – the value of the WTC goes well beyond the funding; as Organization G’s COO explained, being involved in the WTC was like “being a part of the team. Knowing I have 12-15 people, I can email or meet with and ask questions. In this community, I don't think I could have built that support system.” The WTC has helped these organization embrace and see the value of technology; as noted by Organization C’s COO, “we’ve gotten to a point where we have been up to date and have been keeping up to date long enough so that it is like part of what we do so we wouldn’t think of not doing it. I just don’t think we would have gotten to that point that quickly at all without the help of Nokomis.” Developing a platform where your grantees can engage in a peer-learning model provides an avenue for them to develop a team to support their organization.

**Planning**

• **Focus capacity building funding on well planned and internally supported technology projects** – require that all IT projects tie back to the strategic plan of the organization and ask organization leadership to provide details on implementation plans, processes and support. Funders need to look at this information and make decisions based on
the organizational support of the project. A staff person should be assigned to support and manage the project and the leadership should support the project by providing the staff time required to complete the project effectively.

- Request outcomes that demonstrate impact on constituents, staff or organization – providing a platform for nonprofits to share their goals and objectives as well as measurements for those goals will allow the organizations to evaluate their successes and their failures. Organizational goals alone must drive these measurements, never the funder’s requirements.

Chapter 6

Conclusion

Concluding Remarks

The nine organizations that have been the focus of this research have adopted and embraced technology in their organizations. They have begun to reap the rewards of successful use of technology through increased staff efficiency and productivity. The triangle of investments - infrastructure, human capital and strategic planning - plays a key role in the successful implementation of technology. All the research and interviews stress that barriers to effective IT implementation are insufficient funding, limited staff time and skill, and lack of IT planning on both projects and strategy.

Providing long term funding for IT maintenance and future work, providing funding and time for staff training, and implementing well-managed and supported IT projects that align with the organization’s strategic plan will ensure successful IT implementation. Nonprofits and Funders are responsible for addressing the barriers and working toward success with IT.
Future Work

Further study would be useful to build upon the findings of this research. Comparing the WTC membership to a group of peer organizations that did not have the benefit of membership would be an interesting comparison as a way to gauge the success of the WTC.

Additionally, in-depth research on successful and unsuccessful IT projects would better uncover traits of success. This research could interview additional organization staff to uncover their perspectives of successful and unsuccessful IT projects.

Limitations of Study

Though the literature reviewed came from a variety of sources, the organizations of focus were the WTC members, which represent a limited number of organizations. Therefore, the results of the survey in terms of influential variables cannot be generalized to other organizations. However, the results of the interviews and surveys do align with the results of the reviewed literature with both for profit and nonprofit organizations.

The Nokomis Foundation, through grants and monthly meetings, provides IT support to WTC members. The benefits provided to these organizations may have influenced their level of expertise as well as expectations for IT implementation; they may be more technically astute as compared to their peers.
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Appendices

Appendix A - Survey Instrument

Organization Name: ____________________________________________

Contact Name: ___________________ Title: ___________________

Organization Budget: __________ Technology Budget: __________

Organization Mission: _______________________________________

___________________________________________________________

___________________________________________________________

___________________________________________________________

___________________________________________________________


Technology Status

Hardware

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<tr>
<th>Processing Speed</th>
<th>Printers &amp; Equipment</th>
<th>Networking</th>
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</thead>
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<tr>
<td></td>
<td>please write the number of units</td>
<td>please write the number of units</td>
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<tr>
<td>___ Pentium II or slower</td>
<td>___ Laser B&amp;W</td>
<td>___ Client Server</td>
</tr>
<tr>
<td>___ Pentium III or faster</td>
<td>___ Laser Color</td>
<td>___ Peer to peer</td>
</tr>
<tr>
<td>___ Celeron (specify)</td>
<td>___ Ink Jet</td>
<td></td>
</tr>
<tr>
<td>___ MAC (specify)</td>
<td>___ Scanner</td>
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<tr>
<td>___ Other</td>
<td>___ Fax</td>
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<tr>
<td></td>
<td>___ Copier</td>
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Software

