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SIMO: MODELING AND MEASURING THE RELATIONSHIPS BETWEEN STRATEGY, IT/MISSION ALIGNMENT MATURITY AND NONPROFIT ORGANIZATIONAL OUTCOMES

by

Kelly Ann Trusty

A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Philosophy
School of Public Affairs and Administration
Western Michigan University
December 2013

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The purpose of this study was twofold: (1) to adapt Croteau and Bergeron’s (2001) Information Technology Trilogy model and Luftman’s (2000) Strategic Alignment Maturity Model to the nonprofit sector and (2) to combine the adapted models with Miles and Snow’s (1978) strategy typology model and organizational performance measures based on McLaughlin and Jordan’s (2010) logic model to test a proposed model that examines the relationships between strategy typology, IT alignment maturity and organizational performance in nonprofit organizations. A cross-sectional survey design was implemented. One thousand, eight hundred and six organizations that had received grants from Indiana Community Foundations between 2009 and 2012 were selected to participate. Of those who were sent an electronic link to or paper version of the questionnaire, 244 provided responses, comprising a 14.5% response rate. Substantial missing data indicated the use of missing values analysis (MVA) and multiple imputation (MI) to obtain an estimated data set with which to test the model. Principal components analysis (PCA) and partial least squares path modeling (PLS-PM) confirmed that specific factors influence IT alignment maturity, with qualifications, and that for each of the four distinct strategy typologies Prospector, Analyzer, Defender and Reactor, there is a
significantly different relationship between IT alignment maturity and organizational performance.
ACKNOWLEDGMENTS

I have a strip of paper taped to my computer monitor that reads “I like to work for people who are smarter than I am and have impeccable integrity.” I don’t know why I was reading an article about Holden Thorp, former president of UNC, or Joseph Templeton, the UNC faculty member who made this assertion and followed it with, “And I love coming to work for Holden Thorp.” I can only surmise that I was taking a break from my research, procrastinating, scanning faculty jobs in the Chronicle. In any case, the statement spoke to me, it crystallized what I want to do when I grow up, when I ‘arrive’, actually when I get up every morning. Spend my time with just such a group of people, which includes everyone I am about to list. You have inspired this work.

From the first day I visited Western Michigan University for my first advising appointment with Dr. Matthew Mingus, I knew that he was one of those people. Although I’ve never had the opportunity to work with him, his passion for his work of serving the common good has inspired me to the same. Likewise, Dr. Barbara Liggett, my teacher, boss, leadership mentor and tireless cheerleader has kept me moving toward the goal. It is an honor and a pleasure to learn and work with you. Dr. Melisa Beeson has been a tremendous role model who seems to flawlessly juggle being a great mom, an encouraging colleague and an inspiring teacher. I have so appreciated being challenged by Dr. Angie Eikenberry’s thought provoking questions, as well as energized by her presentations and articles. I hope someday to be such a great thinker and doer. Dr. Ed Leonard, my friend, my colleague, and now my co-author, thank you, and thank you
Ginger Leonard, for opportunities, encouragement, introducing me to the most amazing beach on the planet, and for making me just get it DONE. My family has thoroughly enjoyed becoming “one of the family”. Dr. Gary Miron, your expert guidance in survey design was invaluable. Dr. Udaya Wagle, thank you for helping me understand and love the policy process, and Dr. Robert Peters, if you hadn’t told the class that “50% of you won’t make it through the program”, I would not be typing this acknowledgement. Thank you for the challenge. Each one of you has a place forever on the top of my monitor, “people who are smarter than I am and have impeccable integrity”. Thank you for being with me on the journey. I hope to make you proud.

To my dear friends and colleagues K.P. Pelleran, Sylvia Juta, Bud Norman, and Khandaker (Nayeem) Islam, each of you has been a blessing to me as we have worked together to achieve our own personal milestones. One of these days we all need to get together, have dessert and Bud and I can give a presentation on how to stalk people at the mall.

Author and NPO tech guru Steve Heye lit the match to start the fire for this project when he, Peter Campbell and John Merritt translated successful IT/business alignment strategies into the Five Stages of Managing Technology, which was the foundation and the first chapter in Holly Ross, Katrin Verclas and Alison Levine’s Managing Technology to Meet Your Mission (2009). The book in my hand resulted in an AHA moment and a few rounds of an NP tech version of the game “Six degrees from
Kevin Bacon” which then presented me with the honor of having intriguing, authentic conversations with Steve, Holly, Peter and John about where to go with the investigation. Steve and Holly provided fantastic feedback on the initial iteration of the SIMO questionnaire and Steve and his CEO tried it out for size at the Cara Project in Chicago. Without this amazing group of NP tech pioneers, there would be no SIMO. My heartfelt appreciation goes to each of you and the Nonprofit Technology Network (NTEN.org) for your investment of time and expertise in this project and for the work you do every day to help all NPOs manage technology to meet their missions.

Dr. Jerry Luftman is the business-sector pioneer who created the first IT/business alignment maturity model, SAMM. He graciously discussed the project with me agreed to allow me to use and adapt SAMM for the nonprofit sector as the foundation for the SIMO model. Thank you, twice, Dr. Luftman!

My professional journey in academia has already begun, a wonderful learning experience made possible by Dr. Earl Brooks, Mike Bock and David Wood at Trine University. Your support of new academic programs I’ve been blessed to have had the opportunity to lead, the opportunities I have had to learn and grow as a faculty member, and your encouragement of my scholarship and pursuit of the Ph.D. have been overwhelming. I also must thank the Trine Engineers – Dr. V.K. Sharma, Dr. Darryl Webber, Dr. Allen Hersel, Dr. Brett Batson, Dr. Tim Tyler, Dr. Will Lindquist, Dr. Brian Thompson, Dr. Vukica Jovanovic, Joe Thompson and Kerri Dowell for your encouraging words, and for keeping Tom sane as the spouse of a doctoral student. Many thanks!
I’m not quite sure how my family has put up with me for the past two years, and I don’t know how I can thank you except to say I love you, and I appreciate your patience and perseverance as you have all stuck it out with me. A special shout-out to Blake Neville Trusty, who taught me algebra so I could get through statistics, then masterminded the strategy typology out of the model but still kept it in. You’re amazing. Evan Richard Trusty, it was awesome that you came into my office with funny jokes, cool pictures and stories to help me forget how miserable it is to write a dissertation. I’m also so thankful that we talked ourselves into the kayaks. I will always remember our trip to Big Otter, which was way more fun than working. Tom, you knew I had to get it done, and you did what you had to do – love me through it. Thank you. I love you. (They really are elephants.) Miim, we did it. Hallelujah! Gaag, I promise I’ll play all next summer. I love you guys. You’re amazing neighbors, parents and friends. Thank you for helping, and for the cookies.

To Jesus Christ, my Lord and Savior, I don’t know what you have in store for me, but I love you, I trust you, and I am excited about what comes next. Thank you for always holding my hand.

Kelly Ann Trusty
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Imagine the excitement and optimism nonprofit board or staff might feel when promised the solutions, power, connectedness, exposure, innovation, and efficiency offered by the latest hardware, software, applications, and other technologies advertised by the corporate taglines listed above. Such tools afford organizations and individuals the opportunity to “enlarge their efforts, quickly, easily, and inexpensively” (Kanter & Fine, 2010, p. 3), which is a valuable prospect to thousands of small nonprofit organizations operating across the U.S. and the world. With current technology, a food pantry on a shoestring budget can use Facebook to engage its entire community in the U.S. Postal Service’s annual “Stamp Out Hunger” food drive to stock the shelves
A group of teen activists can dream up and share a video that goes viral on YouTube, exposing the manipulative marketing tactics tobacco companies use to get youth to buy deadly products (rchfm, 2011), and an advocacy group based in San Francisco can ignite worldwide political action through a single video, “Kony 2012”, to bring down a Ugandan war criminal (Guo & Saxton, 2013, Wong, 2012). A crisis pregnancy center can use Survey Monkey to devise a way to quickly measure program impact and use the data to support new funding proposals (Compassion Pregnancy Center of Northeast Indiana, 2009). A drug prevention coalition can prevent prescription drug abuse by sending a Twitter invite to its entire community to drop off unused medications at secure locations in police stations (A.H.E.A.D. Coalition, 2012).

Nonprofit organizations (NPOs) undertake such technology-rich strategies every day to achieve outcomes and further their social missions. Some NPOs succeed overwhelmingly in these efforts, using Internet-based and other technologies to establish what Cuesta refers to as a mission-delivery engine, a comprehensive presence that actively engages stakeholders and creates public value while promoting an “intuitive understanding of what the organization is about” (2011, para. 2). Other NPOs fall frustratingly short of this goal, working to keep their workstations from failing, flashing the ‘blue screen of death’. Still others suffer from an affliction journalist William Powers describes as “digital maximalism” (2010, p. 4), in which staff, volunteers, and even clients invest substantial time and resources on technology with the result of having to splinter that time between using text messages, e-mails, blogs, Facebook, answering cell-
phone calls and finding opportunities to simply sit down and talk about creating positive change.

This tremendous range of effectiveness in NPOs’ technology adoption and use (Hoehling, 2012a, 2012b; Bernard & Pukstas, 2006; Bernard & Pukstas, 2009; Levine, 2008) can be found across large cities and small towns, and even within individual service disciplines. How can this be? According to technology professionals serving the nonprofit sector, the organizations that are most successful at incorporating technology into their work, in ways that increase their achievement of goals and outcomes, practice IT alignment, through which they deliberately plan and use information technology (IT) strategies and tools in ways that support and augment their organizational missions (Heye, 2009, Microsoft, 2010).

Some NPOs instinctively achieve strategic IT alignment, and some attend conferences or workshops to learn how to incorporate technology in ways that improve the important work they do, while others find themselves endlessly fighting with donated doorstop computers to accomplish basic tasks. Still others are entranced by every new application, frequently shifting their organizational focus and resources to figure out how to make the latest ‘app’ useful at the expense of other, mission-focused efforts. These scenarios, aggregated from my 15 years of experience leading and consulting in the nonprofit sector, illustrate the disparity in the levels of sophistication at which NPOs adopt, use, and align IT in accordance with their missions. This disparity is mirrored in the findings of annual surveys of IT staffing and use done by the Nonprofit Technology Network (NTEN) (Hoehling, 2012a, 2012b; Bernard & Pukstas, 2010; Bernard & Pukstas, 2009; Levine, 2008).
As this range of successful and not-so-successful NPO technology experiences is considered, it is important to note that IT alignment is not the practice of downloading and incorporating every new-fangled tool into the work we do. On the contrary, it can be more accurately portrayed as deciding what not to use. In *Hamlet’s Blackberry*, Powers (2010) chronicles and applauds ‘new’ technology that has ‘stuck’ through the ages, such as scrolls to replace speeches for Plato and the printing press in Gutenberg’s time. Yet he warns that those innovations, like ours today, inserted new challenges including busyness, information overload, and feeling a loss of control, as technology brought individuals and ideas closer together, more often. He asserts that all people must be strategic and discriminating in choosing the most effective uses for new technology in order to maximize their value, and we must balance that value with the need for time away from the screen. A full decade prior, Kanter, already well-acquainted with the challenges of becoming entrenched in the Digital Age, asserts, “Depending on the angle, [technology] is both friend and foe, tool and driver, death threat and fountain of youth” (2001, p. 40), a sentiment that is clearly illuminated both personally and professionally, as we log on to our lives each day. Nonprofit IT alignment, under such objective consideration, is the process of considering what an organization hopes to achieve (its mission), and being strategic and deliberate in choosing just the technology that will help achieve it. Maney provides the opportunity for a chuckle when he envisioned this process operationalized to its extreme:

Every Girl Scout troop once had its territory for selling Girl Scout cookies, but enterprising troops with Internet merit badges who offer cookies over
the Web could ‘blow a hole the size of Greenland in that setup’. (in Kanter, 2001, p. 37)

If a nonprofit organization’s mission entails blowing such a hole through an existing social issue or problem, it is likely technology can assist, provided the technology is aligned with the right target.

An Overview of Technology in Nonprofit Organizations

A variety of factors contribute to NPOs’ adoption and use of technology: availability of current technology and technical assistance, communication between IT and other staff, donor discretion, technology expertise, flexible and sustainable funding, collaboration among agencies, leadership, mission and goals, organizational culture, organizational size, stakeholder pressure, and staff skills and workload (Clerkin & Gronbjerg, 2007; Heye, 2009; Kanter & Fine, 2010; Manzo & Pitkin, 2007; McNutt, 2007; McNutt & Boland, 1999; Silverman and Rafter, 2007; Wolpert & Seley, 2007). However, no formal investigations to date empirically describe how these factors contribute to IT alignment in NPOs, whether IT alignment does, in fact, contribute to NPOs’ increased achievement of organizational outcomes and, if so, to what extent.

The Origins of IT Alignment in the Business Sector

The practice of IT alignment has its roots in the business sector. Previous investigations have established a collection of theoretical models that describe the concept of IT alignment, analyze antecedent factors to alignment, measure businesses’ level of alignment maturity, and suggest relationships between alignment and business
outcomes (Chan & Huff, 1992; Henderson & Venkatraman, 1993; Luftman, 2000; Luftman, Lewis & Oldach, 1993; Miles & Snow, 1978; Orlikowski, 1996; Reich & Benbasat, 1996, 2000; Sabherwal & Kirs, 1994). A majority of the models consider Henderson & Venkatramann’s (1993) conceptual Strategic Alignment Model (SAM) or use it as the foundation for their investigations.

Luftman, Papp and Brier (1999) used this model to identify specific enablers and inhibitors to alignment, then Luftman (2000) constructed a framework of six criteria for alignment and a corresponding instrument to measure levels of the criteria. The Strategic Alignment Maturity Model (SAMM) has since been validated (Sledgianowski, 2004, Sledgianowski, Luftman, & Reilly, 2006). SAMM has been adapted for commercial use by IT service management consulting firms Forrester Research, Inc. (McNeill, Mendel, Garbani, Pohlmann & LeQuoc, 2005) and Gartner, Inc. (Newman & Logan, 2008), and used by thousands of business and IT executives to assess and increase their level of business-IT alignment maturity (Luftman, 2011).

At present, SAMM is touted as the most widely-used IT alignment maturity assessment model in the business sector (Chan 2007, Gutierrez, Orozco, & Serrano, 2009; Evers, 2010), yet competing models raise serious questions about whether SAMM and its conceptual model, SAM, address all of the factors necessary to measure, predict, and prescribe steps to increase IT alignment, both in business and other sectors. Burn and Szeto (2000) question its applicability in all industries, depending upon their level of IT intensity. Campbell suggests that while it can identify and prioritize variables, it ignores context and complexity of organizations (2008, p. 167). The factor of organizational size and its relationship to the presence of dedicated IT personnel is also not considered in
Luftman’s model, according to Gutierrez et al. (2009). This issue is of considerable concern in the present study because 62% of nonprofits that exist in the sample under investigation, as well as in the U.S. population of nonprofits are considered small organizations, smaller even than the criteria of 250 or less employees described by Zhang, Gutierrez & Mathieson (2010). Many of them do not have an IT function or even an ‘IT guy or gal’, a characteristic which will be discussed in more detail in future sections.

Parallel to the conceptualization of SAMM, several investigations identified additional factors that influence IT alignment. Sabherwal and Chan (2001), Tavakolian (1989), and Tan (1997) contend that Miles and Snow’s (1978) conceptual model of business strategy typologies is indicative of specific IT alignment strategies and patterns. Reich and Benbasat (1996, 2000) championed the influence of social dimensions of alignment, which they assert are crucial to establishing commitment and shared understandings between business strategies and IT strategies. Croteau and Bergeron (2001) claim that business strategy and IT alignment assert equal influences on organizational outcomes. These additional perspectives encourage consideration of a number of ways IT alignment can occur in organizations across different sectors, as well as within the same sector.

Since 1995, business-IT alignment has emerged as a top priority of senior technology executives on the annual Society of Information Management survey (Stephani, 2010), and for good reason. Empirical evidence garnered from multiple iterations of Luftman’s SAMM instrument applied in authentic business settings indicates that when businesses align IT with business strategies, whereby they plan and implement
technology initiatives as part of their overall business strategy, they achieve greater outcomes in terms of profits and revenues (Byrd, Lewis, & Bryan, 2006; Cragg, King, & Hussin, 2002), productivity and enterprise value (Nash, 2009), return on investments, assets, equity, and human capital (Luftman & Kempaiah, 2007; Kempaiah, 2008). Considering this evidence of the positive influence of IT alignment on outcomes, it intuitively makes sense for any organization, in any sector, to work toward achieving alignment between its IT strategy and its overall organizational strategy.

IT Alignment in the Nonprofit Sector

Supporting this assumption of utility, a few investigations have attempted to implement the SAMM assessment and other IT alignment models in nonprofit settings, primarily in the fields of healthcare (Evers, 2010) and postsecondary education (Sabherwal & Kirs, 1994; Chan, Sabherwal, & Thatcher, 2006; Flores, Lopez, Vargas, & Rusu, 2008). All of these investigations provide little new knowledge about IT alignment in nonprofit settings beyond the assertion that further investigation is needed to clearly determine whether business-IT alignment models can be appropriately applied in other sectors.

The nonprofit sector has also investigated alignment to a limited extent at the practitioner level, and three rudimentary models have been proposed that explain IT alignment in NPOs and factors that influence alignment maturity (Heye, 2009; Microsoft, 2010, NPower 2011). These conceptual models, one of which shares many similarities with SAMM (Heye, 2009), have yet to be translated to empirical models with distinct, measurable variables that can be tested in the field.
Efforts to Translate Business-IT Alignment Models to NPOs

Translation of business-IT alignment models to the nonprofit sector faces two challenges. First, distinct disparities exist between the character and constituencies of business and nonprofit sectors, most notably the nature of organizational outcomes and the ways outcomes are measured, differences in internal and external stakeholders, organizational culture, the ways in which risk is addressed, and the means through which NPOs and businesses sustain themselves and their organizations (Fine, 2006; Zhang, Gutierrez, & Mathieson, 2010). Together the differences render direct transfer of business-IT alignment variables inappropriate. Second, nonprofit practitioners tend to focus knowledge generation efforts on addressing specific, local problems that need immediate solutions rather than investing time and talent in building and testing generalizable theory (Salipante & Aram, 2003). These limitations result in skipping an important step of establishing a sound, validated theoretical model that will appropriately inform sector-wide IT alignment practice.

When appraised of this missing link, nonprofit technology experts acknowledged its absence wholeheartedly. Steve Heye, author of “Mission First: Achieving IT Alignment” (2009), Peter Campbell, author of “How to Decide: IT Planning and Prioritizing” (2009) and Holly Ross, Executive Director of the Nonprofit Technology Network (NTEN), welcomed and agreed to support the establishment of a model that will help nonprofit organizations address their unique characteristics as they support NPOs in their ongoing endeavors to align technology in ways that will help them meet their social missions (S. Heye personal communication, October 13, 2010; P. Campbell personal communication, November 29, 2010; H. Ross personal communication February 11,
2011). Their overwhelmingly supportive responses to the question, “Can we make and test a theoretical model to measure IT alignment in nonprofits and help them mature in their alignment” were the spark and continue to be the fuel for this investigation.

Statement of the Problem

The problem addressed in this study is the lack of a theoretical model of the relationships between strategy typology, IT alignment and organizational performance that accurately describes and informs the process of IT alignment as it occurs in nonprofit organizations. Further, without a theoretical model that fits the character of NPOs, it is impossible to measure their level of IT alignment in terms of the factors that enable and inhibit alignment. Without a valid measurement tool, no empirical baseline exists from which nonprofits can take specific steps to increase their IT alignment maturity in order to improve their efficiency and effectiveness as it is demonstrated by the achievement of mission-focused outcomes.

Purpose of the Study

The purpose of this study was to address the inquiry above, posed by nonprofit technology practitioners, but even more explicitly to answer the question, “How do NPOs adopt and use technology in ways that make a measurable difference in their achievement of outcomes?” The present investigation explains relationships found in nonprofit organizations between the strategic and organizational factors that enable and inhibit IT
alignment, the planning and use of information technology strategies and tools in ways that support and augment organizational strategies, and describe the extent to which performance outcomes are influenced by those relationships. Relationships identified and validated through this investigation defined a new theoretical model to explain the process and outcomes of IT alignment in NPOs. This model, coined “SIMO” to represent its main components, strategy, IT, mission and outcomes, expands upon achievements of the business sector by adapting and integrating existing business-sector strategy typology and IT alignment models with a nonprofit performance outcome measurement model in light of organizational characteristics unique to the nonprofit sector. Beyond the scope of the present study, but significant in establishing the value of the work, the validated model has the potential to be used by providers of nonprofit technical assistance to help nonprofits align technology with their mission. The data that emerged from this model and a corresponding practitioner assessment that will be developed in the future can be used to create, test, and widely disseminate an online assessment tool that can describe an individual NPO’s IT alignment maturity profile. The data that emerges from this capacity-building tool can be used to create a menu of prescriptive strategies and next steps an organization can take to increase their IT alignment maturity and consequent progress toward achieving mission-focused outcomes.

Research Questions

The discussion to this point, encompassing the background of the problem, statement of the problem, and the purpose of this study provokes five research questions:
1. What factors influence nonprofit organizations’ level of IT alignment maturity?

2. Is there a relationship between nonprofit organizations’ strategy typology and their level of IT alignment maturity?

3. Is there a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes?

4. Is there a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes?

5. Given a specific strategy typology, what is the relationship between IT alignment maturity and performance outcomes?

Assumptions

The assumptions of this study included the following:

1. That the models, methods and findings used previously to identify relationships between the variables were valid and reliable.

2. That the factors investigated in this study are not the only ones that each influence the other, however, they may increase understanding of the relationships between them.

3. That nonprofit organization representatives can identify a specific strategy typology that guides the organization’s work.

4. That nonprofit organization representatives participating in the study can accurately identify their organization’s present level of IT alignment factors.
5. That nonprofit organizations involved in the study have and can articulate results of a process for measuring organizational performance.

Significance of the Study

This research addressed the need to examine how existing IT alignment models transfer to non-business sectors, a need expressed by Chan et al. (2006) and Zhang, et al. (2010). Models that consider the interface of IT with NPO strategy, mission, and outcomes are of particular interest. Chan et al. (2006) and Farrell (2003) proposed that future investigation of IT alignment focus on the influence of organizations’ strategic orientation (typology), particularly in specific industries represented outside of the business sector. Chan et al. refrained from hypothesizing about an empirical connection between alignment and strategy because of the “paucity of prior literature concerning the nature of possible relationships between business strategies and alignment” (2006, p. 31), whereby clearly uncovering a gap that needs to be filled.

In addressing needs of the nonprofit sector, Ebrahim and Rangan (2010) encourage continued exploration of ways NPOs align their mission and strategy, while using performance measurement to support such alignment (2010). This charge is echoed by Zhang et al. (2010), who suggest framing investigations of the interface of mission and strategy within an IT context in order to understand how IT can help better serve constituents, in other words, how IT helps NPOs meet their mission. The need for further investigation of “meaningful and reliable comparative metrics” (Ebrahim and Rangin, 2010, p. 34) for rating and benchmarking NPO performance is a reiteration of the
same by Sawhill and Williamson (2001). Fulfilling the need for appropriate performance metrics can provide a means by which the impact of IT alignment on performance can be validly measured (Heye, 2009).