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</tr>
<tr>
<td>Database</td>
<td>Windows 2000</td>
</tr>
<tr>
<td>Web Design</td>
<td>Windows ME</td>
</tr>
<tr>
<td>Donor</td>
<td>Windows XP</td>
</tr>
<tr>
<td>Spreadsheet</td>
<td>Windows Vista</td>
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</table>

Internet
<table>
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<th>Question</th>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td><strong>Does your organization have email?</strong></td>
<td><strong>How is email primarily used?</strong></td>
</tr>
<tr>
<td>__ Yes</td>
<td>__ Internal communication</td>
</tr>
<tr>
<td>__ No</td>
<td>__ External communication</td>
</tr>
<tr>
<td><strong>How is email primarily used?</strong></td>
<td><strong>Please check all that apply</strong></td>
</tr>
<tr>
<td>__ Internal communication</td>
<td>__ Donor</td>
</tr>
<tr>
<td>__ External communication</td>
<td>__ Newsletters</td>
</tr>
<tr>
<td>__ Donor</td>
<td>__ Other</td>
</tr>
<tr>
<td>__ Newsletters</td>
<td></td>
</tr>
<tr>
<td>__ Other</td>
<td></td>
</tr>
<tr>
<td><strong>Is email for all employees or a select group of employees?</strong></td>
<td><strong>How is the world wide web most used?</strong></td>
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<tr>
<td>__ All</td>
<td></td>
</tr>
<tr>
<td>__ Select group</td>
<td></td>
</tr>
<tr>
<td><strong>Does your organization have Internet access?</strong></td>
<td><strong>How much does your organization spend on Internet access each month?</strong></td>
</tr>
<tr>
<td>__ Yes</td>
<td></td>
</tr>
<tr>
<td>__ No</td>
<td></td>
</tr>
<tr>
<td><strong>Is web access available to all employees or a select group of employees?</strong></td>
<td><strong>Does your organization have a web site?</strong></td>
</tr>
<tr>
<td>__ All</td>
<td>__ Yes</td>
</tr>
<tr>
<td>__ Select group</td>
<td>__ No</td>
</tr>
<tr>
<td><strong>Do you have your own domain name?</strong></td>
<td><strong>Estimate the number of hours it takes your web master to maintain your site.</strong></td>
</tr>
<tr>
<td>__ Yes</td>
<td></td>
</tr>
<tr>
<td>__ No</td>
<td></td>
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<tr>
<td><strong>Do you track web site statistics or analytics?</strong></td>
<td><strong>If you track statistics, what software do you use?</strong></td>
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<tr>
<td>__ Yes</td>
<td></td>
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<tr>
<td>__ No</td>
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</tbody>
</table>
Future Technology Plans & Dreams

What are your plans in terms of technology over the next 2-3 years?
Please check all that apply

- Replace existing hardware
- Add new hardware
- Upgrade current software
- Add new software
- Update/add new equipment
- Network computers
- Upgrade computer network
- Expand web site
- Staff training
- Other(s)

What are barriers to enhancing your organization’s technology (perceived or real)?
Please check all that apply

- Lack of funding
- Lack of staff expertise
- Lack of staff time
- Do not see a need for enhanced technology
- Inappropriate Internet access by staff
- Not a board priority
- Lack of technology consultant skills
- Other
What is the one most pressing technological issue facing your organization right now?

If you had $10,000 to spend right now, if any way on technology for your organization, what would you do?
Appendix B - Interview Instrument

General Questions
- How would you define Information Technology?
- How do you define success with technology?
- What are your biggest technology challenges today?
- What was your biggest technology challenge in 2000?
- What is the biggest change you’ve seen in your organization due to implementation of technology? How are you able to quantify this?
- In your opinion, what are the investments that must be made for technology projects to be successful?
- What are the barriers that stand in the way of effective use of technology in your organization? Internal and external?
- Does implementation of technology help your organization achieve its mission? If so, how? If not, why?
- Explain your experience with software vendors. Have you noticed that software vendors often sell products or stop support of products? How do you deal with obsolesces of products?

Impact
- Has technology has an impact on increased productivity & efficiency with:
  - Staff?
  - Reporting outcomes?
  - Fundraising efforts?
  - Data management?
  - If so, how? If not, why?
- Has technology enhanced:
  - Internal communications?
  - External communications?
  - If so, how? If not, why?
- Of all the projects...
  - Which was most successful and why?
  - Which was least successful and why?
  - Which would you do again differently?

Plans
- How often do you update your technology plan? How do you ensure it is in sync with the organization’s strategic plan?

Resources
- What would you have done if you hadn’t had the support of the Nokomis Foundation for technology support?
- Were you able to leverage the funds with other funds? How much and from whom?
- What are advantages does your organization have because of its participation in the WTC?
- If money were no object, what would you do to your infrastructure today?

Human Capital
• Who has official IT responsibility for the organization? Are they a full time 
  employee, part time employee, contractor or volunteer?
  o If employee, have they been formally educated/trained?
• How often does staff receive technology continuing education?
  o What have you seen in the outcomes of this training?
• How does other staff benefit from the WTC meetings?
• What would be one thing you would do to support your staff, volunteers and 
  board members around technology?
• Hiring staff versus contracted support.
Appendix C - Interview Analysis Sample

**Question:** How would you define Information Technology?
**Theme:** Using technology to communicate; store, analyze and exchange data; and facilitate knowledge.
**Individual Responses:** Ability to have technology resources provide and store information to help make better decisions in the work being done at the organization. Being able to communicate with clients not using the standard paper written method and collection of all of the information of the organization and data communication back and forth to be able to manage the data. Being able to connect in the workplace using technology. Development, installation and implementation of technology. Technology is defined as computers, copy machines, web sites, telephones, printers, networks: communication media allowing for internal and external communication. Everything that affects the network of communication through the agency, including servers, phone lines, video conferencing, web sites, intranet, even down to phone systems and the way people use faxes. Gather and store information. The use of electronic devices (computers, telephones, printers, scanners, etc) to facilitate communication, information exchange, and knowledge. Sharing of all kinds of information and data through some method of electronic, digital equipment. Any computerized system that provides information and output.

**Questions:** How do you define success with technology?
**Theme:** Being useful, impactful, efficient, productive and easy.
**Individual Responses:** Useful without being burdensome. That the implementation of technology is impactful in a positive way for the organization. For example, email was something that was encouraged and implemented in 2000, but in 2006, it's out of control and very difficult to manage. It appears that productivity and efficiency have gone down with the implementation of email in the organization. Success is recognizing that IT is a priority and being efficient in using it. Having people trained in using it and getting everybody on the same page. Everything is in sync and staff is not complaining. Everyone is happy. It's not about saving time; it's about maximizing use of your time for the tasks that you need to get done. Output as expected. When technology makes daily tasks and the access to and analysis of information easier. Reaching the audience you need to reach, clients, customers. Allows higher productivity or more details of information.

**Question:** In your opinion, what are the investments that must be made for technology projects to be successful?
**Theme:** Strategy, planning, time, training, expertise, money and up to date equipment.
**Individual Responses:** Patience, that it takes time to implement. Had vision of what could be done with reporting, took nearly seven years to see that vision implemented. Finding the right people for the right positions and tasks. Having a strategy in place and taking it step by step. Adequate training, IT counsel that is trusted and keeping equipment current. Meeting staff expectations and knowing where to invest time and money effectively. Keeping up with technology, staying as current as possible with the hardware. Time, staff training. Staff and consultant time and expertise to lead the necessary technology project planning, adequate staff time available to manage the project during implementation, adequate training of all end users with at least one end user becoming expert enough to serve as the internal “go to” person and sufficient funding to purchase necessary equipment, software, consulting expertise and staff time. Time. Input from lots of different people and money. Providing the staff resources to design a concept properly up front and ongoing staff training. Also, funding.

**Question:** What are the barriers that stand in the way of effective use of technology in your organization? Internal and external?
**Theme:** Funding, secondary budget item, support from executive level, staff time, on-going staff training, keeping up with technology, asking the right questions, listening for the right answers and staff/consultant expertise.
**Individual Responses:** What questions to ask and to answer and individual staff capability and capacity. Keeping up with technology. Current CEO doesn't push technology and doesn't see the whole picture. Financial hard to keep up with technology. People have difficulty changing to embrace technology (mission/margin crunch). Lack of office and reliance on board members. Secondary budget item, lack of staff and consultant time and expertise. Person driving the technology lacks technology expertise. Ongoing training/education of staff on technology. Money, funding.