The influence of nonprofit organizational culture on IT alignment is also a predominant theme in the literature, in terms of the need for concise identification of cultural factors that impact the process and outcomes of NPO IT alignment (Farrell, 2003; Tallon & Kraemer, 2003; Van Der Zee & De Jong, 1999; & Zhang & Gutierrez, 2007). These investigations suggest that future research examine the impact of an altruistic, rather than profit-motivated, environment of NPOs on organizations’ receptivity to and engagement in IT alignment.

Considering these suggested directions for research, this investigation demonstrates ways in which understandings about the process of IT alignment in the business sector can be translated for use in the nonprofit sector. While positive relationships between IT alignment and outcomes are empirically demonstrated in the business sector, the influence of strategy type has yet to be fully established, and none of the relationships have been demonstrated empirically in the nonprofit sector. As suggested above, in order to demonstrate these relationships, it has become necessary to isolate and examine three elements as they manifest in NPOs: strategy typology, IT alignment maturity, and outcomes, which has taken place in this study.

From economic and service provision standpoints, the results of this investigation will provide data to technology producers and technical assistance providers to assist them in creating, marketing, and disseminating goods and services that will assist
nonprofit organizations in becoming more efficient, effective, and productive, a need which is illuminated by Zhang and Gutierrez (2007).

Organization of Dissertation

The remainder of this dissertation is organized into six chapters. Chapter II is organized into nine sections and affords a detailed review of the existing literature, beginning with a description of the scholarly research domains examined, followed by a description of the evolution of technology use by NPOs and factors that influence NPOs’ adoption and use of technology. IT alignment is then described from both business and nonprofit historical perspectives, followed by a summary of the concept of strategy typology and its role in driving alignment. Challenges in translating present business-IT alignment knowledge to the nonprofit sector are then described, and the chapter ends with a summary.

Chapter III describes the gap in the current knowledge base – the lack of a means to measure the relationships strategy typology, IT alignment, and organizational performance in the nonprofit sector, focusing specifically on the need for performance measurement metrics that can transfer across all types of NPOs.

Chapter IV introduces SIMO, an integrated model to identify and measure the relationships between strategy, IT, mission and outcomes, one which is based on existing business models of strategy typology, IT alignment, and performance outcomes and incorporates the logic model as a structure through which nonprofit performance is isolated and measured.
Chapter V describes and justifies the research design and methodology used in this study. The research design and target population are presented, strategies for tailored design are described, sampling strategy is explained, instrumentation is described and justified, data collection procedures are explained, and statistical analysis procedures are discussed.

Chapter VI presents the results of data analysis, and Chapter VII provides a discussion of the results, conclusions, limitations, and suggestions for further study.
CHAPTER II

LITERATURE REVIEW

Introduction

The literature review begins with a description of the nature of the research domains of interest for this study. Then, the evolution and landscape of technology use in the nonprofit sector is described as compiled during the preliminary phase of my research (Trusty, 2011). Factors identified as having influence on IT adoption and use in the nonprofit sector are then presented, followed by the illumination of factors that have been the subject of preliminary examination in terms of their influence on IT alignment in the nonprofit sector. A description of themes that frame existing business-IT alignment models follows. Next, I identify challenges the nonprofit sector faces in translating and applying existing IT alignment models. This discussion sets the stage for an extensive examination of the concept of outcomes as it currently is understood in the knowledge base. Together these ideas preface the presentation in Chapter 4 of a new theoretical model and assessment tool for measuring the relationships between strategy typology, IT alignment maturity, and outcomes in nonprofit organizations, created as a response to current needs and challenges established in the literature.
This investigation is built upon previous work in three distinct domains: IT alignment, nonprofit organizations’ technology use, and performance measurement in nonprofit organizations. IT alignment queries focused on the keywords *business-IT alignment, alignment maturity, IT alignment, and strategic IT alignment*. This search garnered over 1,800 articles, nearly all of which could be traced back to Henderson and Venkatraman’s Strategic Alignment Model (1993) (n=1,794), Reich and Benbasat’s social dimensions of alignment (1996, 2000) (n>585), and Luftman’s assessing business-IT alignment maturity (2000) (n=339).

The search for IT alignment literature in the nonprofit knowledge base using the keywords *nonprofit, technology, alignment, and IT* was less fruitful. Only two articles related directly to the present topic were widely cited, thus establishing Hackler and Saxton (2007) and Ross, Verclas and Levine (2009) as pioneers in this area. A variety of investigative avenues exist in terms of nonprofit technology use, and my focus in identifying supportive literature in this area was on the keywords *nonprofit, technology, and strategy*, which uncovered 186 relevant articles. Finally, a wealth of knowledge exists about current practices in nonprofit performance measurement, and those keywords plus technology comprised the search parameters for that aspect of this investigation, which illuminated foundational insights by Chinman, Imm and Wandersman (2004), Kanter (1994), Kaplan and Norton (2001) Hatry (2006), United Way (1996) and Wholey, Hatry and Newcomber (2010). Together these contributions provide insight into the extent of the knowledge base in these areas.
McNutt and Appenzeller (2004) describe three ages of the evolution of nonprofit technology use that have occurred over the past three decades: the Nacent Age, the Flowering Age, and the Institutional Age. While all sectors have experienced these ages, McNutt and Appenzeller specifically address ways in which nonprofits have modified their use of IT during each. Nonprofit technology use in the Nascent Age is characterized as having been ancillary to the employment of traditional social change strategies and included the use of static hardware, primitive internal networking and productivity software (i.e. word processing, databases for contact management, spreadsheets and accounting software for financial management, and desktop publishing tools) to support local and regional efforts. The Internet ushered in the Flowering Age, during which e-mail and web pages became the vehicle for advocacy campaigns in the nonprofit sector parallel to marketing and political campaigns in the private and government sector. The present Institutional Age is thus far characterized by the emergence of three elements, according to McNutt and Appenzeller (2004): new technologies, significantly changed strategies, and global scope (Trusty, 2011).

Technology has become an indispensable strategic tool for some nonprofits, while others are still lagging behind in embracing its potential. NTEN, a virtual training and technical assistance community comprised of 35,000 members that “aspires to a world where all nonprofit organizations skillfully and confidently use technology to meet community needs and fulfill their mission” (Nonprofit Technology Network, 2011), provides insight into NPO technology use through its annual survey of IT staffing and use by nonprofits. The survey results describe two distinct groups in terms of nonprofit technology use: leaders and stragglers. Nonprofit technology leaders are comfortable adopting emerging technologies and using them to become more productive in achieving their missions. In contrast, straggler nonprofits use technology at an average to low rate and lag behind in terms of technology adoption. Of 994 NPOs surveyed by NTEN in
2009, 65% were classified as stragglers, and 35% were considered leaders (Bernard & Pukstas, 2010, p.16). This portrait changed significantly in 2011, as only 5.3% of 975 respondents (2% response rate) rated themselves as stragglers and 14.8% considered themselves leaders (Hoehling, 2012a, p. 36). The report suggests that this change may be indicative of the explosion of technology options available for all nonprofits, giving all an opportunity to adopt *something*, while posing a challenge for leaders to stay on top of all of the tech tools and strategies being used in the sector. The findings of the NTEN surveys must be taken at face value, and caution must be taken to not extrapolate them to all nonprofits, as the survey respondents are members of NTEN, which means they have a distinct interest in improving their use of technology.

Waters (2007) analyzed the content of the websites of a stratified random sample of the top 400 philanthropic organizations listed by the *Chronicle of Philanthropy* to identify ways in which they used the Internet. He found that a majority of the organizations disseminated information, including their services, news, mission statements, and annual reports. A majority also encouraged 2-way communication by requesting patrons’ e-mail addresses and feedback, as well as accepted donations through their websites. Approximately one-third hosted online stores. Others use technology to extend their reach through advertising and advocacy efforts (McNutt & Boland, 1999, McNutt, 2007), civic engagement, networking, and relationship-building.

Trusty (2011) expanded the scope of Waters’ work in order to see if similar practices were used by nonprofits of all sizes, not just the top 400. She found in her content analysis of 567 Indiana NPOs with budgets between $0 and $44 million that 77% of them had websites, and although there was a significant relationship between
organizational size and the presence of a website ($r=2.39, p<.000$), more than 2/3 of all sizes incorporated the Internet into their work. Her investigation reinforced the findings of Waters (2007), McNutt (2007), and McNutt and Boland (1999), as she found that a majority of organizations examined used social media and other two-way communication tools, online fundraising, and disseminated information through the Internet. However, she also found that far more NPOs located in metropolitan areas (81%) had an Internet presence than those located in micropolitan (12%) and rural (7%) areas, which indicates a need not previously identified in the nonprofit sector overall.

These descriptions of increasingly widespread, although disparate, adoption of Internet-based technology align with earlier findings by Brainard and Brinkerhoff (2004), who assert that while some NPOs are maximizing their resources through the use of the Internet, others they surveyed do not take advantage of this low-cost resource. These findings also support evidence of a digital divide among NPOs described by Servon (2001) and identified by Schneider (2003) in her investigation of minority-serving nonprofits, in which she found many nonprofit agencies do not have the technology or skills to submit electronic proposals or adhere to online reporting requirements of funding agencies. Additionally, changes in technology use have taken place since Hackler and Saxton’s (2007) analysis of 2001 survey data collected by Gifts in Kind International, which indicates that many nonprofits see IT as simply a tool to accomplish administrative tasks, at least in some NPOs.

This wide variety of findings illuminates two issues: first, NPOs are using technology, but for a wide variety of purposes and at a wide range of levels. Second, while the nonprofit sector is beginning to embrace technology, it could benefit from tools
that help organizations incorporate the efficiency and effectiveness afforded by technology into their mission-focused work.

Factors that Influence NPOs’ IT Adoption and Use

Many factors shape NPOs’ technology decisions. NTEN engages in nonprofit sector survey research in order to provide organizations with real-time data they can use to make decisions about technology. The following section is a brief summary of current knowledge of how and why NPOs adopt and use technology, or face challenges in doing so. The summary uses a recent iteration of these survey findings (Bernard and Pukstas, 2010) as a structure through which to describe the knowledge base in this area, identifying specific factors that influence nonprofits’ IT adoption and use.

Organizational Size

The size of an organization matters, relative to IT use, in terms of organizational budget. Larger NPOs, with budgets over $1 million, tend to be more sophisticated in their IT use because they have discretionary funds to support staffing, equipment, and training (Bernard & Pukstas, 2010; Clerkin & Gronbjerg, 2007; McNutt, 2007; McNutt & Boland, 1999; Wolpert & Seeley, 2007). However, Hoehling (2012a) found that there was not a significant correlation between organization size and NPOs’ reported level of adoption and use, which led the author to suggest that even if an NPO has no control over its budget, it can control its technology decision-making strategy. Again, however, this
NTEN finding was derived from a group of NPOs whose organizational strategy includes a specific focus on improving their use of technology.

Staffing

In terms of staffing, while organizations with more staff tend to dedicate more effort toward implementing IT, most nonprofits cannot afford a full-time IT person and delegate IT responsibilities to whomever has the time or interest, regardless of their level of IT competency (Baruch & Ramalho, 2006; Clerkin & Gronbjerg, 2007; Manzo & Pitkin, 2007; Silverman & Rafter, 2007). In organizations that hold technology adoption and use as a high priority, the average number of technology staff is remaining constant, but the ratio of dedicated technology staff to overall organizational staff is increasing, from an average of 34 in 2009 (Bernard & Pukstas, 2010) to an average of 60 (Hoehling, 2012a), a trend which is unexplained at present, but is being monitored. In order to meet their technology needs, some NPOs outsource IT to consultants (Bernard & Pukstas, 2010) which according to Van Lier and Dohmen (2007), changes the landscape of IT management, thus impacting IT decision-making and, consequently, alignment.

Training and Technical Assistance

The level and availability of technology training for staff also influences IT adoption and use. Silverman and Rafter (2007) found that while NPOs often struggle in obtaining the technology tools they need, a greater challenge is building staff capacity to use new tools while expecting them to maintain their level of effort toward existing duties. This challenge is further clarified by Manzo and Pitkin (2007), who assert that
capacity-building is necessary at two levels for successful technology integration – management must know how to plan for technology implementation and include training as part of the process, and “accidental techie” staff must be provided with the training and support necessary to use the technology and navigate technological infrastructure (p.65). In their ongoing monitoring of staff technical training through NTEN annual surveys, Bernard and Pukstas (2010) and Hoehling (2012a) consistently find training to be the biggest challenge, both in the time and resources dedicated to training, and staff satisfaction with the level of training. They summarize the findings as, “employees who are well-trained and comfortable with technology are better prepared to meet an organization’s technology needs” (2010, p. 23).

Management Involvement

Pettigrew (1973) suggests it is critical to involve management in technology innovation decisions because they have political power to allocate resources and staff in ways that can lead to successful change or failure. Manzo and Pitkin (2007), Harrison and Murray (2007) and Zorn, Flanagin and Soham (2011) assert that senior management support is a strong factor in IT adoption and use, and in order to be effective advocates, managers must have a high level of knowledge in how to select and use appropriate technology. Findings of Hameed and Counsell’s (2012) meta-analysis of factors influencing IT adoption underscore the critical nature of CEOs’ involvement in technology decision-making in all sectors, describing their influence at multiple levels of the process:

In the initiation stage, managers’ help developing awareness among the organizational members, in the adoption-decision stage they are responsible for
allocating necessary resources and in the implementation stage they can create an environment for smooth integration into the organizational settings… Every adoption process is associated with uncertainty; however, a CEO with more positive attitude challenges these risks and continues to maintain their enthusiasm by committing increasing amounts of resources (para. 35).

Mission and Goals

If an organization’s mission or goals do not address technology or innovation, an organization is less likely to adopt technology or, at minimum, less likely to successfully implement IT tools and strategies (Clerkin & Gronbjerg, 2007; Fitch, 2007; Nunn, 2007; Silverman & Rafter, 2007).

Culture

The values, beliefs, and behaviors of an organization, its culture, is a powerful driver of change. Adopting and using technology is a significant change in organizations. A negative culture, in which fear of change, anxiety about new technology, and negative expectations about the changes exist, can be a significant barrier to nonprofit IT adoption and use (Harrison & Murray, 2007; Manzo & Pitkin, 2007). Similarly, resistance to change, unwillingness to take risks, and a propensity to hold on to tried and true practices, particularly in the case of older workers, can also be barriers (McNutt, 2007, Silverman & Rafter, 2007). Conversely, collaborative cultures and those that embrace risk and innovation encourage NPO IT adoption and use (Clerkin & Gronbjerg, 2007; Nunn, 2007).
Funding and Other Resources

The availability of resources to invest in technology was deliberately put near the end of this list simply because the claim, “we don’t have the money” is often the first reason assumed for nonprofit organizations’ resistance to anything. Only 27% of NTEN survey respondents were satisfied with budget allocations for technology, and less than half (48%) of NTEN respondents feel they have the IT tools, hardware and software to meet the needs of all staff (Bernard and Pukstas, 2010). However, even organizations that aren’t cash-strapped struggle with IT resources because many do not prioritize technology in terms of its share of the budget (Trusty, 2011). Government funding is, conversely, a factor that facilitates increased technology use because when the government mandates reporting and accountability tasks that require the use of computers and the Internet, they often supply resources to fulfill the tasks through grant line items or contracts (Clerkin & Gronbjerg, 2007; Manzo & Pitkin, 2007; Wolpert & Seeley, 2007; Zhang, Gutierrez, & Mathieson, 2010).

Stakeholder Influence

A stakeholder is defined by Freeman as “any group or individual who is affected by or can affect the achievement of an organization’s objectives” (1984, p. 5). External stakeholders, such as governmental funders described above, community leaders, and donors have the power to influence the use of funding for technology, as well as leverage their power to influence decisions to adopt and use certain technologies. Funder expectations drive IT adoption and use through the provision of restricted funds and, conversely, a lack of non-restricted donations (Clerkin & Gronbjerg, 2007; Hall, 2007;
Manzo & Pitkin, 2007; Wolpert & Seeley, 2007). Likewise, internal stakeholders, including the board, staff, volunteers and clients, have the power to champion or challenge decisions to adopt and use technology (Hameed & Counsell, 2012; O’Hanlon & Chang, 2007).

Strategic Planning and Alignment

The process of choosing technology that facilitates an organization’s mission may sound quite simple, but evidence from the nonprofit sector suggests that it is far from an easy task. However, in tech savvy NPOs, some progress is being made. According to NTEN Staffing surveys (Bernard & Pukstas, 2010; Hoehling, 2012a), only thirty-five percent were satisfied with the integration of IT with their strategic plans, in 2009 just over one-third had strategic IT plans, and two years later 55% had strategic IT plans. In the nonprofit sector overall, though, little is known about whether IT is aligned in a way that will help organizations achieve their missions (Pereira & Cullen, 2009, p. 1056). In summary, the literature tells us that many factors influence nonprofit IT adoption and use, and it is likely that these same factors influence the level of IT alignment in NPOs, a prediction that will be tested in this investigation.

Current Ideas about Nonprofit IT Alignment

Nonprofit technology practitioners believe that IT alignment can help nonprofits more effectively achieve their missions based on their own anecdotal evidence, as well as demonstrated impacts in the private sector. Investigations of effective use of IT by NPOs
frame the discussion of IT alignment. Effective use is defined by Gurstein (2003) as “the capacity and opportunity to successfully integrate [IT] into the accomplishment of self or collaboratively identified goals” (p. 8), which alludes to the concept of IT alignment. Harrison and Murray (2007) proceeded with this definition to create an [IT] effectiveness model which suggests that an organization’s experience with IT, participation in IT use, job stress, ease of use of IT and financial resources are variables that impact perceived benefits from technology, which can be translated to “effective use.” O’Hanlon and Chang (2007) describe factors that impact effective use through their Technology Adoption and Use Model, through which they explain that the external environment, pressure from donors and volunteers to use IT, and IT’s role in helping or inhibiting compatibility between clients and organizations all impact IT adoption and use. These models arrange combinations of the above-mentioned factors in ways that explain NPOs’ propensity to adopt and use IT, yet they do not directly address the process of integrating IT with organizations’ missions and goals in ways that will foster better achievement of organizational outcomes. McInerney (2007), Silverman, Rafter and Martinez (2007), and Hackler & Saxton (2007), however, insist that while effective technology use is important, connecting technology use with an organization’s mission, IT-mission alignment, in other words, is truly the ultimate objective.

Te’eni and Young (2003) and Manzo and Pitkin (2007) assert that integrating IT into the overall strategic planning process of nonprofits would result in increased richness, reach, affiliation, and effectiveness of organizations through improved, innovative information flow, provided that such integration is deliberate. Through their work with thousands of NPO staff across the U.S., technology consultants Heye (2009),
Merritt (personal communication, November 29, 2010), and Campbell (personal communication, November 29, 2010) have seen this type of deliberate integration here and there in their work, but they have deduced that, for the most part, the divide between tech leaders and stragglers still exists in the nonprofit sector because most NPOs view ICT tools as add-ons, point-of-purchase solutions, or office supplies that help get work done, but not necessarily as strategic tools that are critical to achieving organizational missions. They have come to accept the dichotomy in the present, but assert that certain strategies can help straggler NPOs on a broad scale cross the divide and align IT with their missions in ways that will increase their organizational. Interestingly, in the two years since these conversations, the growth of free or low-cost, accessible, user-friendly social media and cloud-based tools have created a significant bridge between the leaders and stragglers. NTEN’s 4th annual Nonprofit Social Network Benchmark Report (Nonprofit Technology Network, 2012) found that 98% of nonprofit respondents use Facebook, up 30% from 2011, Twitter use by nonprofits increased 81% between 2011 and 2012. These increases are attributed to nonprofits’ efforts to incorporate social media into their organizational strategy, make it a priority, and dedicate staff time to managing social network presence. These finding provide evidence for the claims above that strategy and staffing do impact technology use and adoption. But, again, the findings stop at activities and fail to consider whether technology impacts outcomes.

Attention to the concept of nonprofit IT alignment emerged in practice through YMCA of the USA (2007) and NTEN (Heye, 2009). In descriptions of their respective models, YMCA and Heye suggest that nonprofit IT use can be characterized at one of five levels of maturity:
• *Chaotic* – The organization is struggling to keep up with failing infrastructure, spending all of their time fixing old equipment

• *Reactive* – The organization has basic systems in place to keep workstations running and updated, immediate needs are budgeted, but no plan is in place for long-term growth.

• *Proactive* – The organization has a stable infrastructure, solid operations software, and a good set of policies and practices. Technology builds efficiencies, but isn’t used to strategically meet the mission of the organization. IT does not help with organizational planning.

• *Service* – The organization anticipates and meets the IT needs of staff, IT staff is involved in strategic planning processes in which IT is envisioned as helping internal and external functions.

• *Value* – IT is considered an investment in mission, a percentage of budget is dedicated to IT, existing technologies are evaluated for mission and revenue impact, and new technologies are explored for future use. IT systems provide critical metrics to the organization. (Heye, 2009, p. 11-12)

Heye (2009) describes the Five Stages of Managing Technology as a model that can be used by organizations to informally assess where they are in the evolutionary process and identify specific practices they can change to become more mature in their alignment between IT and organizational mission and goals. This model is an adaptation of two existing business models, Luftman’s SAMM (2000) and Gartner’s Enterprise Architecture Maturity Model (Schulman, 2002) that incorporate many of the same factors as SAMM. The main difference in Heye’s model is that the factors are described in language that is familiar in the nonprofit sector, as illustrated in Figure 1. Although this practitioner model has yet to be empirically tested, Heye believes that if appropriate metrics can be identified to measure whether higher levels of NPO IT alignment maturity result in greater mission and goal achievement, the model can be a viable tool for nonprofits wishing to improve their IT alignment (Heye, personal communication, November 29, 2010).
Microsoft’s (2010) Nonprofit IT Pyramid is a similar, yet more rudimentary framework to help nonprofit organizations understand how IT is typically adopted and used and how it can evolve in ways that can help NPOs better achieve their missions. The Nonprofit IT Pyramid is not designed to quantitatively diagnose organizations’ level of

![Diagram of the Nonprofit IT Pyramid](image)

IT alignment maturity, nor does it prescribe specific strategies organizations can use to evolve in their use of technology. Rather, it is a guide that suggests the order in which nonprofits should focus their efforts to bring IT into the organizational mix, as illustrated in Figure 2 below.

![Figure 2. The Nonprofit IT Pyramid: A Framework for IT Adoption and Innovation. From Demystifying IT adoption and innovation in the nonprofit sector (p. 2), by Microsoft Corporation, 2010, Redmond, WA: Microsoft Corporation. Copyright 2010 by Microsoft Corporation. Reprinted with permission.]

While the pyramid is a nice guide, it is just that, and it has the potential to frustrate organizations that might attempt to use it as a change model for two reasons. First, the statement is made in their literature, “It is no coincidence that Access to Stable and Secure Technologies is the foundation of our pyramid; it plays a very important role as a platform for additional technology adoption” (2010, p. 2). It is an unfortunate coincidence that 28% of the most tech-savvy nonprofits (Bernard & Pukstas, 2010, p.16), and likely a much higher percentage of all nonprofits, are not presently at the bottom level of the pyramid because they consider themselves lagging behind or in trouble in terms of their technology use. Further, asking these nonprofits to envision the small steps they can take to get to the next level is futile. If they knew the small steps they should take, they would already be there.
The most recently-released nonprofit IT alignment model is an iteration of Microsoft’s model presented by NPower, which is a consortium of nonprofit technical assistance providers funded in part by Microsoft that serves 13 metropolitan areas across the U.S. (NPower, 2011). The Nonprofit Technology Pyramid considers stragglers as it presents a broader foundation to its model depicting organizations that are “technology constrained,” thus considering the stragglers, as shown in Figure 3.