**Question:** Does implementation of technology help your organization achieve its mission? If so, how? If not, why?
Theme: Successful IT projects help these organizations better analyze gaps and respond to needs of their constituents by being more responsive and efficient.

Individual Responses: More responsive to crisis support which is 24/7. Having information at finger tips to make business decisions. Unified the organization and created visibility for the organization. Increased internal and external communication. Want to support individuals virtually. Evaluate who is getting services compared to planned populations, what services are most utilized and what outcomes result. Allows staff to work as efficiently as possible in getting day to day work done, getting reports done and typing assessment, which frees up time to spend with clients which directly supports the mission. Provides quantifiable information to funders and gaps in services provided.
Appendix D - Organizational Overviews
Center for Women in Transition

2000
*Web site development*
GOALS:
- Support capital campaign drive materials
- Raise money
- Sign up as volunteer or for classes
- Purchase tickets for events
- Sell materials
- Staff access email
- Provide information for girls on domestic violence and rape

2001
*Implement parts of technology action plan: back up system, new printers, memory upgrades and assistance with software troubleshooting*
GOALS:
- Upgrade back up system to stabilize system
- Upgrade all computer memory to minimum of 64 MB RAM
- Improve printing capabilities to reduce cost of mailing
- Fix donor data problems with Denari

2002
*Replace outdated computers, firewall and data viz for palm*
GOALS:
- Staff more efficient
- Manage appointments and contacts while away from workstation
- Secure confidential agency data

2003
*Install Voice over IP to program center and shelter*
GOALS:
- Centralize management of phone system
- Voice and voice mail traffic to pass seamlessly between two offices
- Response to crisis situation more efficiently

2004
*Upgrading donor software (Paradigm)*
GOALS:
- Make more efficient tying into accounting system
- More accuracy in identification of source of funds

2005
*Upgrading donor software - different than 2004 request*
GOALS:
- Make more efficient tying into accounting system
- More accuracy in identification of source of funds
- Increased reporting capabilities
- Streamline donor management processes
- Increase fundraising effectiveness and productivity
- Decrease number of errors through duplicate entry
2006

*Client recordkeeping database*

**GOALS:**
- Assist in reporting and outcome measures
- Testing site for Michigan based domestic violence shelter software (ServicePoint)
- Move from home grown system, internally support to supported system
- Less reliance on internal IT staff
- Prove ServicePoint can be used and meet Federal regulations

2001

*Grand Rapids Opportunities for Women*

**Database support, staff training, digital camera and database training for staff**

**GOALS:**
- Staff trained on using database
- Ongoing database support
- Unified training experience for staff
- Photos of graduates in brochures, newsletters and flyers

2002

*Purchase donor management software*

**GOALS:**
- Clearly track data on donors, clients and program outcomes
- Maintain current mailing list
- Decrease amount of staff on data entry
- Export data for accounting and reporting purposes
- Increase accuracy of data

2003

*LCD Projector, software upgrades, purchase computers and laptop*

**GOALS:**
- Increase quality of training programs
- Train staff
- Lighter laptop for travel
- Better handle with the multiple databases

2004

*New computers and server upgrade (NT -> Server 2003)*

**GOALS:**
- Increase productivity
- Increase security
- Increase overall services supplied to clients

2005

*Technology support and development software training*

**GOALS:**
- Reduction of staff time spent deleting spam
- Reduction of staff time spent trying to fix computer issues
- Staff able to run reports as needed
- Development director understand the development software
- Full utilization of development database
- Interface all databases better to remove duplication of data entry

2006

*Phone system replacement, computer and server purchases and database purchases/upgrades*

**GOALS:**
- Continue to implement technology action plan
- Replace dying phone system
Girl Scouts of Michigan Trails

2000
Web Site
GOALS:
- Quick method of communication to volunteers and girls
- Save money on postage
- Empower key staff and volunteers to learn about today’s technology
- Encourage troops to build their own websites
- Useful information to girls and adults who are involved in Girl Scouting.
- Information to potential community members on Girl Scouting
- Provide an alternative method for donors to contribute

2001
Connecting offices across parking lot with other staff, includes network and phones
GOALS:
- Keeping staff feeling connected to each other although in different locations

2002
Digital projector purchase and laptop computer
GOALS:
- Use projector for board meetings
- Use projector to provide training to volunteers
- Help educate donors about programs and the Capital Campaign

2003
New computer, printer, volunteer management software upgrade and upgrade existing software for Communication Director
GOALS:
- Increase efficiency of managing volunteer data
- Retention and recruitment of leaders and volunteers

2004
Wireless network, messaging system upgrade, thumb drives, POS upgrade
GOALS:
- Reduction in amount of time to process girl and volunteer transactions at the shop

2005
Implementation of E-Council
GOALS:
- Provide access to girl scouting information online
- Secure data
- Regular data back ups and data storage
- Disaster data recovery
- Streamline processes internally for managing registrations

2006
Updating donor management software and replacement of four workstations
GOALS:
- Measuring outcomes and results of volunteers philanthropy
- Tracking donor records and trends
- Impact the bottom line

Planned Parenthood Centers of West Michigan

2000
Wide Area Network
GOALS:
- Increase efficiency and productivity between clinics and staff
- Remove clerical work from medical staff
- Enhance communication
2001
Continued WAN roll out
GOALS:
• Increase staff efficiency

2002
Continued WAN roll out and conversion of clinic systems
GOALS:
• Improve operational efficiency
• Enhance communications
• Conversion of clinic systems

2003
Purchase LCD projector and two fax machines. Possibly, teleconference phone
GOALS:
• Providing staff and board training
• Compliance with HIPAA laws
• Enhanced Connectivity within the agency

2004
Hardware for new phone system and voice mail software upgrade
GOALS:
• Remove barriers to outside callers who would like to leave voice mail message
• Allow for teleconference calling

2005
Staff assumes oversight and support duties for the WAN. Move WAN servers from ISG to PPCWM
GOALS:
• Reduce support expenses

2006
Purchasing new server/back up equipment, flat panel monitors and upgrading software
GOALS:
• Increase operational efficiency
• Minimize costs
• Secure technology operations

WITNESS

2000
Updating office hardware, web site development and software
GOALS:
• Replace outdated computers
• Access Internet on Holland office
• Same software on machines in both offices
• Promote organization through a web site

2001
Purchase laptop, palm pilot, DSL Connection, software and technology support
GOALS:
•

2002
Database development, printer, scanner, digital camera and software
GOALS:
• Development of database for donor and participant management.
• Replace nonfunctioning printer
• Scanner & Digital camera for publicity and marketing support
• Upgrade web site software
2003
Laptop, CD burner, XP upgrade, Flash software, Dreamweaver/Flash training, Web based liturgy free resource
GOALS:
• CD used for back up
• Free, searchable web resource for prayers, confessions and inclusive lyrics
• New Laptop
• Increase visibility of organization

2004
Camcorder, second desktop computer, laser printer, PDA with email and phone and second URL for web site
GOALS:
• Create educational products to be sold
• Add volunteer help

2005
Upgrade RAM for machines, CD Burners, new hard drive, new laptop software upgrade, computer training and technology support services
GOALS:
• Increased productivity for staff and volunteers
• Technology support from outside vendor

2006
Web site, laptop and desktop computer purchases
GOALS:
• Building identity in West Michigan
• Virtual place where women of faith can come together and form communities

Women’s Resource Center

2000
Upgrade existing machines with memory and hard drives, emails for each staff, web site marketing
GOALS:
• Increased effectiveness and efficiency of internal operations
• Improve access to agency information
• Increased and improved internal communication
• Increase community awareness of agency through domain name

2001
Implement technology plan
GOALS:
• Client server network installation
• Systematic back up of data
• Collection of email addresses
• Evaluation of client management database
• Replace computers regularly