Again, the model is conceptual in nature and lacks a structure through which IT alignment maturity can be diagnosed and specific strategies prescribed for more sophisticated alignment.

In order for NPOs to fully benefit from the work that has been done in the sphere of IT alignment, these ideas must be transformed into quantitative models and validated tools to assess and direct improvement of organizations’ IT alignment. This has been done in the business sector, and has helped organizations achieve higher levels of alignment and greater organizational outcomes.
The Evolution of Business-IT Alignment Models

Organizations practice strategic IT alignment as they examine their organizational strategy (mission, vision, goals, and activities) and structure, choose technology initiatives and infrastructure that are best suited to their strategy, assess the effectiveness of these choices, then start the entire cycle again as the organization continues to change. The alignment process is complex. It involves making and evaluating ongoing, strategic decisions across multiple organizational levels throughout an organization’s environment (Miles & Snow, 1978). This complexity is evident in the myriad of models and frameworks that have been created over the past several decades to describe the alignment process, its antecedents, and outcomes.

The *Strategic Alignment Model* (SAM) (Henderson & Venkatraman, 1993) describes factors that influence IT alignment relative to four domains of strategy choice: business strategy, business infrastructure, IT strategy and IT infrastructure, and illuminates the role strategic fit and functional integration play in the alignment process. *Strategic alignment* is defined as an organization’s ability to create a strategic fit between its position in the product-market arena and the appropriate administrative structure to support its execution (p. 6). SAM posits that when organizations consider IT initiatives that will further their strategic direction, they must make decisions within four domains of strategic choice: the external domains of organizational strategy and IT strategy, and the internal domains of organizational infrastructure and IT infrastructure.

The concepts of strategic fit and functional integration were adopted by Luftman, Papp and Brier (1999) and Luftman (2000) as the foundation for alignment maturity.
criteria established by the Strategic Alignment Maturity Model (SAMM). According to SAMM, alignment maturity is the extent to which business and IT strategies and infrastructure functions are planned and integrated, based on a collection of internal and external factors. Luftman, Papp and Brier (1999) initiated their consideration of SAM as an appropriate model of business-IT alignment by using it as the basis for a survey that identified enablers and inhibitors of IT alignment. They elaborated upon SAM to include twelve components that define business-IT alignment, three in each of the domains described earlier by Henderson and Venkatraman (1993). The findings of this survey, implemented with 500 companies in 15 different industry sectors, provided the insight necessary to build an instrument with which organizations can assess their business-IT alignment maturity. The instrument combines the 12 original components into 6 criteria necessary for mature alignment:

- Communications – Effective exchange of ideas and clear understanding of what will ensure successful strategies (p. 14)
- Competency/value measurement – A balanced ‘dashboard’ that demonstrates the value of IT in terms of contribution to the business and clearly defines rewards and penalties for surpassing or missing objectives (p. 15)
- Governance – Ensuring that the appropriate business and IT participants formally discuss and review the priorities and allocation of IT resources, and that decision-making authority is clearly defined (p. 17)
- Partnership – The relationship between business and IT organizations…, the opportunity for [each] to have an equal role in defining business strategies…, sharing of risks and rewards of new initiatives…, and sharing of a clearly-defined vision (p. 17-18)
- Scope and architecture – The extent to which IT goes beyond the back office and front office of an organization, supports a flexible, transparent infrastructure, evaluates and applies emerging technologies, enable business processes and strategies, and provide customizable solutions (p. 19)
- Skills – All the human resource considerations for the organization, including training, salary, performance feedback, career opportunities, cultural and social environments (p. 20)
The most current iteration of the SAMM assessment survey (Luftman, 2011) uses 29 specific business characteristics and behaviors as variables, or factors that measure an organization’s level of alignment in each of the six criteria, as displayed in Table 1.

Table 1

**SAMM Alignment Criteria (Luftman, 2003)**

<table>
<thead>
<tr>
<th>SAMM Criteria</th>
<th>SAMM Factors</th>
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<td>Communication</td>
<td>Understanding of business by IT</td>
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<td>Understanding of IT by business</td>
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<td>Style and ease of communication access between business and IT</td>
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<td>Leveraging intellectual assets</td>
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<td>Competency/Value</td>
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<td>Link between IT and business metrics</td>
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<td>Service level agreements</td>
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<td>Benchmarking</td>
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<td>Formally assess IT investments</td>
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<td>Continuous improvement process</td>
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<td>Governance</td>
<td>Formal business strategy planning</td>
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<td>Formal IT strategy planning</td>
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<td>Organizational structure</td>
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<td>Reporting relationships</td>
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<td>How IT is budgeted</td>
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<td>Rationale for IT spending</td>
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<td>Senior level IT steering committee</td>
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<td>How projects are prioritized</td>
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<td>Partnership</td>
<td>Business perception of IT</td>
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<td>IT’s role in strategic business planning</td>
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<td>Shared risks and rewards</td>
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<td>Managing the IT-Business relationship</td>
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<td>Business sponsors/champions</td>
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<td>Technology Scope</td>
<td>Primary systems</td>
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<td>Standards</td>
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<td>Architectural integration</td>
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<td>How IT infrastructure is perceived</td>
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<td>Skills/Culture</td>
<td>Innovative, entrepreneurial environment</td>
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<td>Who makes key IT HR decisions</td>
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<td>Change readiness</td>
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<td>Career crossover opportunities</td>
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<td>Cross-functional training and job rotation</td>
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<td>Social interaction</td>
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<td>Attracting and retaining top talent</td>
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The five levels of business/IT alignment delineated in SAMM may look familiar, as they influenced the levels of alignment described earlier in Heye’s (2009) Five Stages of Managing Technology:

1. Initial/Ad Hoc Process: This is the lowest level of maturity; management practices and strategic IT choices to facilitate alignment do not exist or are ad hoc in nature.
2. Committed Process: Management practices and strategic IT choices to facilitate alignment exist at a low level in the organization.
3. Established, Focused Process: Management practices and strategic IT choices to facilitate alignment exist at a moderate level in the organization.
4. Improved/Managed Process: Management practices and strategic IT choices to facilitate alignment exist at a strong level in the organization.
5. Optimized Process: Management practices and strategic IT choices to facilitate alignment are fully integrated and coadaptive between the business and IT function. (Sledgianowski, Luftman, & Reilly, 2006, p. 19)

The above factors were first validated by Luftman (2000) through implementation of a SAMM assessment survey instrument with 25 Fortune 500 companies (p. 10). Sledgianowski, Luftman and Reilly (2006) established confirmatory factor reliability and validity of the maturity constructs through a pilot of the instrument with 23 business and IT executives, then full-scale application of the survey with 153 executives from eight organizations (p. 22). However, these investigations did not take place in a vacuum. While Luftman’s model has garnered over 250 independent inquiries of IT alignment to the present day using the SAMM instrument (Chan & Reich, 2007; Zhang, Gutierrez & Mathieson, 2010; Kempaiah, 2008; Nash, 2009; Khaiata & Zualkerman, 2009; Evers, 2010), others explored the concept from a variety of perspectives. Together, these studies
suggest nine themes that characterize understandings of IT alignment, which are described below.

Specific factors, or antecedents, have been identified through surveys, case studies, and interviews as having measurable influence on IT alignment (Luftman, Papp & Brier, 1999; Luftman, 2000, 2001; Raymond, Pare, & Bergeron, 1995; Sabherwal & Kirs 1994). Relationships within organizations also influence IT alignment. Sharing information, communicating, planning together, and celebrating success all require the development and nurturance of relationships within an organization, relationships which can enable greater alignment maturity (Bassellier & Benbasat, 2004; Bassellier, Benbasat & Reich, 2003; Campbell; 2008; Chan, Sabherwal & Thatcher, 2006; Kearns & Lederer, 2003; Luftman, Papp & Brier, 1999; Reich & Benbasat, 1996, 2000). Both formal and informal aspects of organizational culture can either enable or inhibit alignment (Campbell, Kay, &Avison; 2005; Chan, 2002; CIO Insight Staff, 2004; Sledgianowski & Luftman, 2005; Tallon & Kraemer, 2003). The adage ‘plan your work and work your plan’ is clearly communicated in the literature relative to IT alignment -- strategic planning is a necessary precursor to IT alignment (Chan, Sabherwal & Thatcher, 2005; Kearns & Lederer, 2003; Luftman, Papp & Brier, 1999; Reich & Benbasat, 1996, 2000; Sledgianowski & Luftman, 2005). Shared knowledge and skills between business staff and IT staff are critical to successful and sustained alignment (Bassellier, Benbasat & Reich; 2003; Luftman, 2000). Most often, a champion, either from the business side or the IT side of an organization, facilitates the alignment process (Cragg, King & Hussin, 2002; Kearns & Lederer, 2003, Luftman, 2003; Reich, & Benbasat, 2000). An organization’s strategy typology, described as either a Prospector, Analyzer, Defender,
or Reactor (Miles & Snow, 1978), influences its approach to and success in achieving and sustaining alignment (Chan, 2002; Chan & Huff, 1992; Chan, Sabherwal & Thatcher, 2006; Cragg, King & Hussin, 2002).

Although the positive aspects of IT alignment are touted in a majority of these investigations, alignment is not always an appropriate goal for organizations. In fact, it is possible to “overdo” alignment and cause an organization to get stuck in its strategic approach and become unresponsive to environmental changes necessary for sustainability (Chan & Huff, 1992; Chan, Sabherwal & Thatcher, 2006; Sabherwal & Chan, 2001; Street, 2006). Accordingly, it is important for this investigation and its practical applications to acknowledge this risk and proceed with the foundational advice that the IT alignment process must be dynamic and flexible (Henderson & Venkatraman, 1993; Miles & Snow, 1978; Orlikowski, 1996; Tallon & Kraemer, 2003).

Finally, while IT alignment in itself is a formidable organizational outcome (Reich & Benbasat, 2000; Byrd, Lewis & Bryan, 2006) successful IT alignment is a means to greater ends: improvement of effectiveness, efficiency, growth, and financial metrics. These themes integrate Luftman’s SAMM criteria and factors with similar and novel factors that have dominated the literature.

A vast collection of investigations identify specific performance outcomes that are improved as a result of aligning IT with business processes and strategies (Chan, Sabherwal & Thatcher, 2006; Cragg, King & Hussin, 2002; Cragg & Tordorova, 2005; Croteau & Bergeron, 2001; Kempaiah, 2008; Luftman & Kempaiah, 2007; Nash, 2009; Sabherwal & Chan, 2001). These outcomes are shared with a caveat provided by Soh and Marcus (1995) and reiterated in essence by Chan and Reich (2007), that “outcomes may
not occur even when conditions [like alignment] are present unless a particular ‘recipe’ involving external directional forces and probabilistic processes unfolds” (p. 31). Accordingly, the outcomes described assume that the factors previously described are present and take place as the process of alignment, performance outcomes that Soh and Markus (1995) generalize as primarily financial indicators such as return on investment, assets, and expense/income ratio.

Previous investigations have isolated and tested a broad collection of antecedents to business-IT alignment. As is the case with most theoretical models and constructs, no one model addresses all facets of the phenomenon of interest. Each investigation isolates specific factors of interest, and it is likely that no singular model has the ability to comprehensively assess IT alignment. However, all of them illuminate components of alignment that can and should be incorporated into a theoretical model and corresponding measurement instrument if there is hope of presenting data to organizations that can truly assist them in increasing their IT alignment in authentic settings.

SAMM (Luftman, 2011), although the most comprehensively tested, is not a perfect model for the purposes of this investigation. Its use in isolation ignores the additional factors mentioned above, the influence of business strategy typology, which is claimed to preclude alignment efforts, the direct relationship between alignment and organizational outcomes, and for the purposes of this investigation, the unique characteristics of nonprofit organizations. Further, it has four distinct limitations to its transferability. First, it provides indicators for future progress in alignment maturity, but its utility stops at the indicators. Data derived from the instrument suggests factors that organizations can change in order to increase their IT alignment maturity, but does not
provide specific guidance in how to change those factors beyond increasing their
individual levels of maturity.

Second, in all chronicles of its implementation in the business sector, greater IT
alignment maturity is claimed to result in increased or improved organizational outcomes,
but a majority of those outcomes are business-specific metrics, limited primarily to
standard economic and financial indicators, such as profit/loss and return on investment
(ROI). Use of SAMM to date exposes a gap in its utility in sectors and organizations in
which performance metrics depart from such indicators. The nonprofit sector is one such
sector in which performance is measured by far more than dollars. This disparity in
metrics between business and nonprofit sectors is likely a primary reason SAMM and IT
alignment as a strategic practice have been widely investigated in the business sector, yet
have only been explored by a handful of investigators in the nonprofit sector.

Third, SAMM, as well as all of the other models discussed, has been applied
nearly exclusively in the business sector, and consequently the terminology and construct
assumptions of these models render them inappropriate for wholesale adoption in a
nonprofit environment. For example, if SAMM was administered in a small nonprofit
organization, which describes the majority of NPOs, (Bernard & Pukstas, 2009, 2010;
Levine, 2008), it is unlikely that terms like “federated/hybrid IT function”, “activity-
based costing”, and “service level agreements” included in the questionnaire (Luftman,
2011) would hold meaning for NPO respondents. Also, the models assume that the IT
function is the responsibility of a full time employee or even department which, in small
nonprofits, is highly unlikely (Bernard & Pukstas, 2009, 2010; Levine, 2008). In order for
any of these models to be of value to NPOs, the language describing the factors would
need to be modified, which would prohibit any established validity from being
generalized to the nonprofit sector.

Fourth, it has been suggested that for-profit and non-profit organizations exist in
two different worlds in terms of their missions, goals and outcomes. For-profit
organizations, a term used interchangeably with the terms “business(es)” and “business
organization(s)” for the purposes of this investigation, maximize profit and wealth, while
nonprofits maximize social value and social welfare by changing individual and
community attitudes, beliefs, behaviors, and conditions (Baruch & Ramalho, 2006;
Costa, Ramus, & Andreaus, 2011; Hackler & Saxton, 2007; Moore, 2000; Sowa, Selden
& Sandfort, 2004). Fine describes this distinction quite clearly, “The commercial sector
provides a service on demand for the purpose of making money. Our beloved sector
serves hard-to-reach people with hard-to-solve problems, against great odds, for the
public good” (2006, p. 4). A perfect example of this difference is illustrated by
Crutchfield and Grant, who describe the “underwhelming” number of homes for low-
income families built by Habitat for Humanity, when compared to the number of low-
income housing communities built by commercial real estate developers. They assert that
Habitat’s impact moves far beyond bricks and sticks,

“Habitat doesn’t aspire merely to build houses for the poor, but rather to mobilize
communities to solve the problems of poverty housing. They inspire hundreds of
thousands of middle-class volunteers to help build Habitat houses – to change
how they think, how they act, and how they vote.” (2012, p. 101)

It is this distinction between the missions of private and nonprofit organizations that
necessitates a careful consideration of fit when proposing a model that measures and
encourages improvement of IT alignment in the nonprofit sector. Chan, Saberwal and Thatcher (2006) echo this sentiment with this assertion that IT alignment mechanisms vary by industry and business strategy. In brief, the above discussion provides an overarching view of thoughts on business-IT alignment to the present, and provides a means to determine how translation beyond the business sector might proceed.

Even with its limitations, it makes sense to consider SAMM as the starting point for adaptation to the nonprofit sector because it is the one that most comprehensively addresses the wide variety of factors that have been suggested. However, it can only be considered a starting point because, as was described previously, alignment does not happen in a vacuum, and it is not an end within itself. It has been posited that an organization’s propensity to align IT with its mission is driven by its strategic orientation (Sabherwal & Chan, 2001). Further, the ultimate purpose of IT/mission alignment is to increase an organization’s success in achieving its intended outcomes. Therefore, we must consider strategic orientation and outcomes as part of a larger equation in order to fully understand the potential benefits of IT alignment.

Thus, the next section will address strategic orientation, which is followed by a business-sector model that brings together strategic orientation; technology deployment, which shares many similarities with IT alignment; and organizational performance. This confluence of business sector models will be followed by a consideration of the differences between NPOs and for-profit organizations and how those differences could impact transfer of the models across the sectors. A key difference, measurement of outcomes, will then be addressed in-depth in Chapter III. In Chapter IV, these ideas will be brought together into a new theoretical model that can be applied in nonprofit settings.
Miles and Snow’s Business Strategy model (1978) explains the process of organizational adaptation and change as it is driven by the strategic choices that are made by decision-makers in organizations on a daily basis. According to Miles and Snow, “Organizations act to create their environment” (1978, p. 5), and over time these actions represent an ongoing adaptive cycle. They propose that these actions are determined by problems that arise and corresponding strategic choices that are made within an environment constrained by organizational structure and managers’ processes of managing people and tasks. The configuration of staff and volunteers, the organizational hierarchy (i.e. chain of command), the formality of policies and procedures, and the way decisions are made are all structures and processes that influence an organization’s strategic actions. More simply, ‘structure + process = strategy’. The strategic actions translate to stable patterns of behavior over time, thus becoming part of an organization’s character. The choice to align technology with an organization’s mission is an example of a strategic action, and how the organization goes about the alignment process often demonstrates its strategy typology.

The combination of these problems and strategy choices shape four distinct types of strategic behavior exhibited in most organizations, based on Miles and Snow’s observations over time (1978) and hundreds of related investigations over the past several decades. More recently, these behaviors were analyzed in the nonprofit context by Brown and Iverson (2004), who found, through their survey of 132 NPOs and interviews with 9 executives from NPOs that exemplified each strategy typology, that the characteristics of
each typology translated consistently from the business context in which the typologies were originally operationalized to the participant organizations. The four business strategy typologies have been applied extensively in empirical investigations with consistent findings over time in a variety of contexts (Brown & Iverson, 2004; James & Hatten, 1995; Sebaa, Wallace & Cornelius, 2010; Shortell & Zajac, 1990). This consistent transfer, from the business sector to a nonprofit context presents an opportunity to further investigate the fit of Miles and Snow’s model, in combination with SAMM, within the nonprofit sector. Each typology is described below based on Miles and Snow’s established definitions, augmented by Brown and Iverson’s findings.

**Defenders** have a narrow focus, a set service area, or they serve a specific client or need. They are the experts in their sector and generally do not seek out new problems to solve or partners with which to collaborate. They often have formal policies and procedures to guide their work. Their approach to decision-making is generally stable, fueled by staff ideas and approved and monitored by the board. Strategy choices focus on increasing the efficiency and effectiveness of the services they currently provide and, to a limited extent, pursuing innovations that will help improve service delivery. Defenders can be characterized as either the go-to organization for best practices if their services result in consistent, reliable, high-quality, mission-focused outcomes, or they might be the ‘old dog’ in a community that does what has always been done with little regard for environmental pressures or changes. Defenders view their mission as a strict boundary for service provision (Brown & Iverson, 2004; Miles & Snow, 1978).

**Prospectors** are always looking for new ways to meet emerging needs. Accordingly, they are always in search of the latest technology and processes to create
novel solutions. Prospectors are risk takers and often give up efficiency and overall
superiority in exchange for their position as first on the block. They continually scan the
community for opportunities to serve and respond quickly to funding and program
development opportunities. These organizations invest resources and establish extensive
partnerships to create, test, and offer new approaches. Board members, staff and
volunteers are dynamic in their roles, champions and innovators are celebrated,
committees are active, and service areas, policies and procedures are redefined as needed
to meet emerging needs. Prospectors consider their mission a ‘jumping off point’ from
which they should innovate and expand to meet a variety of needs (Brown & Iverson,
2004; Miles & Snow, 1978).

Analyzers exist in two domains: one that is stable and requires routine processes,
formalized structures, and efficient technology; and one that readily adapts to changes in
the community. The stable base often consists of a well-developed, yet dynamic strategic
plan, which provides fuel for controlled innovation. Analyzers engage in ongoing needs
assessment to keep their finger on the pulse of their community of stakeholders. When
they find opportunities to solve new problems, they do so with conservative, yet
progressive technology, structure and process choices. Staff and volunteers are often
specialized, and decisions are data-driven. Analyzers use their mission to drive a set of
limited, stable services yet they remain open to promising practices that might enable
them to better meet community needs (Brown & Iverson, 2004; Miles & Snow, 1978).

Reactors do not tend to maintain a specific niche or present innovative
approaches. Rather, these organizations respond to environmental demands by looking at
what other organizations are doing, filling gaps and eliminating duplicative services.
Environmental pressures tend to force disorganized choices in terms of who to serve, what to provide, what tools to use, and how to structure and process the work. Conserving resources and avoiding risk are often the focus, and the mission is flexible enough to adapt to a variety of needs and opportunities (Brown & Iverson, 2004; Miles & Snow, 1978).

As described above, the strategy typologies are the means by which organizations can be classified in terms of their general approach to planning, structuring their work, making decisions, and implementing processes. Considered through the lens of technology, strategy typology can be a critical driver of the structures and processes organizations choose as they adopt technology, use it, and align it with their missions. Croteau and Bergeron (2001) posit that strategy typology and technological deployment, defined in a way that closely mirrors Luftman’s (2000) and Heye’s (2009) description of IT alignment, together impact organizational performance. An examination of their model provides significant insight into this process.

The “Information Technology Trilogy” (Croteau & Bergeron, 2001) describes the relationships between business strategy, measured using Miles and Snow’s strategy typology; technological deployment, described as corresponding “to the way companies plan and manage information technology from its potential and effectiveness” (p. 79) and measured using seven components that are similar to Luftman’s six factors; and organizational performance, measured using financial and growth metrics (p. 81). Their model is shown in Figure 4 below:
Croteau and Bergeron posit that for a business with a given type of strategy, a specific profile of technological deployment can help the firm enhance its performance. Using a questionnaire to which 243 organizations responded (12.5% response rate), they found that prospector strategic activities were positively related to organizational performance, and reactor activities impede performance. They also found that prospectors have high levels of impact, technological architecture, and system performance evaluation, while analyzers have high levels of information system department impact, architecture scanning, and evaluation. Conversely, they found a negative relationship between defender activities and impact, architecture, scanning and evaluation, and no relationship between technological deployment and reactor activities. These findings allowed them to generalize two profiles of technological deployment, inward and outward, that reflected these relationship patterns. When they tested relationships between the profiles and organizational performance, they found that analyzer (outward)
and prospector (inward) profiles contribute to increased organizational performance (2001, pp. 91-93).

The methodology section will discuss approaches to identifying and measuring these four strategy archetypes and their relationships to IT alignment and describe ways in which Croteau and Bergeron’s model suggests the most appropriate approach to examining the relationships in the nonprofit sector. Later discussion also proposes a novel theoretical approach to incorporating three considerations of alignment - business strategy typology, factors influencing IT alignment maturity beyond just those measured by SAMM, and the measurement of outcomes -- into a new framework that will best serve the needs of nonprofit organizations. Before this model can be presented, however, it is important to carefully consider the differences that prevent direct transfer of existing models to the nonprofit sector.

Challenges in Translating Business Models to the Nonprofit Sector

It would be very convenient to consider NPOs as just ‘organizations’ in order to test the transferability of SAMM and other relevant IT alignment concepts that emerged in the business sector. In fact several nonprofit investigations suggest that NPOs should “run like a business” by using strategies for success developed in the private sector (Paton, Foot & Payne, 2000; Standley, 2001; Young, 2001). Best-selling author and worldwide business consultant Jim Collins, who initially prescribed a disciplined approach to strategic operations that would transform businesses from mediocrity to top performers in *Good to Great* (2001), refuted this very assertion in his companion
monograph, *Good to Great and the Social Sectors* (2006). He posits that disciplined people, disciplined thought, disciplined action and sustained focus on pursuing greatness in terms of outcomes, not business processes, makes an organization great. In *Great by Choice*, Collins and Hansen reiterate discipline, along with creativity, as cornerstones of greatness, particularly in fast-moving times such as today’s technologically-driven society (2011). The distinct differences between business outcomes (financial) and nonprofit outcomes (social) give justification for not cutting and pasting practices from one sector to the other. Further, Collins claims that “a culture of discipline is not a principle of business; it is a principle of greatness” (2006, p. 1). Considering IT alignment in light of this assertion justifies its applicability to NPOs, because IT alignment in any organization is a strategic, deliberate practice that requires a sustained culture of discipline.

The label “nonprofit” alone indicates that NPO are clearly different from “for-profit” business organizations. While these and all organizations share some characteristics, there are distinct differences in organizational character between NPOs and businesses. Edwards (2010) cautions that nonprofit and business organizations should each maintain their distinct character, and they should refrain from becoming “hybrids”, as he claims the result would have undesirable tradeoffs. The present discussion will compare the two along several dimensions: mission and goals, organizational structure, culture, resources, stakeholders, and, most significantly for the purpose of this study, outcomes and performance metrics.
Different Mission and Goals

While every organization with a mission statement aspires to achieve that mission and its corresponding goals, the sentiments at the heart of nonprofit missions are very different from those of businesses (Cortes & Rafter, 2007; Hackler & Saxton, 2007; Moore, 2000). Friedman is very direct in suggesting the sole social responsibility of business, “To use its resources and engage in activities designed to increase its profits so long as it stays within the rules of game, which is to say, engaged in open and free competition, without deception or fraud” (Friedman, 1970, p. SM17). Rarely do NPO missions reflect a focus on profit for profit’s sake. While NPOs do sometimes generate revenue and profit from their work, the proceeds are generally distributed back into the organization, presumably as further investment in achieving their mission. The primary focus of the work of nonprofit organizations is to fulfill a social mission (Hackler & Saxton, 2007) or social value, defined in the Thesaurus of ERIC Descriptors (1966) as “principles and standards of human interaction within a given group that are regarded by members of that group as being worthy, important, or significant”. As they interface with individuals, groups and communities, NPOs strive to create social value with resources entrusted to them (Moore, 2000), an endeavor that is sometimes difficult to define in terms of goals, and sometimes results in multiple goals. In contrast, businesses focus on specific, tangible goals (Campbell, McDonald & Sethibe, 2009), which include, in the most general sense, maximizing profits and creating wealth for stakeholders (Hackler & Saxton, 2007). Cortes and Rafter (2007) describe the heart of the problem, the difficulty nonprofits face in defining their work:

In contrast to the for-profit world’s focus on financial return on investment, nonprofits’ tendency to have multiple, uncertain, conflicting,
ambiguous, and hard-to-measure goals makes organizational effectiveness hard to define, thus complicating improvement of organizational effectiveness through technology. (p. XI).

Different Organizational Structures

Billis and Glennerster (1998) contrast the structures of NPOs and businesses as the former having an ambiguous structure, while the latter has a bureaucratic structure. Such ambiguity is found primarily in smaller NPOs, which make up 80% of registered nonprofits (Guidestar, 2012), those that are governed by a volunteer board, employ volunteers as a significant part of the workforce, lack clearly defined job descriptions and roles for staff, and expect everyone in the organization to jump in wherever necessary. This characteristically different organizational structure brings with it a different approach to training and skill development (Beck, Lengnick-Hall & Lengnick-Hall, 2008). In private sector corporations, structured learning is often incorporated into employees’ job responsibilities. In nonprofits that employ large numbers of volunteers, it is far more difficult to require necessary training during evenings and weekends, without compensation, after folks have invested themselves in their “day jobs.”

Different Organizational Cultures

Nonprofit organizations with social missions must, by nature, be a part of the fabric of their communities if they are to be successful in meeting the needs of their communities. In order to achieve this, a majority of NPOs serve the public good through collaborations and partnerships. Compared to for-profit entities, NPOs are described by Zhang, Gutierrez, and Mathieson (2010) as existing
…in their broader, and often complicated social environments. They must deal with other involved entities such as other nonprofit groups, service recipients, assistance organizations, and regulators. (p. 4).

Personal motivation also impacts the culture of NPOs. Comparisons of NPO and for-profit workforces show that employees in NPOs are driven more by ideology than the prospect of higher pay or better performance (Devaro & Brookshire, 2007; Ruhm & Borkoski, 2003). This element of culture may impact NPO workers’ propensity to adopt and use IT for non-mission-focused tasks, but it may contribute to greater support for IT-mission alignment, according to Zhang, Gutierrez, and Mathieson (2010), because NPO employees and volunteers are more apt to focus on work that is directly related to mission. The capacity and inclination to take risks is also an important cultural consideration, one which affects organizational change related to IT differently in the two contexts. Businesses have full discretion to design a budget that supports IT and risk reinvesting profits to increase IT capacity according to their strategic plans. NPOs, on the other hand, may only do so with discretionary dollars. More often, NPOs receive grants, contracts, and donations that are restricted to specific projects and expenses. Choosing to allocate funds to IT may be considered a viable risk to some, a risk that may result in greater effectiveness, efficiency and productivity, but if an NPO does so with restricted dollars, funder relationships and future funding can be put in jeopardy. Further, investing in technology in the near term may be possible through specific funding streams, but funding for ongoing maintenance of IT may not be available, whereby negating the preliminary advantage of the investment. In short, businesses can take risks more easily than NPOs can, which is a cultural factor which also must be addressed in an IT alignment model.
Different Resources and Resource Acquisition Structures

Financial resources and the means by which they are acquired are vastly different in business and nonprofit organizations. Businesses sell products and services to cover expenses and make a profit. Sometimes they start up with infusions of capital by outsiders, sometimes they begin with someone’s nest egg, and sometimes they take out loans. It is at the discretion of leadership that funds are allocated toward organizational priorities. NPOs, in contrast, garner operational funds through a variety of sources. In the case of grants, contracts, and some donations, the organization makes the request, hopefully a request that aligns with their strategic priorities, proposes a budget, and agrees to specific deliverables if the request is funded. If, and only if, the request includes technology can funds be directed toward technology. Income from fundraising and selling goods and services are typically the only discretionary funding streams to which NPOs have access. Accordingly, budget priorities are not made strictly in terms of what the organization plans to do, but more often in terms of what they have promised their funders they will do with the money entrusted to them. This dichotomy, of full discretion versus limited discretion, is not reflected in SAMM, but must be considered when assessing how IT is prioritized.

Different Stakeholders

In a business context, many internal and external individuals, departments, and organizations are involved in strategy and IT processes, and their views and cultures may exert influences on these processes (Campbell, McDonald, & Sethibe, 2009). Freeman and McVea (2001) suggest that effective businesses “manage and integrate the
relationships and interests of shareholders, employees, customers, suppliers, communities
and other groups in a way that ensures long-term success of the firm” (p. 10). Zhang,
Gutierrez, and Mathieson (2010), in their comparison of for-profit and nonprofit
organizations, assert that all stakeholders in business settings work toward the same
financial goals, whereas NPO stakeholders all have different goals. This assertion is not
entirely accurate, considering Auerswald’s (2009) discussion of externalities and
residuals. Businesses, in some instances, must manage the competing interests of
stakeholders who are focused on financial residuals, i.e. profits, with the interests of
others who wish to reduce or prevent negative externalities, such as environmental or
human degradation that might be generated alongside profit. In other instances,
businesses manage a diverse group of stakeholders, some that focus on profit while others
focus on creating ethical residuals such as hospitals, trusts, and institutes that will benefit
communities (2009). Recent focus in the for-profit sector on corporate social
responsibility (CSR) provides encouragement for businesses to consider and take
responsibility for ways in which their actions affect the interests of all stakeholders
(Leonard, 2013). Carroll (as cited in Leonard, 2013) suggests four priorities in this area:
legal responsibility to comply with statutory obligations, economic responsibilities, most
notably turning a profit, ethical responsibilities to do what is fair, and philanthropic
responsibilities, giving back to the communities in which they operate. Businesses are
obligated to balance these interests and many do so successfully, but in all cases the
primary objective is to make a profit, and the most influential stakeholders are those that
are involved in strategic management of the organization toward achieving shareholder
wealth or financial residuals for the organization.

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Stakeholders in nonprofit contexts are equally as diverse, representing internal perspectives of board members, staff, volunteers and clients, as well as external influences of funders, partner organizations, regulatory bodies, and governmental entities, all of whom have an interest in maximizing a specific social value as defined by their mission (Costa, Ramos & Andreaus, 2011, p. 470). This is the primary difference between NPO and business stakeholders – their priorities. While businesses must consider stakeholder interests in social costs and benefits as an ancillary part of their overall strategy, NPOs’ stakeholders interests are nearly exclusively focused on maximizing social value.

Yet another distinction that sets NPOs apart from businesses is the categories of stakeholders that influence their mission-focused work. Costa, et al. (2011) identified six different categories of stakeholders in their analysis of role and process of stakeholder management in performance accountability, expanding on three categories previously described by Ebrahim (2003). Of the six categories, some were found to be influential to mission-focused work, some were found to be impacted by the mission of the NPOs being investigated, and some fit both criteria. Table 2 below presents the categories as described by both Costa et al. and Ebrahim, and the involvement of each category in the mission-focused work of NPOs. Ebrahim (2003) previously identified three distinct categories of stakeholders based on the bi-directional, principal-agent relationships that exist between each category and nonprofit and non-governmental organizations (NGOs). The categories are defined primarily by the accountability mechanisms and activities involved in maintaining the relationships. Figure 5 illustrates these relationships.
Table 2

*Categories of NPO Stakeholders*

<table>
<thead>
<tr>
<th>Stakeholder Category</th>
<th>Examples</th>
<th>Involvement in and influence on NPO work</th>
<th>Impacted by NPO mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Bodies/Sector Regulators&lt;sup&gt;2&lt;/sup&gt;</td>
<td>State agencies, self-regulatory groups</td>
<td>High</td>
<td>2.4</td>
</tr>
<tr>
<td>Financiers&lt;sup&gt;1&lt;/sup&gt;/ Funders&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Foundations, donors, corporate sponsors, governmental agencies</td>
<td>Low</td>
<td>1.9</td>
</tr>
<tr>
<td>Human&lt;sup&gt;1&lt;/sup&gt; Resources</td>
<td>Employees, volunteers</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>Networking&lt;sup&gt;1&lt;/sup&gt; bodies</td>
<td>National and regional affiliation organizations</td>
<td>Low</td>
<td>2.9</td>
</tr>
<tr>
<td>Mission partners&lt;sup&gt;1&lt;/sup&gt;/ Clients &amp; Communities</td>
<td>Project beneficiaries, users of services, NPO members, community</td>
<td>High</td>
<td>3.3</td>
</tr>
<tr>
<td>Partners/&lt;sup&gt;1&lt;/sup&gt; Collaborators</td>
<td>Other NPOs in the community that share in the work</td>
<td>High</td>
<td>2.7</td>
</tr>
</tbody>
</table>

In both stakeholder models, some of the categories, such as control bodies/regulators, financiers/funders, clients and communities are common to both businesses and NPOs. However, the character of the relationships is very different in each of the sectors because the missions of each have very different character, as described above. Accordingly, the relationships must be strategically managed so that stakeholder interests can be accommodated by an NPO, and the NPO will continue to be supported by the stakeholders. Ebrahim provides several examples of this challenging management process as it might look in NPOs:

- “NPOs report on the easily measurable components of their work (such as numbers of homeless people served or hectares of land reforested) in order to satisfy funders, while failing to report on factors undermining their work, such as increases in homelessness due to rising costs of living or policies that encourage clearing of forests” (2003, p. 197) [social values that are critical to mission partners].
• “donors have the ability to ‘punish’ NGOs by threatening to cut funds, impose conditions, or tarnish their reputations in cases where NGOs fail to deliver quick results in their projects. While such punitive measures are no doubt justifiable in some cases, they can also reflect a failure on the part of funders to appreciate the complexities, uncertainties, and long time frames associated with social development work” (p. 192) [social values that are critical to mission partners].

• Public policymakers and funders of nonprofit organizations tend to focus on external means of ensuring accountability, such as monitoring measures, controls, and laws. In doing so, they neglect issues of accountability that are internal to organizations and individuals, such as integrity and mission, and through which principals and agents work toward developing congruent interests and commitments (p. 197).

• Public agencies [are] sometimes unwilling to inspect politically powerful nonprofit groups for fear of offending them and ending up in court (p. 198).

• In cases where there is a mismatch between the goals of a funder and those of a nonprofit organization, the nonprofit has a significant incentive to modify its own goals (even if nominally) rather than to turn down funding. (p. 200)

• NGOs face tensions between accountability to funders and accountability to clients or communities, particularly in cases where funders presume to know the interests of potential beneficiaries or where the time demanded by upward reporting occurs at the expense of time spent in communities. (p. 200)

The examples above clearly show that NPO decisions are never made in a vacuum, and each is influenced significantly by the interests of stakeholders. For this reason, it is critical to consider stakeholders when considering IT alignment in NPOs because they could significantly influence the prioritization of IT alignment within an organizations’ strategic planning process.

Summary

It has been said that SAMM, the predominant existing IT alignment maturity model, can be used “without difficulties” to effectively assess IT alignment maturity in
nonprofits (Luftman, personal correspondence, February 27, 2011). However the
differences between nonprofit and business organizations described above, along with the
structure and verbiage of the SAMM instrument that clearly describe business
organizations puts this assertion in question, thus SAMM will be used as a starting point,
but not a ‘plug and play’ solution to measuring IT alignment maturity in NPOs in the
present study. One likeness that has been found between nonprofit and business
organizations is the presence of definable strategy typologies. However, the existence of
characteristic differences between the two begs the question of whether the interplay
between strategy typology and alignment factors is the same in nonprofit organizations as
it is in businesses, a question that is addressed in this investigation. In terms of different
outcomes, Luftman echoed Heye’s concern that business metrics used in previous
SAMM studies may not be appropriate for use in measuring nonprofit outcomes, and he
advised finding “metrics that are acceptable business metrics” would facilitate more
successful use of SAMM and more accurate findings [personal correspondence, February
5, 2011]. The literature asserts that nonprofits measure outcomes differently from
businesses, therefore any conceptual framework and instrument used to measure
nonprofit IT alignment must reflect this. Because this study focuses on outcomes as one
of three elements of a proposed model describing relationships between strategy, IT
alignment maturity and outcomes, and because nonprofit outcomes have not been
considered in existing practitioner models, it is important to give appropriate attention to
nonprofit theory and practice as it relates to measuring outcomes. Thus, established
theory and practice surrounding NPO performance measurement is the focus of the
following chapter.
Introduction

Logically, if nonprofit organizations (NPOs) have missions and goals, structures, cultures, resources, and stakeholders’ interests that differ from those found in the business sector, they will also pursue and achieve outcomes that are vastly different from those achieved in the business sector (Ebrahim & Rangan, 2010; Kaplan & Norton, 2001). Outcomes, according to United Way (1996), “are benefits for participants during or after their involvement with a program. Outcomes may relate to knowledge, skills, attitudes, values, behavior, condition, or status” (p. xv). This definition is simplified by Wholey, Hatry and Newcomer to “changes in clients or communities associated with program activities and outputs” (2010, p. 28). Across the nonprofit sector, other terms are synonymous with outcomes: impacts, results, and effects, to name a few (United Way, 1996, p. 7).

Outcomes should correlate directly with the mission of an organization, as well as the goals, objectives, strategies, and activities the organization pursues in order to achieve that mission. In other words, NPOs should endeavor to know whether they are making the difference they intend to make in individuals, families and communities. Identifying these outcomes, and more specifically, metrics to quantify the outcomes, has been the
challenge to date in creating a tool for the nonprofit sector to assess IT alignment maturity and its influence on mission.

With the incredible breadth of missions and contexts among NPOs, establishing a standardized means through which to measure outcomes across the sector is no small task. Much work has been done to establish appropriate outcome measures and performance measurement strategies for nonprofit organizations, and an examination of this work brings several issues to light.

At the outset of this investigation, it seemed logical to incorporate outcomes into the proposed model of relationships between NPO strategy, IT/mission alignment and outcomes as a simple, straightforward, quantitative set of measures, as suggested by Sawhill and Williamson (2001). Their conceptual model for measuring nonprofit success considers a family of three outcome measures – impact, activity, and capacity -- as indicators of nonprofit success. In their work with 31 nonprofit organizations, they endeavored to identify “a nonprofit analog to ‘profit’ for a private sector enterprise” (p. 378) and were unable to do so, which they had hypothesized. Instead, they arrived at three measures that were “simple, easily collected, and easily communicated…focusing on the highest-leverage strategies….and applicable across the organization at all levels so that managers could compare performance across all units.” (2001, p. 375). In the present investigation, similarly straightforward indicators were sought because they would enable a proposed model to be applicable across a wide spectrum of organizations within the nonprofit sector. However, through examination of the existing knowledge base related to outcomes, it quickly became clear that these three simple measures do not provide an accurate picture of the series of critical, measurable process components
involved in achieving outcomes. Thus, the following discussion describes what is known about nonprofit outcome measurement, and compiles the findings into a conceptual map of what it means for an NPO to achieve outcomes. This map will provide the theoretical basis for the outcomes component of the strategy, IT alignment maturity and outcomes model.

Nonprofit Outcomes are Social Values

Kanter and Summers assert that “the centrality of social values over financial values …complicates measurement [of outcomes] for nonprofit organizations” (1994, p. 220). Moore (2000) takes this comparison one step further in asserting that for-profit businesses’ long-term survival, economic performance and value creation are integrally connected, while in NPOs, mission-focused outcomes and financial sustainability can be achieved independent of one another. Both types of organizations perform, and their performance can be measured, but the way in which it is measured is strikingly different.

In business, performance is measured primarily through financial metrics. A successful business’ outcomes are reflected in its bottom line and a variety of other economic data. This data is, for the most part, tangible and finite. Mulgan (2010) provides a snapshot of a collection of metrics a for-profit company might use to demonstrate outcomes, in his exploration of the challenges of measuring social value compared to financial value:

An airplane manufacturer … would use one set of metrics, mandated by laws and regulations, to explain to external stakeholders how it spends its money. The company would then use a second set of metrics to allocate resources in the building of airplanes. (It is a brave manager who would let investors see these internal accounts.) The company would then use entirely different kinds of measures to explain how its activities affect
larger economic indicators such as gross domestic product. (2010, para. 6)

NPOs cannot use dollars and cents as the primary means through which to measure performance because economic measures cannot always capture performance related to the social values that drive their missions. Lists of dozens of distinct social values, i.e. communication, compassion, education, equality, freedom, honesty, peace, security, and self-reliance exist (Hein, 1996; Posner, 2011), a majority of which can be classified within the historic values taxonomies of Kahle (1983), Rokeach (1973), and Maslow, Frager and Fadiman (1987). The mission statements of the nonprofit organizations mentioned in this investigation’s introduction finds similar values in print, such as “healing, purity, salvation, ethical and moral behavior” (Compassion Pregnancy Center of Northeast Indiana, n.d.), “taking action” (rchfm, 2011), and “food security” (Community Food Bank of Southern Arizona, 2009).

Challenges in Measuring Social Values

Social values present a measurement quandary. They are the principles and standards NPOs have chosen as the heart of their missions. The work of NPOs is invested toward establishing and strengthening these values in the lives of their constituencies, but how can the NPOs know whether these intangibles have been achieved? How can such standards be quantified and, for the purpose of this investigation, compared among NPOs relative to their IT alignment maturity and strategy typology?
Many social values *can* be measured in terms of the extent to which NPOs maximize the values that are established within their missions (Costa, Ramus & Andreaus, 2011; Penna, 2011). Maximizing social values is another way of saying that an NPO has met its mission. This assertion is supported by two decades of work by The United Way (1996), Chinman, Imm, and Wandersman (2004), The W.K. Kellogg Foundation (2004) and Wholey et al. (2010) in the field of nonprofit performance measurement. Knight (2002) and Penna (2011) suggest that social values can be classified, operationalized and measured using the acronym BACKS when NPO stakeholders identify and define specific behaviors, attitudes, conditions, knowledge, or status of their target population that demonstrate the social values that will serve as indicators of the targeted social value(s). BACKS serves as the most current iteration of a set of concise, transferrable outcome indicators. It convenes characteristics of several popular outcome frameworks, “Getting to Outcomes” (Chinman et al., 2004), “Results-Based Accountability” (Friedman, 2005); “A Common Outcome Framework to Measure Nonprofit Performance” (Urban Institute, 2006), and “You Get What You Measure” (Yellow Woods Associates, 2006). When identifying outcome indicators, Penna (2011) suggests that organizations describe their intended outcomes in terms that are “meaningful, sustainable, bound in time, bound in number, narrowly focused and doable, measurable, and verifiable” (p. 36).

In order to determine whether an NPO has achieved mission-focused outcomes through its implementation of programs, services or interventions, organizational staff measure changes in the outcome indicators to determine whether the changes in participants are meaningful, add value or positive improvement, are sustained over time,
take place over a defined period, and bound within a specified number or target with which the NPO can plan, track, and measure progress and success. If these criteria are met, then it is likely that the social values the NPO hopes to maximize will, in fact, be maximized or increased in the target population (Penna, 2011).

It is insightful to consider this practice of establishing indicators, by looking at a few examples. The social value of “food security” can be measured by a food and clothing pantry with the status indicator, ‘percentage of clients who move from food insecurity (a status characterized by reduced quantity, quality, variety of food and disrupted eating patterns) to food security (a status characterized by no indication of food-access problems, insufficiency or shortage) during a 12-month period, as defined by the U.S. Department of Agriculture (USDA, 2011) and measured on an annual client survey. Similarly, “purity” can be measured by a crisis pregnancy center with the behavior indicator ‘percentage of teens enrolled in Smith High School that remain abstinent until age 18” as measured on a yearly survey. “Taking action,” likewise, can be measured by the number of activism activities youth are involved in every semester (behavior), as can the direct results of that activism, such as policy changes that are implemented within a given timeframe (condition). In these examples, stakeholders, such as the CEO, board, staff, community members, funders, oversight agencies, and possibly clients must be involved in defining the social value and the observable indicators with which it is measured, often through the development of questions about the organization’s mission, goals, programs, and intended outcomes, because they will be the ones planning, implementing, supporting, and measuring the results of their organization’s work (W.K. Kellogg Foundation, 2004).
Considering these additional ideas about social values, stakeholders, and the BACKS acronym, the existing definition of a *nonprofit organization outcome* should be expanded to the following:

*Outcomes are measurable, sustained influences on changes in behaviors, attitudes, conditions, knowledge and/or status (BACKS) of a target population that result in the target’s movement toward the social value(s) established by stakeholders in the NPO’s mission statement.*

Outcomes are clear evidence that NPOs have achieved, or are showing evidence of moving toward the achievement of the maximized social values that anchor their missions. However, many such outcomes take years to achieve at a measurable level (Chinman, Imm, & Wandersman, 2004; United Way, 1996; W.K. Kellogg Foundation, 2004). This poses a challenge to NPOs, some of which depend upon inconsistent, piecemeal financial support with which to do their work, and others that operate on funding that is contingent upon demonstrating measurable outcomes. Many grants and contracts, for example, are awarded for just a few years or for one component of a comprehensive strategy to achieve long-term outcomes (Chinman, Imm, & Wandersman, 2004). W.K. Kellogg Foundation (2004) asserts that it can take anywhere from 1 to 6 years for an organization to demonstrate measurable changes in its target population, and between 7 to 10 years for an organization’s initiatives to result in community- or system-wide impact. If the activities contributing to intended outcomes cannot be sustained because of a lack of resources, sometimes those changes never happen. Also, in some cases, long-term outcomes or impacts do not manifest until years after a program or activity has been completed, such as a reduction in youth recidivism or increase in
gainful employment across an entire community (Poister, 2010; Shaping Outcomes, 2006; Taylor-Powell & Henert, 2008; W.K. Kellogg, 2004).