2002
Purchase computers and printer, pay for DSL and technology support
GOALS:
• Purchase and set up three new computers
• Technology support
• DSL connectivity
• Printer
2003
*Purchase computers, contractor support and software*

**GOALS:**
- Purchase and set up two new computers
- Contractual service agreement
- Maintenance of web site
- Software purchases and upgrades
- Back up tapes and cleaning cartridges

2004
*Replace outdated donor management software, training on Outlook*

**GOALS:**
- Enhance fundraising efforts

2005
*Recreate client database, web site redesign, donor mgmt software fees, new computer, anti-virus software, digital camera, laser printer*

**GOALS:**
- Accurate and complete data on client demographics, service utilization and outcomes
- Ease in recording information
- Ease in generating reports
- Fundraising efforts
- Enhance career/employment development services
- Using photos of services in agency materials and web sites

2006
*Upgrade server, integrating financial and donor management software and software purchases*

**GOALS:**
- Improve efficiency of staff time in preparation of financial reports
- Cost savings related to credit card processing fees
- Long term compatibility between donor and financial software
- Remote access to organization’s network

Women's Resource Center of Northern Michigan

2000
*Design and maintenance of web site, add functionality to existing database, add additional email account, network consultation, upgrade computers, purchase digital camera, upgrade accounting system and purchase new laser printer*

**GOALS:**
- Sharing information
- Maintaining accurate client and membership data
- Maintaining web site in-house
- Easily obtain information/statistics required
- Produce most marketing materials in house
- Consistent computer systems using same software

2001
*Upgrade computers, web site maintenance training, Internet training, client management database review and networking Safe Home*

**GOALS:**
- Improve hardware and software capabilities
- Improve staff capabilities through training
- Efficient and effective use of the Internet
2002
Digital camera, keyboards, replace computers, replace printers, laptop computer, update virus protection, database and software systems updates and changes, employee management database, staff training and web site maintenance.
GOALS:
• In house publishing
• Enhance safety of work environment for staff
• Replace older equipment
• Enhance efficiency and accuracy of maintaining employee vacation, sick and personal time

2003
New phone system and network wiring and cabling for Safe Home facility
GOALS:
• Flexibility in answering phone
• Flexibility in phone coverage/messaging
• Achieve similar efficiencies found at admin offices when networked

2004
Networking Safe Home program with Admin Office
GOALS:

2005
New computers, one new printer and additional staff training
GOALS:

2006
New phone system for admin offices and new accounting software
GOALS:

YWCA

2000
Purchase 6 computers for staff working in the Children’s Sexual Abuse Treatment Program
GOALS:
• Streamlining report formats, forms and ease records
• Create documents efficiently
• Reduce amount of staff time needed to reproduce hand-written documents
• Facilitate the collection of data and ability to perform analysis on data
• Store case records on CD-ROM instead of hard copy
• Elimination of hard copy files, decrease storage space and increased security

2001
Server upgrade and anti-virus software purchase
GOALS:
• Stabilize network operations
• Efficient maintenance of a virus free network

2002
Purchase computer, replace network switches and software upgrades
GOALS:
• Computer users using the same software version
• Improve speed of network
• Replacing outdated computer

2003
BizStream Portal
GOALS:
• Improve efficiency and productivity of the counseling center

2004
Annual broadband connection cost, improvement on BizStream Portal
GOALS:
• Constant and efficient connection of wide area network
• Ease of use of BizStream Portal
2005

*Virus protection software renewal and replace 13 computers*

**GOALS:**
- Help with long term technology plan

2006

*Replace desktop computers and ISP hosting support*

**GOALS:**
- Outsource email
- Outsource web site maintenance
- Continued help with action plan to replace machines
Appendix E - Nokomis Request for Proposal

As part of our ongoing effort to encourage enhanced technology among our partners, Nokomis Foundation is again providing $65,000 for technology-related capacity building grants for Women’s Technology Consortium members only. Application information and requirements for the technology grants are as follows:

Basic Information
We ask that applicants keep the following information in mind:

- Women’s Technology Consortium members vary significantly in terms of organizational size, budget, location, current technological status, etc. For this reason, Nokomis Foundation will not be setting a maximum or minimum request amount for applicants. We anticipate, however, that average grant requests will fall in the $4,000 - $6,000 range.
- Technology requests must be consistent with overall organizational plans.