Additionally, when NPOs endeavor to measure outcomes, often the assumption is made that an activity, program, or intervention is the direct cause of an outcome, while in reality most changes in individuals and communities are a result of the confluence of the activity with extraneous factors at the individual, family, and community level (United Way, 1996), sometimes rendering the outcome “unevaluatable” in a concise, quantitative sense (Connell, Kubisch, Schorr & Weiss, 1995). Generally, as measured outcomes become chronologically more distant from activities, these uncontrollable, external factors exert a greater level of influence on the target population (United Way, 1996). Therefore measuring outcomes in isolation may cause organizations assessing their programs’ impacts, and the organizations’ stakeholders, to come up empty handed, or misled by outcome data.

Further, planning and implementation of the events that lead to outcome achievement directly affect the extent to which outcomes are achieved. Relationships established with stakeholders, resources available to address the social need, activities and strategies chosen with which to engage the target population, the scope and depth of service delivery, and the environment in which efforts are put forth all impact whether an NPO achieves outcomes and maximizes the social values upon which its mission is based. This process, of getting to outcomes, is as important to understand and measure as the outcomes themselves, because each component of the process provides insight into the factors that influence outcome achievement (Chinman, et al., 2004; Connell et al., 1995).
For these reasons, it is critical to consider outcomes not in a vacuum, but as the final destination in a continuum of the investments NPOs make to create positive change in the lives of individuals, families and communities. United Way (1996) warns about putting full stock in outcomes as the sole measure of mission-focused work:

Although outcome findings may show that program participants are not experiencing the intended benefits, they do not show where the problem lies or what is needed to fix it. To pinpoint and correct problems, program managers need the kind of data on program inputs, processes, and outputs they probably have been collecting for some time. Thus, outcome measurement is an addition to existing data collection efforts, not an alternative. (United Way, 1996)

This guidance is echoed by Chinman et al. (2004) and W.K. Kellogg Foundation (2004), who describe effective performance measurement, in the context of program evaluation, as a constructivist paradigm that “focuses on answering questions about process and implementation, and what the experiences have meant to those involved” (p. 10). Accordingly, NPOs must question, measure and analyze the precursors to outcomes in order to get a comprehensive view of whether they are moving toward maximization of the social value established in their missions. The field of evaluation presents a framework through which all NPOs can do so – the logic model.

Logic Models: A Framework for Measuring Performance

Logic models were first described by Wholey in 1979 as a framework with which to lay out an organization’s or program’s structure in terms of what specific elements must be in place and operating in order to achieve desired outcomes, components that each can be described and measured. Logic model is defined by Bickman (as cited in Wholey et al., 2010) as “a plausible and sensible model of how a program will work
under certain environmental conditions to solve identified problems” (p. 56), and similarly by the W.K. Kellogg Foundation (2004, p. xviii) as “a series of connections that link problems and/or needs with the actions taken to achieve the goals. United Way (1996) describes the logic model in a practical light, suggesting how it can be applied in nonprofit setting when considering outcomes:

A program logic model is a description of how a program theoretically works to achieve benefits for participants. It is the “If-Then” sequence of changes that the program intends to set in motion through its inputs, activities, and outputs. Logic models are a useful framework for examining outcomes. They help you think through the steps of participants’ progress and develop a realistic picture of what your program [or organization] can expect to accomplish for participants. They also help you identify the key program components that must be tracked to assess the program effectiveness. (p. 38)

For the purposes of this investigation, the comprehensive definition provided by Wholey et al. describe the form and function of a logic model:

A flowchart that summarizes key elements of a program: resources and other inputs, activities, outputs, intermediate outcomes and end-outcomes that the program hopes to achieve. Logic models should also identify contextual factors that are outside the control of the program [or organization] staff but are likely to affect the achievement of desired outcomes. A logic model shows assumed cause-and-effect linkages among model elements, showing which activities are expected to lead to which outcomes, and it may also show assumed cause-and-effect linkages between external factors and program outcomes. (2010, p. 28)

Over the past three decades, logic models have become widely accepted in the public and nonprofit sectors as a best practice tool for strategic and program planning and evaluation (Taylor-Powell & Henert, 2008). This widespread use can be attributed to increasing expectations for accountability established by the donor public, foundations, federal funding agencies as dictated by the Government Performance and Results (GPRA) initiative (Government Performance and Results Act, 1993), as well as federated funding agencies such as the United Way (1996).
At present, the knowledge base is relatively consistent in identifying the format and specific elements of a logic model (McLaughlin & Jordan, 1999, 2010; Milstein & Chapel, 2012; Taylor-Powell & Henert, 2008; United Way, 1996; Wholey, 1979; Wholey et al., 2010; W.K. Kellogg, 2004). Figure 6 below represents these common elements (McLaughlin & Jordan, 2010, p. 57).

![Figure 6: Basic Logic Model. Copyright (2010) John Wiley and Sons. Used with permission from McLaughlin, J.A. & Jordan, G.B., Using logic models, in J.S. Wholey, H.S. Hatry, & K.E. Newcomer (Eds.), Handbook of practical program evaluation (3rd ed.), 57, John Wiley and Sons.](image)

When an organization creates a logic model, it is describing the process it will follow to address a problem by achieving outcomes related to that problem, outcomes which, in most cases, are related to its mission and goals. As suggested earlier, each of the elements in the logic model is, or should be, identified and defined by the organization’s stakeholders. Describing a measurable indicator of each element, a way to quantify its level, quantity, or extent of change, is part of the definition process. Logic models can be created at any time during a program or organization’s life cycle. Often, a logic model is conceptualized as part of the planning process, then modified during implementation so that when program managers engage in measuring the indicators of each element during implementation (serving as a vehicle for formative evaluation – done for process improvement) and after implementation (for summative evaluation – done for
evaluation of program effectiveness and assessment of outcomes, as well as ongoing process improvement) the program and the logic model will mirror each other. In some cases, a logic model is created after a program is implemented, either by organizational staff or an external evaluator, at which time the logic model serves as the framework for evaluating the effectiveness of the program in achieving outcomes (Whooley et al., 2010). In all cases, it is critical that stakeholders clearly identify each of the elements, define indicators, and establish a strategy for collecting data using the indicators.

The definitions of each element of a logic model have also remained consistent over time, although examples of each element are as varied as the missions of NPOs themselves. Considering a logic model in two parts enables organizations to envision their work as a combination of programs and results. The left side of the diagram above depicts the “program” or “organizational” elements of the model, designated as such because they each describe the structures and processes put in place by an organization to create conditions and provide services that will influence the behaviors, attitudes, conditions, knowledge and/or status (BACKS) of participants. *Resources*, or *inputs*, are human, financial, community and other inputs required to support a program and achieve program objectives (United Way, 1996, p. xv; McLaughlin & Jordan, 2010, p. 57; W.K. Kellogg Foundation, 2004, p. 2). The number of staff, the annual budget, equipment, and meeting and event space are just a few examples of resources used by NPOs. *Activities* are the processes, events, and actions steps that are an intentional part of implementing a program or intervention in order to produce program outputs (McLaughlin & Jordan, 2010, p. 57; W.K. Kellogg Foundation, 2004, p. 2). Organizations’ activities may include education, training, and recreation programs, media campaigns, recruiting blitzes,
materials distribution, social media events, cultural exhibits, or treatment interventions, among scores of others. Outputs are “the direct products, goods, and services provided to program participants as they participate in a program or intervention” (McLaughlin, & Jordan, 2010, p. 57). The number of participants in an educational program, the level of saturation of a geographic area with social marketing campaign messages, the number and demographic distribution of immunizations given, and the monthly number and ages of visitors to the symphony are all examples of outputs. Kanter and Payne’s (2012) “Crawl, Walk, Run, Fly” matrix of indicators provides a collection of metrics NPOs can use to measure organizational outputs related to the use of social media (pp. 252-255). These elements can be influenced by the context of the program or the environment of the organization, as well as influence each other.

Each of these service elements is a necessary precursor to outcomes. Together they establish a situation that has the potential to influence individuals, groups, and communities to change. Penna provides a simple description of this relationship: “If the program is what we do, and the output is the product of what we do, the outcome is what happens because of that product” (2011, p. 19).

That having been said, often nonprofit organizations stop their performance measurement at outputs – they measure products and services created and report them to funders, boards, and other stakeholders. Often these measurements incorporate performance assessment data related to cost effectiveness, efficiency, quantity, service quality, and customer satisfaction (LeRoux & Wright, 2010 p. 574; Wholey et al., 2010, p. 102-103). Penna warns that this approach to measuring nonprofit performance reflects a “funder mentality” in which money is put toward a demonstrated need or problem with
the expectation that good will come of it, with little consideration of the return on investment in terms of how the investment impacted the problem (2011, p. 29-30). Most data NPOs collect tends to focus on outputs because the data is immediately available and easy to collect (Carman & Fredricks, 2008; LeRoux & Wright 2010; Morley, Vinson & Hatry, 2001; W.K. Kellogg Foundation, 2004). Costa, et al. (2011) suggest through their findings that when upward accountability is the focus of outcome data collection and reporting, rather than maximizing social value, it is typical for NPOs to choose short-term, easily-measurable projects rather than long-term initiatives that resulted in longer-term social impact, thus limiting the outcomes, or sustained changes that could potentially result from interventions. For that reason Chinman et al (2004), Costa et al. (2011) and Penna (2011) recommend a paradigm shift through which NPOs monitor process measures of the program elements described above to assess “progress, problems, and lessons learned” (Chinman, et al., 2004, p. 101) in order to ensure effective implementation, but focus on outcome measures that will enable organizations to assess results – whether or not they are influencing a sustained, meaningful changes in the beneficiaries of services. The right side of the logic model facilitates the conceptualization and measurement of such changes.

The outcomes dimension of the logic model illustrates the multiple, sequential changes or benefits that an organization expects will take place within the target population due to participation in an established program, strategy, or treatment. Short-term outcomes are the changes or benefits most closely associated with, or “caused by,” the program’s outputs, typically attainable within 1-3 years. (McLaughlin & Jordan, 2010, p. 58; United Way, 1996; W.K. Kellogg Foundation, 2004, p 2). This level of
outcome can be characterized as having a learning focus, in which program activities influence participants to gain knowledge and skills, increase awareness, or change their attitude about a particular social value (Knight, 2002; Penna, 2011; Shaping Outcomes, 2006; Taylor-Powell & Henert, 2008; Urban Institute, 2006). Smokers knowing how to deal with nicotine withdrawal triggers after attending a quit smoking program, caregivers teaching children to seek an adult if they are bullied after hearing and seeing media campaigns, or business people internalizing how personal actions affect the environment after attending a ‘green community’ luncheon are all short-term outcomes. Intermediate outcomes are changes or benefits participants should experience after achieving the short-term outcomes, typically within a 4 to 6 year timeframe (McLaughlin, & Jordan, 2010, p. 58; W.K. Kellogg Foundation, 2004, p. 2). This level of outcome manifests as observable behavior change, decision-making, new policies, or social action (Knight, 2002, Penna, 2011; Shaping Outcomes, 2006; Taylor-Powell & Henert, 2008; Urban Institute, 2006). Quitting smoking, implementing an anti-bullying policy, and volunteering to lead an apartment recycling program are examples of intermediate outcomes that would follow educational or informational outcomes. Long-term outcomes or impacts are fundamental changes occurring in individuals, populations, organizations, or communities, as a result of program activities, expected to follow from the benefits accrued through the intermediate outcomes within 7 to 10 years (McLaughlin, & Jordan, 2010, p. 58; W.K. Kellogg Foundation, 2004, p. 2). Long-term outcomes involve changes in individual or community values, conditions or status (Knight, 2002; Penna, 2011; Shaping Outcomes, 2006; Taylor-Powell & Henert, 2008; Urban Institute, 2006). Reducing the incidence of tobacco-related illness and increasing one’s lifespan, increasing students’ safety and
security by reducing a school corporation’s incidence of bullying behavior, or sustaining the environment by reducing a business’ carbon footprint are examples of long-term outcomes or impacts. Going back to the idea of social value, each of these long-term outcomes reflects a specific social value: health, safety, sustainability. Organizations that have values such as these as foundations of their mission statements must consider how they will plan, implement, and evaluate all of the elements in the logic model in order to ultimately get to these outcomes.

In the present investigation, I focus on the question, “How do NPOs adopt and use technology in ways that make a measurable difference in their achievement of outcomes?” This discussion of logic modeling illustrates the importance of asking this question relative to technology and using data as the answer at every step an organization takes on the path to achieving those outcomes.

An Updated Logic Model

The above elements have held constant over the past few decades, but additional elements have been suggested to have the potential to strengthen the logic model as a tool for getting to outcomes. The influences of context, capacity, and stakeholder engagement have emerged as considerations NPOs must make as they consider how to best meet their mission.

McLaughlin and Jordan suggest that contextual influences, “factors external to the program and not under its control [that] may influence its success either positively or negatively,” (2010, p. 58) should also be included in logic models. Characteristics of
participants, such as demographics, as well as events and issues that emerge during implementation, can influence achievement of outcomes. Likewise, Ebrahim and Rangan (2010) analyzed nine national and twenty-four international initiatives and investigations that have taken place over the past decade, all of which attempted to bring NPOs to consensus on how to measure the outcomes of their work. Through their analysis, they present a contingency framework for measuring social performance, one which suggests conditions and contexts in which organizations should measure and report activities, outputs, outcomes, and/or impacts. While the influence of context is important to acknowledge, identifying and analyzing contextual factor effects on a case-by-case basis is beyond the scope of this investigation. Further, although NPOs are encouraged to consider internal and external influences beyond their control when building logic models, not all can be identified, predicted and planned for, although their influence may impact the explanatory and measurement validity of the model in positive or, in crisis situations, negative ways. However, this may be an insightful consideration for future research.

*Capacity* is described by Light, Hubbard and Kibbe (2004) as the collection of factors that contribute to organizational effectiveness and can include relevant, mission driven programs, policies and processes, assets and resources, financial stability, and skilled leaders (p. 69). Light et al. interviewed NPO stakeholders in order to gain insight on the concept of capacity and capacity building and found a general sentiment that an NPOs capacity is critical to its ability to successfully serve its constituents (2004, p. 13). They, along with Penna (2011), assert that while activities and results of a nonprofit are valuable benchmarks of nonprofit effectiveness, without sufficient capacity to implement
activities, it is likely that no measurable results will occur. Therefore, performance measures within a logic model should include capacity (p. 8), as suggested by Sawhill and Williamson’s (2001) family of outcome measures.

Capacity considers resources and inputs, such as “human, financial, organizational, and community resources a program has available to direct toward doing the work” (W.K. Kellogg, 2004, p. 2; Wholey et al., 2010); “staff, volunteers, facilities, equipment, curricula and money” (United Way, 1996, p. 17). Considering how all of these unique areas might be measured, it is evident that the simplicity I seek in establishing metrics for the present model can quickly be quashed if I use individual organizations’ levels of resources or inputs as an indicator, because each of these things must be measured independently, and organizations I wish to compare will be diverse in their necessary levels of sufficiency to do their work. For example, a small grassroots arts-focused NPO may only need two employees in order to accomplish its work, whereas a statewide advocacy NPO may need 100. If they both had two employees, one would have sufficient resources, while the other would be unable to do its work at all, so using resources as a metric would not be conducive to comparison. Therefore, the measure of “capacity” is used in the current logic model instead of “resources” or “inputs” because for each of these areas, an organization can determine whether it has sufficient capacity, rather than assessing the quantity of each resource, which would have no quantitative, comparative meaning in the current study.

Another element that is missing in existing logic model discussions is stakeholder engagement, an organization’s direct actions to enlist and sustain the involvement of influential and/or likely influenced stakeholders in strategic planning, implementation,
and measurement of the organization’s mission, goals, capacity, activities, outputs and outcomes. While prevalent work regarding logic models references the importance of including stakeholders in the process of identifying social values and establishing performance measures for those values (Costa, Ramus & Andreaus, 2011; Enright & Bourns, 2010; Wholey et al., 2010), none specifically incorporates stakeholder engagement as a critical requirement for getting to outcomes. Costa et al. (2011), in their analysis of the relationships between 64 NPOs and their stakeholders, determined that in order to maximize social value and become legitimized, NPOs must satisfy the requests of stakeholders who are most influential in terms of implementation in the short term, such as controlling entities, mission stakeholders, and human resources; and in the long term they must get a greater proportion of stakeholders engaged that can actually support their mission, such as advocates, additional funders, and partner organizations. These findings show that the work of engaging stakeholders is critical and ongoing to an organization’s efforts to achieve its mission.

Returning to the examples shared in the introduction of this paper, it is evident that technology has the potential to facilitate the process of engaging stakeholders by building relationships and establishing and promoting a common understanding of an organization’s mission through tools like social media, blogs, e-mail marketing, and constituent relationship management (CRM) systems. If this engagement process is effective, according to Balser and McClusky (2005) and Costa et al. (2011), stakeholders buy in in a number of ways, such as coming on board as members and volunteers, providing funding, pro-bono service, policy support, partnership programs and expanded networking opportunities. Benjamin (2012) suggests that while organizations spend much
of their performance measurement efforts tracking activities and outcomes, they neglect to measure the front line work staff do building relationships with clients, many of whom transform from service recipients to mission advocates over time if relationships are nurtured, thus increasing the overall effectiveness of the NPO.

Stakeholders must be recruited and educated, relationships must be built, and they must be engaged in sharing the vision of the organization before they can actually do many of these things, thus engagement is a precursor to organizational capacity. Additionally, stakeholder relationships must be maintained, therefore this element should be considered and monitored throughout a program or organization’s life cycle. NPO staff and existing volunteers have a critical, strategic role in establishing and nurturing stakeholder relationships, and many do so using communication technologies and social media (Miller, 2012).

Once again, Habitat for Humanity International is a perfect example of the ways in which stakeholders contribute to the achievement of mission, according to Crutchfield and McLeod Grant (2012), who use the term “evangelists” to describe the thousands of volunteers worldwide who carry the Habitat message, swing hammers, manage functions, collaborate and contribute financially to its mission. From past president Jimmy Carter, who became Habitat’s most visible advocate and largest fundraiser, to individuals who volunteer once a year on a ‘build’, each plays a critical role in helping the organization serve the needs of those in poverty and meet its mission. Technology plays an equally critical role in engaging stakeholders, described by Jim Thie, former Habitat VP of Information Services and CIO as “a powerful business enabler” (Habitat for Humanity International, 2005, para. 6). Volunteers, clients and funders are engaged through a
network of Habitat websites hosted by the International office and local affiliates across the world. The evangelists network through Habitat’s presence on Facebook, Twitter, YouTube, Google+, Pinterest, and Instagram, and professionals are recruited to join the leadership team through LinkedIn (Habitat for Humanity International, 2013). Habitat uses Success Measures, a contracted, cloud-based service to empower local affiliates to evaluate activities, outputs and outcomes in communities (Hix, n.d.) and the organization participates in a virtual, international collaborative, NetHope, to work together with other non-governmental organizations (NGOs) to “affect positive change in the developing world” (Cherry, 2010). Without the evangelists and without the power of technology, Habitat’s founder Millard Fuller and his wife Linda could conceivably still be building houses on their own, with money from their own pockets.

Engaging stakeholders is no easy task, and it requires significant planning and investment of resources. Verba, Schlozman, and Brady’s (1995) civic volunteerism survey of 15,000 people across the U.S. identified three reasons individuals do not become involved with civic organizations: “they can’t” due to resource constraints, “they don’t want to” because they aren’t interested or don’t know about local needs and issues, or “nobody asked” them to become part of an organization’s efforts (p. 16). Verba et al. assert that it is the responsibility of institutions to invite citizen stakeholders to engage by reducing resource barriers such as cost or time constraints, motivating engagement through the public promotion of needs and issues, and recruiting individuals through existing formal and informal networks (pp. 16-17).

Likewise, Crutchfield and McLeod Grant suggest a wide variety of strategies for recruiting a mission-focused army: promoting an organization’s mission to individuals
and groups, creating meaningful experiences they can participate in, cultivating relationships and helping stakeholders build skills, and establishing a community around the mission (2012, pp. 106-121) Logically, if these types of activities are to become integral to the work of an organization, they should be considered strategically, as part of the organization’s logic model. But stakeholder engagement spans beyond just implementing a set of activities.

Enright and Bourns (2010) suggest that organizations can overcome barriers and achieve outcomes by impacting constituents, influencing other stakeholders, and leveraging resources. Constituents beyond direct service clients can be impacted short-term as evidenced by changes in behavior, attitudes and knowledge, possibly to the extent that they become engaged in an organization as volunteers or advocates. Expanding an organization’s reach across a community, another potential outcome that would be considered an intermediate-term condition, is often the result of the work of stakeholders as they promote an organization’s mission within their respective networks. Capacity, which in the logic model is considered an organizational structure, can also be considered an outcome when an organization’s stakeholder engagement and recruitment activities result in a change in the condition of the organization in terms of the time, money, skills, connections, and representation provided by stakeholders. In proposing that stakeholder engagement be incorporated into the existing logic model, these three measurable elements can be considered outcomes in their own right, with stakeholder engagement serving as a metric. Herman and Renz (2008) assert that NPO effectiveness is a social construction, in which influential stakeholders’ engagement and perception (i.e. is change happening, is this organization adding social value, should we support it) reflects whether
an NPO is truly contributing to the greater good, which is a long-term status metric. Accordingly Friedman’s and Herman and Renz’s ideas support the idea that stakeholders should be included in short-term, intermediate and long-term outcome measurement.

The extended discussion above strongly suggests the consideration of stakeholder engagement as an element that spans both organizational and outcome structures and warrants its preliminary inclusion in the logic model. The caveat of preliminary inclusion is intentional, in that intensive investigation of the stakeholder engagement element is beyond the scope of the present exploratory study of the relationship between strategy, IT alignment and outcomes. This inclusion may present an opportunity for future research within the larger sphere of logic model theory and within the SIMO model, provided exploratory stakeholder engagement data indicates relevant relationship to strategy and IT alignment.

Three new elements have been described as necessary considerations for NPOs as they work to achieve mission-focused outcomes: context, capacity, and stakeholder engagement. For the purpose of this investigation, the existing logic model structure is modified to incorporate these elements, as illustrated in Figure 6 below. The interface between the logic model as the framework for measuring outcomes, and additional elements of the Strategy/IT alignment maturity/outcomes will be detailed in Chapter 4.
Limitations of Logic Models

The process of creating and using logic models to design and implement programs sounds great in theory. NPOs that use this best practice, either because they are required to do so by funders or choose to do so voluntarily tend to be more successful in achieving consensus, building collaborative relationships, identifying underlying assumptions and identifying and addressing flaws in logic that could affect their effectiveness, and communicating with internal and external constituencies (Kaplan & Garrett, 2005), all of which can help them succeed in getting to outcomes. Hendricks, Plantz and Pritchard (2008) found in their survey of 215 United Ways that 83% of the 71 respondents and their grantees used logic modeling or similar outcome measurement strategies, and the process helped them maintain accountability to donors, improve marketing and fundraising, and increase community visibility and positive image. The focus of evaluation for United Ways has become one of program improvement, more so than required accountability reporting to external stakeholders, which benefits both the NPOs.
and the stakeholders. Agencies using logic modeling can clearly design and observe their processes of achieving (or not achieving) outcomes and make process improvements along the way. Finally, because the logic model approach suggests that changes in target populations take place over years, it takes pressure off agencies to produce immediate output data and encourages the development of strategies that will produce long-term change.

However, not all NPOs use logic models. In fact, less than half of NPOs targeted by investigations of logic model use reported using them (Carman, 2009) or demonstrated a clear understanding of how to create and use a logic model for program planning and evaluation (Kaplan & Garrett, 2005). This disparity in understanding and use of such a widely-known best practice has multiple causes: lack of training and technical assistance to NPOs in how to create and use logic models, lack of staff time to add creating and monitoring logic models to already full plates, lack of incentive or accountability to create and use the tool as a condition of continued funding, and in some cases fear that creating a logic model will expose assumptions or gaps that would call a funded program or strategy into question (Hendricks et al., 2008; Kaplan & Garrett, 2005; Carman, 2009).

In my opinion and fifteen years of experience working with NPOs, the most influential reasons organizations do not use logic models are because they do not see the benefits in doing so, or they do not have incentive to do so. Interestingly, all of the organizations I have worked with (n=37) gather data and use it to measure performance and report to funders, as do most NPOs (Carman, 2009). When I have showed organizations how they can use a logic model for strategic planning, define indicators for
all of the elements they’ve identified including intended outcomes, and collect, organize and analyze their data in ways that can evaluate their processes and potentially improve their outcomes, directors and boards have been excited and have managed to find the time and resources to start using logic models, and in many cases they have improved their outcomes.

When created and used appropriately, a logic model can help organizations answer four critical questions, questions suggested by the U.S. Office of Management and Budget (Koskinen, 1997) as it implemented by the Government Performance and Results Act (GPRA):

- What is your program or organization trying to achieve?
- How will its effectiveness be determined?
- How is it actually doing?
- What are we getting for the money we are spending?

If these questions are considered in the present context of the relationships between outcomes, IT/mission alignment and strategy, they can provide insight into the roles strategy and IT alignment play in achieving outcomes. For example, an organization can ask: What is our mission, and how can our mission be demonstrated and measured? Are IT tools helping us achieve our mission? How will we measure whether the tools have actually helped? Has our investment in IT helped us achieve our mission? These questions can be imbedded in the logic modeling and performance measurement process because technology has the potential to facilitate action or change at each place within the logic model.
But what if an organization doesn’t use logic modeling, as suggested above? Can it still answer those questions? The survey items prepared for this investigation that focus on “getting to outcomes” answer these last two questions, as the items probe respondents to consider their current organizational practices using the conceptual structure of a logic model as the lens through which they respond to each question. It is assumed that with each of the elements clearly defined and examples provided, all organizations surveyed can identify their stakeholders and characterize stakeholder engagement processes, they can estimate their organizational capacity, and they can identify the activities they engage in, measure their outputs, and identify outcomes. Then, as part of the debrief/reporting process, this lens will be explained to them in the IT Alignment technical manual they receive, providing an opportunity for them to learn more about the logic modeling practice and how it might assist them in improving the extent to which they get to outcomes and the extent to which technology can help them do so. This is a preview of the process participants engaged in during this study, which is described in detail in Chapter 5, Methodology. It is important to provide this insight now, however, to provide a rationale for the previous discussion and the incorporation of the logic model framework into the new conceptual model.

It can be argued that a business sector logic model mirrors the model established for the nonprofit sector. In some areas it does. Businesses have inputs (raw materials, talent, technology, etc.), activities (design, production, marketing, sales), and outputs (products and services) that have clearly defined metrics. Measures of efficiency and satisfaction also play into a business logic model, as illustrated by Peter Drucker, the father of modern management, “The most efficient way to produce anything is to bring
together under one management as many as possible of the activities needed to turn out the product” (1958, as cited in Leonard, 2013). The difference, as discussed previously, is in the outcomes. As much as businesses may trumpet their corporate social responsibility practices, ultimately their desired outcome is profit, hence the distinction for-profit versus non-profit. This is the exact point Jerry Luftman alluded to in conversation, that while many of the criteria of the SAMM model may fit the character of any organization, profit metrics simply do not fit within a nonprofit logic model (Luftman, personal correspondence, February 27, 2011).

Summary

In summary, it becomes clear through the review of the literature that measuring outcomes is not a simple task. However several generalizations can be made about what NPOs should and can measure for the purpose of assessing whether IT alignment is contributing to better achievement of outcomes.

First, stakeholder engagement should be measured, because without stakeholders informing and championing an organization’s mission, goals, and outcome indicators, it is unlikely that the mission will be fulfilled. Second, in order to facilitate change, organizations must have the capacity to do so. If an organization does not have the financial, human, and material resources necessary to implement its activities, then the activities will not be implemented effectively, which can result in a lack of measurable mission-focused outcomes. Therefore capacity should also be measured. Third, activities engage organizations’ target populations in the process of change, and those activities
must be identified and measured in terms of their *output* or scope and reach. Fourth, all outcomes are not created equal. Organizations should measure *outcomes* in order to determine whether a target audience is achieving the prerequisite attitudes and knowledge (short-term outcomes), and behaviors (intermediate outcomes) that will lead to the intended fundamental changes in status and condition (long-term outcomes) relative to social values established by their missions.
CHAPTER IV

CONCEPTUAL FRAMEWORK

Introduction

The idea of bundling clusters of business methods and theories in order to adapt effective private-sector strategies to the character of the nonprofit environment, rather than attempting to transfer existing strategies, is suggested by Beck, Lengnick-Hall and Lengnick-Hall (2008, p. 155) as a way to resolve the dissonance between the sectors while harnessing the power of the strategies. In the present study, four existing theoretical models inform the creation of a conceptual framework that has the potential to deepen understanding about strategic IT alignment in the nonprofit sector.

The Nonprofit Strategy, IT, Mission and Outcome (SIMO) Alignment Model, introduced below in Figure 8, posits that while NPOs are different from businesses in terms of their goals and outcomes, the strategy types they use to achieve their social missions and some of the ways they align technology with their mission may be similar. Accordingly, SIMO is a model of three constructs – strategy typology, IT/mission alignment maturity and organizational performance -- that may be able to describe what those constructs look like in the nonprofit sector, and whether there are relationships between them. Croteau and Bergeron’s (2001) information technology trilogy, Miles and Snow’s (1978) business strategy typologies, and Luftman’s (2000) strategic alignment maturity model address these constructs as they manifest in the business sector, so those
models have been adapted to fit the character of nonprofit organizations and combined
with an updated iteration of McLaughlin and Jordan’s (2010) logic model, which
describes how nonprofit organizations achieve outcomes, to comprise the SIMO model.
This chapter will explain how the constructs fit together, how they are measured, and
why they are important to the nonprofit sector.

Figure 8: The Nonprofit Strategy, IT, Mission and Outcome (SIMO) Alignment Model. The overall model
is adapted from Croteau, A.M. & Bergeron, F. (2001). An information technology trilogy: Business
strategy, technological deployment and organizational performance. *Journal of Strategic Information
Alignment Maturity model is adapted from Luftman, J. (2000). Six IT Business Alignment Maturity
4*(14), p. 12. Organizational Performance model component is adapted from the Basic Logic Model in
Newcomer (Eds.), *Handbook of practical program evaluation*. San Francisco: Jossey-Bass, p. 57.
Overview of the SIMO Model

The Information Technology Trilogy model established by Croteau and Bergeron (2001), shown again below in Figure 8, provides a structure that addresses three synergistic aspects of IT alignment that have been suggested as critical elements that explain, predict, and inform IT alignment: strategy typology, technology deployment, and performance outcomes.

The Information Technology Trilogy Model answers the question, “Given a type of business strategy, what profile of technological deployment best helps firms enhance their performance?” (Croteau & Bergeron, 2001, p. 81). This question is important for any organization that uses technology to answer, regardless of its sector, because enhancing performance is a universal organizational goal. The model tested three

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hypotheses through the use of mailed, paired questionnaires completed by 243 companies (out of 1949 surveyed):

H1) The more specific the type of business strategy adopted by an organization, the better the organizational performance (a negative link is expected for the reactor type)

H2) There is a profile of technological deployment specific to each type of business strategy.

H3) For each type of business strategy, the more specific the profile of technological deployment, the better the organizational performance (2001, p. 82-83).

Croteau and Bergeron used Miles and Snow’s strategy typologies (1978) to describe the four characteristic strategies organizations use for mission-focused planning and decision-making. The strategy types are described in detail in Chapter 2, and their characteristics are summarized again below:

- **Analyzers** exist in stable domains that require routine, efficient processes, yet they are able to readily adapt to changes in the community. They have a well-developed strategic plan, they are conservative, workers are specialized, and they use their mission to drive service provision and identify new opportunities that are supported by data.

- **Defenders** consider their mission a strict boundary for service provision, they have a set focus and service area, formal policies and procedures, and innovation is used only to improve delivery of existing services.

- **Prospectors** are always looking for new ways to meet emerging needs, board, staff and volunteers are risk takers and innovators, procedures are flexible, and the mission is considered a “jumping off point”.
• Reactors have a flexible mission that enables them to respond to environmental demands, fill service gaps, and adapt to needs and opportunities. They tend to make disorganized service-delivery choices and focus on conserving resources and avoiding risk.

In correlating organizational performance with each of these strategy types, Croteau and Bergeron found a significant, positive relationship between the Prospector typology and technological deployment and organizational performance; no significant relationship between Analyzer and Defender typologies and performance but significant negative relationship between those types’ technological deployment and performance; and a significant negative relationship between Reactor typology and organizational performance. This test demonstrates that the model can discriminate between typologies and their influence on technology deployment and organizational performance. Further, it suggests that organizations desiring to use technology to improve performance should not only consider the technology itself, but also how the technology interfaces with business strategy.

The explanatory potential of this model is valuable because it describes the performance results of “how organizations really deploy their IT with respect to their business strategy” (Croteau & Bergeron, 2001, p. 78). I propose two adaptations to this model in order to render it appropriate for a) use within the nonprofit context and b) consideration of IT alignment maturity, rather than just deployment of technology.

First, based on the discussion of the differences between business and nonprofit outcomes, I substitute “organizational performance” components of the above model with the adapted version of McLaughlin and Jordan’s (2010) logic model described in Chapter
3. The individual elements of the logic model serve as dependent variables that fulfill Bergeron, Raymond and Rivard’s (2001) recommendation that NPOs use dynamic metrics that have the capacity to measure multiple performance criteria, beyond financial outcomes, over time.

Second, “technological deployment,” a construct operationally defined by Croteau and Bergeron (2001) by combining two previously-developed measures with a measure designed by the author, “corresponds to the way companies plan and manage information technology to benefit from its potential and effectiveness” (p. 83). This conceptual model bears similarity of purpose with SAMM (Luftman, 2011), but does not possess the same level of specificity, empirical support, validity testing, or potential to inform future strategies as SAMM. “IT Alignment Maturity” factors (adaptations described below) replace technological deployment scales as independent variables of interest in the model.

Miles and Snow’s (1978) Business Strategy Typology component of the model remains the same independent variable with the exception of the label, which is changed to “Strategy Typology” because it is being used outside of the business context.

In the SIMO model, it is first necessary to consider the specific factors that influence IT alignment maturity, 6 of which are suggested by Luftman (2000) and validated by Sledgianowski (2004) as criteria necessary in the business sector for alignment maturity, and the one new factor, culture, suggested by the literature as being unique to the nonprofit sector. The model tested whether all of the 6 previously-identified factors and new factor emerged. The factors, latent variables determined through factor analysis of survey items in which respondents indicate the levels of certain conditions in
their organizations, together create an overall IT alignment maturity score (RQ1) that interacts with the other major components of the model.

The links between the model components can be assessed through the notion of fit. Venkatraman (1989) suggests that fit can be a mediator, in the present model, for example, between independent variables, strategy typology and IT alignment, and a dependent variable, organizational performance. For example, IT alignment maturity is the independent variable that influences the mediating variable strategy typology (RQ2) which then influences the dependent variable organizational performance (RQ4). The converse is explained by the model, also: strategy typology is the independent variable that influences the mediating variable IT alignment maturity (RQ2), which influences the dependent variable organizational performance (RQ4). This design, of mediating variables, illuminates two possible ways in which IT influences strategy, either by impacting strategy or by being influenced by strategy, as suggested by Vitale, Ives and Beath (1986) and Bergeron, Buteau and Raymond (1991), the two-way arrow between IT alignment maturity and strategy typology illustrates the relationship. Strategy typology also acts as a variable mediating the relationship between IT alignment maturity and organizational performance (RQ5). It is important to break down each of these components of the model to understand the ways in which they influence these relationships.

Strategy Typology

The diversity in organizational strategy types described in the literature review and represented in the SIMO model above supports Chan’s (2002) assertion that there is
no “one size fits all” approach to increasing IT alignment maturity, a claim that followed Chan and Huff’s (1992) initial supposition that IT alignment is related to organizations’ business strategy. These conclusions bracket Miles and Snow’s assertion that “in a particular industry or environment, there is more than one way to prosper” (2003, p. ix), In fact, they suggest that some organizations may instinctively align, while others may never achieve alignment if they continue to do things the way they’ve always done them. Thus, the suggestion that all organizations travel the same path through five levels of IT alignment as reflected by the SAMM assessment (Luftman, 2011) begs additional consideration. Tests of Miles and Snow’s model contend that some business strategy types achieve alignment more readily than others, and alignment tends to look different depending on an organization’s strategy type, a concept that is tested by the new model, the process of which is also described in the Methodology chapter. Figure 10 below illustrates the way in which questions are posed about the relationship between organizational strategy and the other two elements of the model, IT alignment maturity and organizational performance.
Figure 10. The Nonprofit Strategy, IT, Mission and Outcome (SIMO) Alignment Model - The influence of strategy typology on IT/mission alignment maturity and organizational performance.
IT/Mission Alignment Maturity

Luftman’s Strategic Alignment Maturity Model (SAMM) (2000, 2003, 2011) describes the factors that enable and inhibit IT alignment in terms of six criteria that are essential, according to the model, to mature IT alignment. These criteria; communications, competency/value measurements, governance, partnership, IT scope and architecture, and skills; are defined in the SAMM model through 39 independent variables that are descriptively scaled to five distinct levels that represent stages of IT alignment maturity, as shown in Table 1 in Chapter 2. The criteria have been incorporated into a validated assessment tool (Luftman, 2003; Sledgianowski, Luftman, & Reilly, 2006) that measures organizations’ level of IT alignment maturity. The results of the assessment can be used by organizations to identify gaps in alignment and initiate discussions among organization managers and IT managers that will close those gaps.

As explained above, while SAMM in its present form has the ability to quantify levels of factors organized into six criteria groups, it fails to consider several organizational factors that are unique to the nonprofit sector. The diversity of non-financial performance outcomes, organizational structure aspects, particularly IT staffing and employment of volunteers, resource acquisition, and external stakeholders are not mentioned in SAMM. Further, consideration of organizational culture is very general in nature and is combined with factors in the “skills” criteria, which does not accurately portray that organizational culture is a distinct, significant aspect of organizations that should be given more specific consideration. The use and integration of technology in an organization is related to innovation (Luftman, 2003), locus of power (Franklin, 2011), trust between individuals, departments and organizations (Gates, 2003), learning
orientation (Calantone, Cavusgil & Zhao, 2002), and change readiness (Merkel, Farooq, Xiao, Ganoe, Rosson & Carroll, 2007), all of which are aspects of an organization’s culture. Accordingly, the proposed model incorporates the above factors except culture into existing criteria by adapting and adding scaled variables, and culture is given specific attention through the creation of an additional criterion and identification of corresponding factors. The original SAMM criteria are shown in Figure 11 below, and adaptation of the criteria is shown in Figure 12 as well as described in the Methodology chapter.

Figure 11: Six IT Business Alignment Maturity Criteria. Reprinted from Communications of the Association for Information Systems 4(14), Luftman, J., Assessing business-IT alignment maturity, page 12, Copyright (2000), with permission from the Association for Information Systems.
Organizational Performance

The adaptation of McLaughlin and Jordan’s (2010) iteration of a basic logic model described in Chapter 3 serves as the framework for measuring the performance of nonprofits in achieving outcomes and mission within the proposed model. This is a unique contribution to the knowledge base because including outcome measurement items within any nonprofit IT alignment maturity assessment tool, either at the scholar or
practitioner level, has not been done to date because of the difficulty that has been found in transferring the use of predefined metrics from the business sector to the nonprofit sector. If IT alignment truly does universally contribute to mission-focused outcomes, as is asserted in the literature, it is important to establish an outcome measurement function specific to NPOs in the proposed model and tool. The elements contained within the adapted logic model serve as indicators of organizations’ level of stakeholder engagement, capacity, activity, outputs, and short-, intermediate-, and long-term outcomes. Specific metrics through which these dependent variables will be measured are described below.

Research Questions

A question similar to that presented by Croteau and Bergeron’s (2001) ignited the SIMO study, namely how do NPOs adopt and use technology in ways that make a measurable difference in their achievement of outcomes? The literature on IT alignment informs this question and suggests that IT alignment maturity, along with strategy type, influences organizational performance, whereby it frames several specific research questions:

**RQ1: What factors influence nonprofit organizations’ level of IT alignment maturity?**

Many studies have identified and reinforced six specific factors that influence business organizations’ level of IT alignment maturity. This study investigates whether
the same factors, with one additional factor supported by the literature, influence the maturity of nonprofit organizations’ alignment of IT with their mission.

**RQ2: Is there a relationship between nonprofit organizations’ strategy typology and their level of IT alignment maturity?**

Again, the presence of relationship between business organizations’ overall strategy typology, as characterized by Miles and Snow (1978), and their level of IT alignment maturity has been well-documented in the literature. With the adaptation of existing IT alignment scales to accommodate the different character of NPOs, this study investigates whether similar relationships exist in the nonprofit sector.

**RQ3: Is there a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes?**

**RQ4: Is there a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes?**

Measuring organizational performance is challenging in nonprofit organizations because they lack the concrete, primarily financial performance metrics found in the business sector. This investigation presents a set of two metrics – extent of achievement of outcomes and influence of technology on achievement of outcomes, that provides common metrics with which to measure organizational performance across NPOs of all shapes and sizes. This set of metrics facilitates the investigation of whether NPOs, like business organizations, exhibit a relationship between their strategy typology and their achievement of performance outcomes, as well as a relationship between IT/mission alignment maturity and achievement of performance outcomes.
RQ5: Given a specific strategy typology, what is the relationship between IT alignment maturity and performance outcomes?

Similar to Croteau and Bergeron’s hypothesis that “there is a profile of technological deployment specific to each type of business strategy” (2001, p. 82), this investigation explores whether organizations that identify themselves as generally practicing one of Miles and Snow’s four strategy typologies report deploying patterns of IT alignment maturity practices in patterns that are unique to each typology.

Hypotheses

Considering again the SIMO Model in Figure 8 on page 91, the following statements comprise the hypotheses tested in this investigation, with arrows designating the hypothesized direction of relationships.

H1: Specific factors influence IT alignment maturity.

H2: There is a relationship between nonprofit organizations’ strategy typology and their level of IT alignment maturity.

H3: There a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes.

H4: There is a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes.
H5: For each of the four distinct strategy typologies, Prospector, Analyzer, Defender, and Reactor, there is a significantly different relationship between IT alignment maturity and performance outcomes.

Variables of Interest

Four categories of variables were measured through this study: demographics, strategy typology, IT/mission alignment maturity and organizational performance. Variables that were measured as characteristics or perceptions of organizations’ demographics, strategy typologies and IT alignment factors as evidenced by organizational behaviors were considered independent variables, and those that measured performance and aggregated IT alignment (combination of all factor ratings) were considered dependent variables. A list of all variables is provided in Appendix A: Variables of Interest in the Present Study.

Demographics

Several organizational and respondent demographics were assessed relative to their relationship with strategy typology, NPO IT alignment maturity, and organizational performance. Organization size, as determined by annual budget (Carman & Fredericks, 2008; Salamon, 1995); geographic location as indicated by USDA Rural-Urban Continuum Codes (USDA, 2009) and target population as determined by mission statement and reported population served were independent variables. Mission and target population were included as variables unique to the nonprofit sector relative to their focus
on social value (Auerswald, 2009) and the existence of distinct classifications of nonprofit entities focusing on specific social values defined by the National Center for Charitable Statistics (NCCS), the National Taxonomy of Exempt Entities (NTEE) (Urban Institute, 2010) because different classifications of organizations could potentially have different levels of alignment based on their target population and mission focus. These variables were measured by aligning the theme of the mission and target population with the most closely related NTEE code. The codes include arts, culture and humanities; education; environment and animals; health; human services; international, foreign affairs; public, societal benefit, religion; mutual/membership benefit; and unknown.

The relationship between strategy, alignment, performance, and the level of the independent variable of technology staffing was also examined, as directed by recommendations from pilot participants (pilot process described below) and findings from the NTEN Staffing surveys. This variable expressed the extent to which an organization dedicated human resources toward planning and managing technology, as it has been suggested that many nonprofit organizations do not have dedicated technology staff, and technology leaders have a more extensively-staffed IT function than those organizations that lag behind (Bernard & Pukstas, 2010; Hoehling, 2012a). Respondent level of education, tenure, and expressed support of IT/mission alignment were also examined to see whether they had any relationship within the model, as they were in Luftman’s (2003) original Strategic Alignment Maturity Model and SAMM assessment survey (Luftman, 2011). Budget size, as indicated by total annual organizational budget, a metric suggested by Carman (2009) and Salamon (1995) as a measure of nonprofit organization size, was maintained in the and is also a measure in SAMM.
Discrepant findings relative to rurality discussed previously illuminated the need to investigate whether the nonprofits participating in this study experience geographic barriers to technology use and consequent alignment, thus level of rurality was also identified as an independent variable indicated by an organization’s county, which is linked to a specific RUCC code by the USDA (2009). Although some counties’ populations are not spread uniformly across their geographic area, this measure is the most accurate and comparable across organizations. Finally, the availability of Internet access was also identified as a variable, as most of the communities in which Internet is not available are in rural areas (Federal Communications Commission, 2010, p. 18), which could impact an organization’s capacity to align technology with mission if the appropriate technology is not available. In Indiana, compared to other states, this was not expected to be a significant issue, as over 95% of the state has broadband access, as illustrated in Appendix B, Indiana Broadband Availability Map (Indiana Office of Technology, 2013).

Remaining variables consisted of organizations’ level of individual factors within three categories: strategy type, alignment maturity, or organizational performance as defined by the SIMO model.