What counts as a “Technology-Related Request”?
- Contract services related to technology
- Database or website design
- Expanded e-mail and Internet access
- Hardware, including printers and other peripheral equipment
- Networking
- Software
- Telephone systems
- Training
- Other (contact DeDe with questions)

What doesn’t count as a “Technology-Related Request”?
- Administrative expenses related to technology
- Indirect costs and overhead
- Office equipment like copy machines or fax machines (unless part of an all-in-one printer)
- Staff positions, staff time

Application Procedure
- Provide complete answers to each question on the attached grant application. If you would like to receive the application via e-mail, send request to desque@nokomisfoundation.org.
- Submit ALL requested attachments. Your application will not be considered complete without the attachments.
- Deliver the completed application to Nokomis Foundation on or before Friday, November 30, 2007 at 12:00 PM. You may respond by e-mail, fax, regular mail, or personal delivery.
- Nokomis Foundation will notify all applicants of funding decisions on or before Monday, December 10, 2007.
Nokomis Foundation
Technology Grant Application

Instructions:

- Please answer all questions completely.
- You do not have to answer the questions on this form.

1) Organization and Contact Information:
   a) Contact name
   b) Mailing address
   c) Phone/Fax/E-mail
   d) Organization Mission
   e) Total organizational budget for the current fiscal year

2) Of your total budget for the current fiscal year, how much is budgeted for:
   a) Hardware purchases
   b) Software purchases
   c) Training (technology-related)
   d) Internet/email services
   e) Technology-related contract services
   f) In-kind services for technology
   g) Other technology-related expenses

3) What is the total dollar amount of your organization's technology needs through year-end 2008? What is the dollar amount of this technology request and how does this technology addition fit with the long-term plans of your organization? Once completed, how will you evaluate the effectiveness of the requested technology addition or enhancement?

4) What will your organization do with the technology grant and who will benefit? Of the current technology needs in your organization, why this particular focus for the grant? Please be specific.

5) Nokomis Foundation asks all technology grant recipients remain actively involved with the Women's Technology Consortium. How will your organization make that commitment?

**Required Attachments**

Please attach the following to your application. Applications will be considered complete ONLY if each question on the application is answered AND all requested attachments are included.

Attach:

- Annual organization budget
- Price quote for item(s)/service(s) requested in application, if applicable
- Organization's most current technology plan
Appendix F - HRRC Approval

February 5, 2008

Proposal No.: 08-128-H          Category: Exempt
Approval Date: February 1, 2008
Title: The Impact of Information Technology on Non-profit Organization

Dear Ashima,

Your proposed research project named above has been reviewed. It has been APPROVED as EXEMPT from the regulations by section 45 CFR 46.101(b)(2) of the Federal Register 46(16):8336, January 26, 1981. Please include your proposal number in all future correspondence. The first principal investigator will be sent all correspondence from the University unless otherwise requested.

Revisions: The HRRC must review and approve any change in protocol procedures involving human subjects, prior to the initiation of the change. To revise an approved protocol, including a protocol that was initially exempt from the federal regulations, send a written request along with both the original and revised protocols including the subject consent form, to the Chair of HRRC. When requesting approval of revisions both the project’s HRRC number and title must be referenced.

Problems/Changes: The HRRC must be informed promptly if either of the following arises during the course of your project. 1) Problems (unexpected side effects, complaints, etc.) involving the subjects. 2) Changes in the research environment or new information that indicates greater risk to the human subjects than existed when the protocol was previously reviewed and approved. 3) Changes in personnel listed on the initial protocol, e.g. principal investigator, co-investigator(s) or secondary personnel.

If I can be of further assistance, please contact me at (616) 331-3417, or via e-mail at reitemep@gvsu.edu. You can also contact the Graduate Assistant in the Research and Development Office at (616) 331-3197.

Sincerely,

Paul J. Reitemeier, Ph.D.
Human Research Review Committee Chair
301C DeVos Center
Grand Rapids, MI 49504
Phone: (616) 331-2281