Strategy Typology

As described in the conceptual model section above, strategy typology is an independent variable that has been known to influence both IT alignment and organizational performance. This variable indicates whether an organization approaches its work primarily with Prospector, Defender, Analyzer, or Reactor strategies. Strategy
typology has historically been measured using a self-typing paragraph approach. Shortell and Zajac (1990) created a self-typing paragraph approach to identify healthcare organizations’ business strategy type to fulfill the need to establish reliability and validity of the typology. Using a test-retest approach, they found that 19 CEOs identified their organizations as the same typology in 71% of cases and established moderate reliability for the strategic orientation measures (p. 823). The authors assert that although reliability and validity were established at the time of publication, they caution that in a rapidly-changing sector such as healthcare, ongoing monitoring of these measures is necessary. Further, they suggest that while strategy typology was examined in depth, the technical domain of strategy needs to be investigated (p. 829).

James and Hatten (1995) used a similar approach to measure business strategy typologies, described in one of 409 reports and reflections on the use of the self-typing paragraph approach (Google Scholar, 2011). With their use of a set of traditional self-typing paragraphs to identify perceived business strategy archetypes, which departs from Shortell and Zajac’s (1990) use of both perceived and archival measures to identify business typologies, they achieved their goal of reinforcing the validity and applicability of using the self-typing paragraph approach across multiple sectors in their study of 399 organizations in the banking industry (James & Hatten, 1995, p. 163). The findings supported Shortell and Zajac’s (1990) assertion that the self-typing paragraph has moderate convergent validity and it transfers “quite well” (James & Hatten, 1995, p. 167) to the banking sector. This support suggests that the self-typing paragraph measure has the potential to transfer quite well to the nonprofit sector, also.
Accordingly, the “strategy type” variable within the present model was measured by asking respondents to choose the paragraph that best described the type of strategy with which their organization approaches day-to-day processes and long-term work. As an existing characteristic of organizations, this was considered an independent variable. The language of James and Hatten’s unlabeled paragraphs (1995, p. 168) was modified for the purposes of this study to suit a wider audience than the business sector while maintaining the characteristic descriptions of each archetype and can be found below, as well as in the SIMO questionnaire in Appendix C.

The language of James and Hatten’s paragraphs (1995, p. 168) is modified using context, structure, and strategy elements that more closely match a nonprofit audience, using descriptions created by Brown and Iverson (2004) that maintain the characteristic descriptions of each archetype. The exact paragraphs used by Brown and Iverson are not replicated in this investigation because when they interviewed nine executives whose organizations exemplified each typology, they found that the executives felt the descriptions did not quite fit the typologies and needed to be further modified. For example, executives of organizations classified as Prospectors took exception to a phrase in the self-typing paragraph, “Given its innovation orientation, this organization does not try to maintain superiority in all the areas it serves” (p. 398), and insisted that their innovation orientation did not preclude them from pursuing excellence (p. 389), therefore that phrase is not used in the paragraphs included in the SIMO questionnaire. Likewise, a majority of Defender organizations refuted the description, “The organization is not at the forefront of service innovations” (p. 398), and several described a different kind of innovation, one that focuses on finding new approaches to increasing efficiency and
effectiveness of existing programs, rather than seeking out opportunities to create new ones. With these modifications, along with a shift to a personal voice (“we”, “our organization”), rather than a third-person to match the format of other survey items, the self-typing paragraphs are shown below:

**Defender:** We try to maintain a secure niche in our community. We offer a limited range of programs and services and we try to protect our clients/population from other organizations that try to get them to engage. We try to protect our domain by offering high quality and superior service. We may not be at the forefront of developments in the compared to other organizations like us; we concentrate instead on doing the best job possible with the programs and services we do offer. When we innovate, we do so to improve the efficiency and effectiveness of our current services.

**Prospector:** We try to meet a broad range of needs in our community, and we offer new services when new needs emerge. We value innovation, want to be 'first in' with new programs and services even if not all of these efforts have proven to be highly effective in achieving our mission. We try to respond rapidly to early signals concerning areas of opportunity, like grants and other resources, and these responses have often led us to engage in new activities and strategies.

**Analyzer:** We work to provide a stable, limited collection of programs and services, while at the same time we try to move out quickly to follow a carefully selected set of promising, evidence-based new strategies to reach
and serve our population. We are seldom 'first in' with new programs or services, but by carefully monitoring the actions of other organizations with missions similar to ours, we try to be 'second in' with a more efficient or effective program or service.

**Reactor:** We don’t have a consistent focus or service niche. When other organizations provide similar services in the same area, we prefer to conserve resources and eliminate offerings, rather than attempt to defend our service area. Although we try to avoid risks associated with new programs or services, occasionally we develop new offerings to keep up with other providers. We are usually forced to respond to environmental pressures, like funding flow and irregular stakeholder support, rather than elaborating and implementing a single strategic thrust.

**IT/Mission Alignment Maturity**

Overall IT alignment maturity is a dependent variable historically influenced by strategy type, and an independent variable that can influence outcomes. The individual factors identified in the literature as having influence on IT alignment maturity are listed as independent variables in Appendix A, Variables of Interest in the Present Study, as well as described in the individual bullet points below. The variables were measured in terms of an organization’s perceived maturity level in each factor using a 1 to 5 scale, on which descriptions of activities or organizational behaviors representing each level correspond with each number, one being the lowest level, and five being the highest level of maturity. Overall IT alignment maturity was quantified in terms of the six criteria and
corresponding factors that describe the criteria established by Luftman (2000),
Sledgianowski (2004), and validated by Sledgianowski et al. (2006) which were
discussed at length in Chapter 2, and one additional criterion, culture, established through
the present literature review. These seven criteria are illustrated in Figure 12 on page 98.
The constructs measured by the seven criteria were operationalized for the purposes of
this study as follows, terminology was adjusted to accommodate the structures and
functions of NPOs, and some variables were aligned with the new culture criteria.

   Communication Effectiveness. Effective exchange of ideas and knowledge across
all levels and functions of the organization (Luftman, 2003, p. 9). Modeled after SAMM,
seven items each measured an aspect of communication between the technology function
and other structures within an organization, including the extent to which technology
managers understand the organization’s environment, the extent to which administrative
leaders and board members understand the technology environment of the organization
(each level was measured separately), the methods used to promote organizational
information dissemination and learning, the style of communication within the
organization, the extent to which there is knowledge sharing between technology
managers and organizational leaders, and the extent to which a liaison is used to transfer
information between technology staff and other organizational staff. In this criterion, one
variable, the extent to which board members understand the technology environment of
the organization, was added beyond the variables found in the original SAMM, as
nonprofit board members are integrally involved in defining the mission, measuring
performance against the mission, and securing the resources to acquire technology
(Epstein & McFarlan, 2011).
Measuring Competency and Value of Technology. Processes in place that demonstrate the value of technology’s contribution to the organization’s purpose or mission, in terms that can be understood across all levels and functions of the organization (Luftman, 2003, p. 12). The variables examined include the type of metrics used to measure technology’s contribution to the organization; the level of technology data collection and use; the use of organizational indicators to measure the value of technology toward achieving mission-focused outcomes; the use of integrated technology and organizational indicators; the use of service level agreements and benchmarking; the extent of assessment and review of technology investments; orientation toward continuous improvement processes and the perceived contribution of technology to strategic goals. Of those variables, the type of metrics used and the level of data collection and use were originally one variable in SAMM, but were separated into two because the type of measures used and the practice of measurement are distinctively different aspects of an organization’s assessment character. The other variables were reworded to fit the nonprofit sector, otherwise they were left unchanged.

Technology Governance Effectiveness. The processes through which decision-making, authority for resources, risk, and responsibility for technology is shared among organizational managers, technology managers and stakeholders (Luftman, 2003, p. 12). The variables examined included the level of organization of technology; the extent of participation of technology personnel in organizational strategic planning; the organization’s extent of engagement in technology planning; the character of technology budgeting; the character of technology investment decisions; the level of use of technology steering committees; the ways in which technology projects are prioritized;
and the level of involvement of internal and external stakeholders (separate variables) in technology decision-making. Of those variables, the last two, addressing involvement of internal and external stakeholders, were added to the original SAMM variables, as stakeholders beyond nonprofit board and staff often are instrumental in governance and decision-making (Enright & Bourns, 2010).

**Partnership and Collaboration.** The extent and character of the relationships that exist among the organizational leaders, its technology managers and stakeholders relative to enabling and driving technology change (Luftman, 2003, p. 12). The variables examined included perceptions of technology investments, the role of technology in organizational strategic planning, the extent to which technology staff and organizational staff share risks and rewards of technology-based initiatives, the extent of formal processes that focus on enhancing partnership relationships between technology and other organizational staff, the status of sponsors and/or champions of technology initiatives, and the organization’s level of collaboration with internal and external stakeholders. The last factor, collaboration with stakeholders, was added to variables that were included in SAMM, again due to the extensive involvement of stakeholders in nonprofit operations (Enright & Bourns, 2010; Freeman, 1984).

**Technology Infrastructure Scope and Architecture.** The organization’s inventory and management of internal and external technology networks, hardware, software, and applications (Luftman, 2003, p. 12). The variables examined included the scope of technology systems; creation, use and compliance with technology standards and policies, the scope of architectural integration, or shared relationships between technology system elements; the level of an organization’s technology infrastructure
flexibility relative to organizational and technology changes; the number of different
types of internal and external technology tools and systems used by the organization. The
last two variables, the number of tools used by an organization, were added in order to
ascertain the extent to which organizations tend to rely on internal versus external tools
relative to their level of involvement of stakeholders, which is a performance variable
described below.

*Human Resources and Skills.* Human capital considerations related to technology,
including hiring, engaging, and building capacity of staff and volunteers (Luftman, 2003,
p. 12). Variables examined included the extent to which organizational leadership and
staff have tacit knowledge about technology, in other words, they understand how
technology works; the extent to which leadership and staff have explicit knowledge about
technology, experience in using technology to manage projects and solve problems; the
extent to which employees have opportunities to build skills in their primary role; the
extent to which employees have opportunities to build skills and support services outside
their primary role, the extent to which career crossover opportunities exist, the level of
organizations’ ability to attract and retain the best qualified technical professionals, and
the organization’s ability to attract and retain technologically competent volunteers.
In this criterion, several variables were added to those contained in SAMM. The
existence of tacit and explicit knowledge is described by Kearns and Lederer (2003) and
Bassellier et al. (2003) as critical to strategic IT alignment, following extensive assertions
during the previous decade led by (Kogut & Zander, 1992) and Zack (1999) that in order
for organizations to remain competitive, they must be able to translate technology
knowledge from the personal and abstract in order for it to be practical and transferrable
(Zack, 1999), in other words, the “who knows what” and the “know-how” (Kogut & Zander, 1992, p. 383) thus illuminating these two types of knowledge as critical variables within the present model. In addition, while SAMM measures the variable of cross-functional skill-building, it does not measure the extent to which individuals have opportunities to build skills related to their primary role(s), which is another variable that may influence technology adoption and alignment. If individuals do not have the opportunities to learn about new technologies, how can they leverage them toward their mission? The ability to attract and retain volunteers, also, was not included as a variable in SAMM, as businesses do not use volunteers. Accordingly, this variable was added to assess the level at which volunteer technological capability is sought and used by organizations, a variable that speaks directly to capacity.

Organizational Culture. The unique pattern of shared values, priorities, assumptions, processes and behaviors that contribute to the social, interpersonal, and strategic environment and achievement of common goals of the organization (Christensen, 2012, pp. 160-61; Luftman, 2003, p. 12; Tharp, 2009). This criterion did not exist in SAMM, but several of the variables in SAMM were directly related to the value- and priority-driven behaviors demonstrated in organizations, and several other variables related specifically to culture were identified in the literature that could be related to strategy, IT alignment and performance. Accordingly, variables measuring innovation and the entrepreneurial environment of organizations, the locus of power in technology decision-making, the character of interpersonal climate, the level of perceived trust and value between technology staff and the rest of the organization, level of readiness for change, level of disruption caused by organization and technology changes,
and ability of staff to respond to technology changes were moved to this new section
from Human Resources/Skills, Governance and Scope and Infrastructure criteria.
Inclusion of a new variable related to external stakeholders followed Enright and Bourns
(2010) and Freeman’s (1984) descriptions of their influence across organizations,
inclusion of a variable related to learning orientation was informed by Calantone et al.’s
(2002) assertion that innovation and competitive advantage require a strong learning
orientation. A new variable was also included that measured organizational staff ability to
respond to technology change addresses organizations’ capacity and readiness for change
(Anderson and Anderson, 2010), which may be a determinant of whether they can and
will, in fact, adopt and align technology with mission.

Organizations’ alignment maturity level in each of the seven criteria was
determined by aggregating ratings of each factor in that criteria area, thus alignment
maturity was a dependent variable. For example, Communication Effectiveness is one of
the seven criteria. Items 11 through 17 on the questionnaire each measured respondents’
perception of the listed factors related to Communication Effectiveness. The individual
factors are independent variables because each of them does not depend on the other. The
aggregate alignment maturity level of Communication Effectiveness, the average of the
ratings of items 11-17, is a dependent variable because a) it is affected by the individual
factor ratings and b) Communication Effectiveness as a construct can be affected by
strategy typology. An organization’s overall alignment maturity was determined by
averaging the alignment scores for the seven criteria.
Organizational Performance

In order to analyze the relationships between strategy, information technology and mission alignment, and outcomes, it was necessary to determine two primary things about organizational performance: first, the extent to which organizations engage in the distinct actions that will lead to outcomes as depicted by the logic model in Chapter 3 and second, whether respondents believe their use of technology influences those actions. For ease of understanding the measurement strategy, the logic model is provided again in Figure 13 below:

![SIMO Updated Logic Model](image)


The questionnaire measured these variables through two scaled items related to each element in the logic model. A caveat is necessary at this point: because the consideration of nonprofit organizational performance in a conceptual model of these relationships has not previously been endeavored, the methodology for testing this component of the model is purely experimental and does not incorporate existing metrics. However, the metrics discussed below have been suggested as those that can be used to assess performance in the nonprofit sector (Austin & Claassen, 2008; Martin & Ketner,
2009; Poister, 2010; Sowa, Selden & Sandfort, 2004), particularly relative to technology use (Kanter & Payne, 2012). Thus the strategy below is a confluence of what is known about effective nonprofit performance metrics, NPO technology use and the process of getting to outcomes, resulting in a measurement strategy designed specifically to address this existing gap.

The first type of organizational performance variable measured an organization’s ‘extent of performance’ of an element of the logic model (elements include stakeholder engagement, capacity, activities, outputs, and short-term, intermediate and long-term outcomes). The ordinal scales of the variables correspond to the character of the element being measured relative to its structural position within the logic model, either within the program/organizational structure or the outcomes structure. The extent to which organizations engage in organizational structure elements (capacity, activities, outputs) was measured through a ordinal scaled response spanning from not engaging at all, e.g. “We do not implement any activities that are related to our mission” to a high level of that action, e.g. “We implement many mission-related activities over the course of a year, we surpass our goals, and we are planning to expand the number and/or scope of our activities”. In addition, respondents could report that they do not measure or monitor each element. This scale was created with the consideration that a ratio scale, such as the number of activities or outputs, is not consistent in terms of range across all NPOs. One annual activity might comprise the annual scope of work of a small NPO, whereas a large NPO might implement dozens of programs.) Thus, using a ratio scale would prevent comparison across respondent organizations, a concern raised by Sawhill and Williamson (2001, p. 375).
The extent to which organizations achieve short-term, intermediate and long-term outcomes, elements within the outcomes structure of the logic model, was a variable also measured using an interval scale consisting of estimated percentages of the target population achieving each level of outcome, a metric that can be compared across organizations. Through the interval scale, respondents reported the percentage of their target population (none, less than 20%, 21-40%, 41-60%, 61-80%, 81-100%) that have achieved short-term, intermediate, or long-term, mission-focused outcomes. ‘Extent of performance’ variables were considered dependent variables in this study, as performance may (or may not) have been influenced by strategy, and technology alignment.

In the case of stakeholder engagement, a logic model element that spans both the program/organization structure and the outcomes structure, the program/organizational structure scale was used because it was a more appropriate fit than the interval scale. Stakeholder engagement is defined in Chapter 3 as an organization’s direct actions to enlist and sustain the involvement of influential and/or likely influenced stakeholders in strategic planning, implementation, and measurement of the organization’s mission, goals, capacity, activities, outputs and outcomes. An organization can more readily report the extent to which it engages stakeholders in terms ranging from “not at all” to engaging an extensive scope of both internal and external stakeholders on an ongoing basis, than it can report the percentage of stakeholders it actually engages relative to the number of potential stakeholders it could engage (often an unknown), which is how the interval scale would have to be used.
This set of variables, which will be hereby referred to as ‘extent’ variables, provided information about organizations’ process of getting to outcomes, which, in and of itself, can help determine whether achievement of outcomes (or lack thereof) is, in fact, influenced by technology or possibly a flawed logic model (Kaplan & Garrett, 2005) and/or corresponding implementation process. In other words, an organization can use all the technology in the world, but if it isn’t strategically engaging stakeholders, building capacity, implementing activities or producing outputs, it is unlikely that it will achieve any measurable outcomes.

The second set of organizational performance variables relate to ‘technology influence’, and these variables assessed whether technology tools are being incorporated into each of the elements of the logic model and, if so, the extent to which respondents believe technology has influenced the performance of each element. In measuring technology’s influence on organizational structure elements, these variables were measured in terms of the perceived influence of technology on performance, specifically in terms of efficiency, cost effectiveness, quantity, quality, and satisfaction (Poister, 2010; Sowa et al., 2004). Organizational structure elements (capacity, activities and outputs) and the structure-spanning element stakeholder engagement were measured with a balanced scale that spans from “Reduced a great deal” to “Helped a great deal”, an ordinal scale, again, designed deliberately without quantitative metrics in order to facilitate comparison across all types and sizes of NPOs. Items measuring outcomes structure elements (short-term, intermediate, and long-term outcomes) were presented with a similar ordinal scale, with which respondents designated whether technology
influences target populations’ achievement of each level of outcome not at all, a little bit, somewhat, a great deal, or exclusively.

While the indicators for IT alignment maturity and strategy typology are, in large part, already established, and those that are not were slated to be validated the current study, all of the performance measurement items included in the survey are new to the field. As demonstrated in the literature review above, consideration was given to consensus of the field regarding measures of nonprofit performance outcomes (Balser & McClusky, 2005; Carman, 2009; Carman & Fredericks, 2008; Costa et al., 2011; Ebrahim & Rangan, 2010; Hatry, 2006; Kibbe, Lampkin, Winkler, Kerlin, Hatry, Natenshon, Saul, Melkers & Sheshadri, 2006; LeRoux & Wright, 2010; Light, Hubbard & Kibbe 2004; Morley et al., 2001; United Way, 1996; W.K. Kellogg Foundation 2004; Wholey et al., 2010). The measures described in this section were identified as potential metrics for assessing outcomes across all types of NPOs. Once the list was created, I used a set of questions presented by Wholey et al. (2010) as criteria with which to further evaluate the appropriateness of the measures prior to including them in the survey:

- Are the measures relevant to the activity, process, or behavior being assessed?
- Are the measures important to citizens and public officials?
- What measures have other experts in the field used?
- What do stakeholders believe is important to measure?
- Are newly-constructed measures needed, and are they credible?
- Do the measures correlate to a specific, agreed-upon standard or criterion measure that is credible in the field?
• Do the measures correlate with other measures in ways consistent with existing theory and knowledge?

• Do the measures predict subsequent behaviors in ways consistent with existing theory and knowledge? (2010, p. Kindle Location 1046 of 15122).

The answers to these questions are justified by the literature, thus providing another level of confidence for the conceptual model.

By implementing this performance measurement component of the SIMO model, it became possible to assess the extent to which NPOs measure and monitor their process of getting to outcomes, as well as surmise the influence of technology on their organizational performance.

Summary

The Nonprofit Strategy, IT, Mission and Outcome (SIMO) Alignment Model provides insight to the query of whether strategy drives IT alignment, and whether IT alignment improves organizational outcomes. It informs the creation of an assessment tool with which NPOs can identify their strategic IT alignment profile, which will indicate specific organizational strategies and alignment strategies they can adopt to improve upon their efforts to align IT in ways that will help them better achieve outcomes and meet their missions.

SIMO may suggest that specific organizational strategy types and IT alignment maturity profiles positively influence organizational performance. It proposes that specific IT alignment maturity profiles are characteristic of particular strategy types, and,
in order to optimize performance, overall organizational strategy type must be matched with specific IT alignment profiles. This conceptualization of alignment has the potential to inform organizational planning, training, and technical assistance akin to a diagnostic-prescriptive approach to teaching and learning in which gaps are identified and skills are taught that can fill the gaps (Manzo, Manzo & Albee, 2003). If an organization is struggling in achieving outcomes, SIMO and a corresponding assessment tool can identify the organization’s strategy typology, assess levels of IT alignment criteria, and examine the levels of performance being achieved (or not achieved). With this information and online or personal technical assistance, the organization can learn and apply specific tactics to adjust strategy and increase alignment in ways that will improve outcomes.

The first step toward using SIMO to add value to the nonprofit sector is, of course, to test it in the trenches. The process through which the SIMO survey was created, piloted, presented, and how the logic of the model was analyzed in the nonprofit sector is the focus of the next chapter, Methodology.
CHAPTER V

METHODOLOGY

Introduction

Previous chapters presented a gap in the nonprofit knowledge base, the absence of a means to identify and measure relationships between NPO strategy typologies, IT alignment maturity, and organizational performance, and proposed a theoretical model, SIMO, to close this gap. The purpose of this chapter is to describe the methodology used to test the SIMO model in the nonprofit sector. It details the research design, population, sampling strategy, measurement instrument, data collection procedures, methods for statistical analysis and, finally, outcomes of data collection.

Research Design

A cross-sectional, correlational survey design was used in this investigation. Cross-sectional designs, according to Creswell (2005), “examine current attitudes, beliefs, opinions or practices” (p. 356). Correlational design, specifically explanatory correlational research is used to “explain the association between or among variables” (p. 326). Accordingly, this study used a survey questionnaire to gather data from nonprofit organizations that have received grants from Community Foundations serving Indiana counties. The items examined the associations or relationships among variables that
measure nonprofit organizations’ strategy typology, IT alignment, and organizational performance, variables described in the SIMO model.

Data generated from the questionnaire was analyzed and used to validate the model with the intent to generalize findings to “all Indiana Community Foundation grantees”. The survey approach has been implemented in a wide variety of investigations of IT alignment and strategy typology (Bassellier & Benbasat, 2004; Bassellier et al., 2003; Chan & Huff, 1992; Chan et al., 2006; Croteau & Bergeron, 2001; Evers, 2010; Flores, et al., 2008; Gutierrez et al., 2009; Kearns & Lederer, 2003; Kearns & Sabherwal, 2007; Luftman, 2000, 2011; Sabherwal & Chan, 2001; Sledgianowski, et al., 2006; Tallon & Kraemer, 2003).

Survey data provided the means by which to explore whether there is a relationship between organizations’ strategy typology, their alignment of technology with their mission, and their performance. The next section describes the process through which the model was tested in authentic settings.

Methodology

The methodology employed in this investigation began with the development of the survey instrument and consideration of HSIRB protocol, followed by a pilot test of the instrument to establish content validity and assess functionality of the instrument. The pilot test informed modifications to the survey, which was then prepared in final form for implementation. The survey sample was identified using stratified random sampling, gatekeepers were approached for assistance in recruitment, participants were recruited,
the survey was deployed, and data was collected. Throughout the investigation, Dillman, Smyth and Christian’s (2009) Tailored Design Method guided the design and implementation of the survey. This method instructs investigators to consider social exchange theory, primarily matching methodology to the motivations of potential respondents, as the basis for decisions regarding survey mode, layout, content, sampling, contacts, incentives and technology. Specific strategies were used to build rapport with respondents, make the survey completion process as easy as possible, minimize survey error and increase response rate. Care was taken to make the survey visually appealing, flow logically, and easy to understand through the use of textual and spatial cues.

This brief overview of the process might lead one to surmise that implementation of the methodology was seamless, went according to plan and confirmed best practices. As will be described herein, that was not exactly the case. Many lessons were learned and great insight about the character of nonprofit relationships was gained, along with a data set that was adequate for analysis and hypothesis testing.

Survey Instrument

The Nonprofit IT Alignment Maturity 87-item questionnaire consists of five sections: an organizational demographics section (8 items), a strategy typology section (1 self-typing paragraph item), an IT/mission alignment maturity factor self-rating section modeled after the SAMM questionnaire (56 items) (Luftman, 2011), an organizational performance section (14 items), and an individual demographics section (6 items). The SAMM questionnaire was used as a template for the present survey and, in several instances; the same or similar questions were used to gather similar information from
NPO respondents that had been gathered from business-sector respondents using SAMM. The questionnaire was created using Survey Monkey and made available either electronically to participants using a link unique to each individual participant, or in paper form sent via U.S. Mail. The questionnaire is located in Appendix C.

The organizational description section, a collection of fill-in, open-ended and multiple choice items, asks respondents to provide information about the structure and staffing of the organization, budget size, mission statement, target population, and Internet access, information requested in order to determine whether this study reinforced findings about NPO characteristics described in the literature review.

The strategy typology section consists of a set of four paragraphs, each describing the actions and decision-making behaviors of one of the four strategy typologies described above. Respondents chose one of the four paragraphs and did not have an “other” or “do not know” option.

IT alignment maturity factor items in the SIMO instrument are structured as ordinal-scale items in exactly the same way they exist in the SAMM instrument (Luftman, 2011), with descriptions of how each factor would be demonstrated at each level, 1-5. Permission was obtained to modify SAMM for the purpose of this investigation, and is included in Appendix D. The content of this section includes items that measure the same constructs measured by SAMM that are applicable to all organizations, along with additional constructs described above that address unique characteristics of NPOs. A majority of the items were reworded for the purposes of this study to suit a nonprofit audience while maintaining the characteristic descriptions of each construct as presented in previous literature. The changes incorporate descriptions
found in Heye’s Five Stages of Managing Technology assessment matrix (2009), which was designed specifically for use in the nonprofit sector, as indicated in the Variables of Interest table located in Appendix A.

Organizational performance items are scaled items. On the ‘extent’ items, respondents could choose one level on each scale. ‘Technology influence’ items for each logic model element were configured as matrix questions, in which respondents chose one level of influence on each scale for each of the four performance measures (efficiency, cost effectiveness, quantity, quality and satisfaction of the element). This design was used to eliminate the need for respondents to re-read the same information in multiple, similar questions, as directed by Dillman, Smyth and Christian (2009).

The final section of the survey requested respondent demographic information, including position, length of tenure, education level, experience with technology, and the level at which respondents would support IT alignment efforts. Respondents had the option to provide their name, organization and e-mail address if they wished to receive their Custom Technology Alignment report, a sample of which is provided in Appendix J. The respondent information section is located at the end of the survey specifically to adhere to Dillman et al.’s suggestion to establish rapport with a survey respondent before asking sensitive questions (2009, p. 159), such as whether or not respondents would support the practice being measured.

Once the preliminary survey was drafted, it was submitted, along with proposed informed consent documentation, to the Western Michigan University Human Subjects Institutional Review Board (IRB), which responded with the determination that approval was not needed for the study because its “aim is to study organizational strategies and
outcomes; you are not collecting personal identifiable (private) information about human subjects” (WMU-IRB, 2012, Appendix E).

Pilot Testing

Although SAMM (Luftman, 2011), the questionnaire upon which the SIMO instrument was modeled, demonstrated acceptable convergent construct validity (Cronback’s coefficient alpha values between .71 and .83) among the criteria factors in the business sector (Sledgianowski et al., 2006), it was not wise to assume that these assessments would transfer to the nonprofit sector, particularly with the semantic modifications and addition of other models and corresponding survey components, a caution clearly communicated by Ritchie and Sherlock (2009) in their guidance on how to adapt surveys for nonprofit research. In order to establish preliminary validity for the questions relative to the nonprofit sector, NPO practitioners were called upon to review the modified and new items, as recommended by Creswell (2005, p. 164). Further, the entire questionnaire was piloted as recommended by Wholey et al. (2010) in order to identify and rectify inconsistencies in interpretation, and data was used to assess additional types of validity, as well as reliability.

In order to determine whether the questionnaire demonstrated appropriate fit and content validity relative to the nonprofit sector, working relationships with nonprofit organizations were leveraged in order to engage expert colleagues who have longevity and experience in their leadership roles to share their expertise to examine, complete, and help refine the instrument. Leaders of 22 purposefully-selected NPOs, representing each of the three RUCC groups (metropolitan, non-metro, and rural), were invited to critique
and pilot test the instrument, of which 12 agreed to participate. Steve Heye, author of the Five Stages of Managing Technology (Heye, 2009), was also invited to participate in the pilot because his model was the conceptual foundation for the study. (Heye is also a technology leader of a metropolitan NPO in an adjacent state.) In order to identify any incongruence between the instrument content and the target population, in other words, to make sure nonprofit practitioners would understand and accurately interpret what the survey was asking, as recommended by Dillman et al. (2009), pilot participants had the opportunity to take the survey and provide quantitative and qualitative feedback. Each completed the online Survey Monkey questionnaire, along with a set of evaluative Likert-type rating questions accompanied by open-ended questions requesting their feedback on several criteria suggested by Dillman et al. (2009):

- Helpfulness of instructions – 100% rated good or excellent
- Clarity of instructions – 87.5% rated good or excellent
- Clarity of question wording – 66.6% rated good or excellent 33.3% rated fair
- Appropriateness of question wording to the NPO sector – 62.5% rated good or excellent, 37.5% rated fair
- Order of the survey items – 88.9% very, somewhat or just logical, 11.1% confusing
- Visual design of the survey – 100% rated very, somewhat or just pleasing and organized
- Navigation Process – 100% rated very easy or easy to navigate.

The expert rating and feedback process provided more comprehensive information about the survey than what is suggested by Waltz and Bausell’s (1989) Content Validity Index.
Suggested changes included incorporating a progress bar into the survey, reconsidering the use of the logic model graphic, and a number of wording suggestions for specific items that informed modification to improve the instrument’s fit for the nonprofit sector.

To assess preliminary factorial validity, a factor analysis and principal components analysis was done to determine whether the groups of scale items that measured model criteria (IT/mission alignment and performance measurement) made intuitive sense (Field, 2003). This analysis was done tentatively with the understanding that the small sample size (13) could result in an inconclusive analysis. A principal components analysis (PCA) was conducted on all of the scale items together with oblique rotation (direct oblimin) which resulted in the determination that “This matrix is not positive definite” due to small sample size, thus preventing comprehensive factor analysis. Instead, a PCA was conducted with the same rotation on each criteria group of scale items (7 IT/mission alignment criteria and performance measurement criteria). The Kaiser-Meyer-Olkin measure confirmed that 7 of 8 groups of items had an insufficient sample size for analysis, all but one of the KMO values were >.5. Nevertheless, eigenvalues expressing commonality between the items after extraction were obtained for each item. All items for all eight groups had eigenvalues greater than Joliffe’s criteria for retention of .7 (Field, 2009, p. 641). Scree plots were ambiguous, which was logical, given the small sample size. Further, for every group, the Pearson product-moment correlation coefficients for all items had at least one correlation greater than .3, the threshold for retention recommended by Field (2009, p. 657) and none had coefficients greater than 9. Accordingly, all items were retained.
Reliability, the likelihood that the SIMO subscales consistently reflect the constructs they purport to measure, was assessed using Cronbach’s $\alpha$, which, in SPSS, splits the data into two halves and computes correlations in all possible combinations in order to find the average covariance between items in each criteria and across all factors. The communication subscale consisted of 7 items ($\alpha = .595$), the competency subscale consisted of 8 items ($\alpha = .691$), the governance subscale consisted of 9 items ($\alpha = .949$), the partnership subscale consisted of 6 items ($\alpha = .358$), the scope subscale consisted of 6 items ($\alpha = .932$), the skills subscale consisted of 9 items ($\alpha = .833$), the culture subscale consisted of 10 items ($\alpha = .868$), and the performance measurement subscale consisted of 26 items ($\alpha = .991$). Again, consideration was made of the small pilot sample, with which a majority of the subscales had values above Kline’s recommended cutoff of psychological constructs of .7 (in Field, 2009, p. 675). The three subscales that did not reflect a Cronbach’s $\alpha$ above .7 were retained as written, tentatively, because Kline asserts that these type of constructs can produce values even below .7 because of their diversity (in Field, 2009, p. 675). The reliability test was run again with the full sample, to challenge this preliminary assessment, the results of which are discussed in the results section.

Because no modifications were made to the survey to change its nature of “not collecting personal identifiable (private) information about human subjects”, it was not necessary to resubmit the revised survey to HSIRB, since the project had been initially judged as one in which approval was not needed. Even with this status, it was important to provide a level of confidence to participants that the information they shared would be handled confidentially, and that risks of participation would be minimized. Therefore, a
consent document was included in both the invitation to take the online survey (Appendix F) and attached at the beginning of the online and print surveys as shown in Appendix C. Additionally, modifications did not change the material content of the questions relative to the criteria or factors, therefore it was not necessary to repeat validity testing. With preliminary validity and reliability established and the intention to reassess both upon increasing sample size, identification and recruitment of subjects began.

The process of identifying subjects was unexpectedly iterative, due to several challenges in access. These challenges spanned both sampling and data collection phases. Therefore, the next section describes the extent of the challenges, followed by descriptions of sampling and data collection procedures.

Subjects

Individuals working in nonprofit organizations who have primary responsibility for managing and making decisions about technology were invited to participate in this study, and the nonprofit organization was the unit of analysis, a population that mirrors that used by Zorn et al. (2011) in their investigation of ICT use in New Zealand. While Kearns and Lederer’s (2000) approach to investigating IT alignment by surveying matched pairs of CEOs and technology managers would be most insightful, the unique NPO characteristic of often having ‘whoever’s available’ serve as the technologist rendered this strategy impractical because often that person is the CEO.

The survey population for this study consisted of all nonprofit organizations that have had grantee relationships within the past two years with Community Foundations located in Indiana (N≈4,000). Access to grantee organizations’ contact information was
gained through information provided either by Community Foundations directly or gleaned from Community Foundation or grantee websites, a process that will be described in detail below. The rationale for choosing nonprofit leaders responsible for making technology decisions, and for using Community Foundations as a gatekeeper was based on the need for adequate coverage, establishment of trust, acquiring access to respondents, and demonstrating benefits of participation, all of which are described by Dillman et al. (2009) as tailored survey design methods that are critical to adequate survey response rates and prevention of coverage and sampling error.

Tailored design consideration #1: Coverage. Coverage was considered relative to access to Community Foundation gatekeepers and the geographic and population distributions of the communities they serve. I currently have well-established relationships with six Community Foundations. Likewise, I have established relationships with a handful of United Way Directors and belong to networks in which United Ways participate. Therefore, my perceived knowledge of the organizational structures and functions of each was expected to facilitate navigation of access and entry relationships. However, I faced unexpected challenges in terms of access due to issues I failed to consider and some I had no knowledge of prior to executing my coverage and sampling strategy. These challenges are described herein.

Community Foundations or United Ways were both considered as gatekeepers to the nonprofits that operate in Indiana communities, as both types of organizations have stakeholder relationships with NPOs through the provision of funding and technical assistance. However, a preliminary Internet survey of the accessibility of the agencies’ executive directors/chief executive officers (ED/CEOs) showed that 82% of Community
Foundation executive directors are personally identified and accessible via e-mail and
direct phone, while only 22% of United Way leaders are directly accessible. Further, the
service parameters of Community Foundations appeared to be more defined. The Indiana
Grantmakers’ Alliance website lists all Indiana Community Foundations (IN Community
Foundations, n.d.), which consists of 94 Community Foundations serving 92 Indiana
counties, but it wasn’t until after contacting some of them that it was learned that a few
counties are served by more than one Foundation. The distribution turned out to be rather
complicated, a finding that is described below. In initial comparison of coverage, there
are 62 United Way agencies in Indiana (Indiana Association of United Ways, 2012),
some serving multiple counties, some serving regions, and some serving individual
counties. Thus using Community Foundation agencies as the survey population appeared
to facilitate more comprehensive coverage statewide and more distinct points of access
and entry than using United Ways.

Further, Lilly Endowment, Inc. (the Endowment) is involved with all Community
Foundations through its provision of start-up and sustainability funding, which provides a
level of uniformity not found in United Ways at present, although the Endowment is
working on establishing a similar program for United Ways and United Funds (Lilly
Endowment, Inc., 2011). A brief history of this involvement provides insight into the
relationship.

Indiana’s 94 Community Foundations and the Lilly Endowment are unique in
their collective history. In 1990, every existing and emerging Community Foundation in
the state was provided the opportunity to receive a significant ($1 million or more)
matching gift from the Endowment as a nest egg to encourage local giving through Phase
I of the Giving Indiana Funds for Tomorrow (GIFT) program. To date, the Endowment has provided similar incentives in four additional phases of GIFT for communities to continue to build their local endowments and sustain the “quality of life and civic vitality of Indiana communities” (Lilly Endowment, Inc., 2011). This support provided to all Indiana Community Foundations served, for this study, as a constant that is both a benefit and a limitation to generalizing findings to “grantees of all Community Foundations”. The benefit is that all Indiana Community Foundation grantee organizations participating in the study have access to a significant, stable source of funding for technology if they have the capacity to write a request to their local Foundation and it is funded (personal communication, J. Danick, Steuben Community Foundation, September 13, 2011). The limitation is that not every state is fortunate to have such a generous corporate benefactor, so Community Foundations in other states may have disparate levels of financial support, which may affect NPOs’ technology resources and capacity. Accordingly, the present methodology proceeded with the understanding that the insights gained can only be generalized to those nonprofit organizations that are supported by Community Foundations with healthy, productive endowments. This relationship was also considered as it relates to building trust with and gaining access to study participants.

**Tailored design consideration #2: Trust.** In order for individuals to participate in the survey, it needed to seem important and legitimate to them, a characteristic of tailored survey design that builds trust and positively influences response rates, according to Dillman et al. (2009, p. 28). In order to build trust at multiple levels, an attempt was made to enlist the support of the Lilly Endowment for this project by requesting that its representative provide a letter of support or, at minimum, a statement of endorsement that
could be included in communication to gatekeeper Community Foundations. This would establish trust by establishing the support of a legitimate authority (p. 28). The original intent was to provide an e-mail letter of introduction to the project to each Community Foundation director that included this endorsement from the Endowment, then follow up with a phone conversation in which Community Foundation directors would be asked to assist in connecting with their grantees by sending a pre-notice e-mail to their grantee list and encouraging participation in the study. E-mail and phone communication took place with the Endowment’s Vice President of Community Development, the project was described and a request was made for the Endowment’s support. While the representative was interested in the project and felt it had the potential to yield valuable findings, it was the perspective of the Endowment that its relationship with Community Foundations was one based on mutual respect, a facet of which involved refraining from making requests that were outside the relationship’s established boundaries. The Endowment did not want Community Foundations to feel obligated to comply with a request from an outside source that had no affiliation with the work in which it and Community Foundations were engaged (A. Yackey, personal communication, August 6, 2012). The option was offered of having the idea presented to the Indiana Grantmakers’ Alliance, an Endowment partner organization, by the Endowment staff, with a request that the Alliance provide a contact list of Community Foundation directors. With multiple follow-up calls this offer never materialized, which was not a problem because contact information for Community Foundations could be retrieved from the Indiana Grantmakers’ Alliance website. So, unfortunately, it was not possible to engage the Endowment in helping build the trust of Community Foundations or their grantees, which reduced the likelihood of Community
Foundation support of the project and, ultimately, response rate, because the influence of the Endowment as a legitimate authority was not attached.

Another level of trust-building was then pursued, sending project introduction e-mails to Community Foundation directors (Appendix G), providing them with information about the project and asking them to provide a list of their grantees and send a pre-notice e-mail to their grantees one week prior to survey distribution to encourage grantees’ participation. As influential stakeholders in each of their grantee agencies, Community Foundations can rightfully encourage practices that they think are important for nonprofit success, such as the mission-focused use of technology. Like the Endowment, Community Foundations are viewed as a legitimate authority. It was expected that grantee agencies would be more likely to agree about the importance of the project and respond to the survey if it was legitimized through written support of the Community Foundation than if participation was invited solely by an unknown researcher from an out-of-state university. An e-mail pre-notice template was provided to the Community Foundation representatives (Appendix H), which asked for help, included information about the importance of the survey to building nonprofit technology alignment capacity, encouraged support of the group value of increasing mission-focused outcomes, and described an incentive for completion, provision of a custom technology alignment report and technical manual to each respondent. These elements, asking for help, establishing importance, appealing to group values, and providing tangible rewards, are all recommended by Dillman et al. as effective strategies for increasing the likelihood of positive social exchange and participation (2009, pp. 23-25). However, this trust-building strategy was unsuccessful across all Community Foundations.
While discussing the project and the gatekeeper function by phone with an Executive Director from the list of randomly-sampled Community Foundations, insight was gained on the communication patterns and cultural norms of Community Foundations. She first explained that a Community Foundation’s Executive Director would always be the most appropriate person to contact, an assertion confirmed by triangulating with verbal responses from four colleagues from other Community Foundations. She then explained that she was not sure whether sharing the grantee contact list would be within the trust boundaries established between a Community Foundation and its grantees, and that she needed to seek approval from her board to release the contact list. She warned that this could be the case with other Community Foundations (it was, in the case of 12 Community Foundations, including hers.) She then proceeded to provide enlightenment on the presence of Community Foundation alliances, something that was not even on the radar.

The distribution of Community Foundations and the counties they serve is not unlike the arrangement of United Ways, although it is unsystematic. Over the past few years, 17 Community Foundations have consolidated their administrative staffing, back room, capacity-building and outreach functions by forming four alliances, most of which were the result of informal conversations during and after Indiana Grantmakers’ Alliance meetings. In these alliances, some individual Community Foundations maintain their local identities, as well as function as part of the larger allied organization. In other alliances, the local Community Foundations have legally consolidated into a larger organization (C. Becknell-Lucas, personal communication, October 1, 2012). Thus, some Community Foundations serve multiple counties, and others work on behalf of individual
counties. Therefore, in communicating with Community Foundations, at times involvement requests were made of grantees of one county, and in others a number of counties. As will be described in the sampling methodology section below, this complicated the sampling procedure somewhat. That challenge aside, all Community Foundations serving randomly-sampled counties were contacted via e-mail with the request for support and involvement, which was followed by an additional e-mail and phone call to those Foundations that did not respond.

*Tailored design consideration #3: Access.* Following the established methodology of asking Community Foundations to serve as gatekeepers and promoters of the project was expected to provide direct access to potential respondents, but that was not the case. Four (4) Community Foundations sent their grantee contact lists and sent out a pre-notice e-mail to their grantees, one (1) sent a contact list but refused to send a pre-notice, and one sent a pre-notice but did not feel comfortable sending a contact list. Of those that sent both, the Foundation that serves the investigator’s home county also encouraged the investigator to promote the survey during a capacity-building presentation to all local NPOs. The lists provided contact information for 592 grantee organizations. In addition two (2) Community Foundations sent annual reports listing the names of grantee organizations, and two (2) responded with reference to websites that had grantees listed in a community database. Twelve (12) Foundations responded that they would not participate, three of which criticized the length of the survey, and two suggested contacting the Indiana Grantmakers’ Association and request that they ask grantees to participate. In total, of the 50 organizations contacted, 30 did not respond to an e-mail or
phone message or an administrative gatekeeper did not pass on information or suggest a
call-back, results of which are illustrated in Table 3 below.

Table 3

*Community Foundation Gatekeeper Recruiting Results*

<table>
<thead>
<tr>
<th>Investigator action</th>
<th>Community Foundation response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contacted</td>
</tr>
<tr>
<td>Email Request for grantee list</td>
<td>50</td>
</tr>
<tr>
<td>Email follow-up request for participation</td>
<td>36</td>
</tr>
<tr>
<td>Phone follow-up request for participation</td>
<td>32</td>
</tr>
</tbody>
</table>

This collective response led to an alternative process for gaining access --
collecting contact information for 1,444 Community Foundation grantee organizations by
surfing the Web to find grantee lists on Community Foundation websites, then looking up
each grantee organization individually. Over five months were spent gathering contact
information with which to invite organizations to participate in the survey. The process of
establishing trust with gatekeepers in order to gain access to a target population is
difficult process, but when it is successful, the results are also successful, as illustrated in
Table 4 below, which compares the response rates of grantees when Community
Foundations acted as gatekeepers by providing information and encouraging
participation, to response rates when the Foundations were not involved in the process.
Overall, the response rate was nearly 6% higher when Community Foundations were
involved.

Assuming that the relevance and importance of the topic, social value and
incentive of participation would be compelling enough to lead Community Foundation
staff to believe that the rewards of participating would outweigh the costs of responding
was overshadowed by the tenets of existing relationships, time constraints, and
disinterest. With this knowledge, grantees were invited to participate one-by-one, and several strategies were incorporated to promote the benefits of participation to survey participants.

*Tailored design consideration #4: Benefits of participation.* Internet and postal mail methods were used to invite individual NPO leaders to complete the SIMO survey. Nearly all of the positive social exchange strategies suggested by Dillman et al. (2009, pp. 23-25) were incorporated to attempt to motivate people to participate. In the initial personalized contact, information was provided about the purpose of the survey, the individual was asked for help using a tone of positive regard, and the message promoted the NPO group value of increasing the achievement of positive outcomes. Respondents were informed that by completing the survey they would be providing valuable information that would be used to create a tool to help all nonprofits use technology in ways that will improve the extent to which they meet their missions. A tangible reward

### Table 4

*Comparison of Response Rates when Community Foundation Did or Did Not Act as Gatekeeper*

<table>
<thead>
<tr>
<th>Community Foundations that acted as gatekeepers</th>
<th>Survey Distribution and Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grantee list provided</td>
</tr>
<tr>
<td>Central Indiana Community Foundation(^1)(^2)</td>
<td>298</td>
</tr>
<tr>
<td>Legacy Foundation(^1)(^2)</td>
<td>67</td>
</tr>
<tr>
<td>Noble County Community Foundation(^1)</td>
<td>74</td>
</tr>
<tr>
<td>Putnam County Community Foundation(^1)(^2)</td>
<td>64</td>
</tr>
<tr>
<td>Spencer County Community Foundation(^2)</td>
<td>59</td>
</tr>
<tr>
<td>Steuben County Community Foundation(^1)(^2)(^3)</td>
<td>30</td>
</tr>
<tr>
<td>Total response from Community Found. gatekeeper lists</td>
<td>592</td>
</tr>
<tr>
<td>No Community Foundation gatekeeper involvement</td>
<td>1444</td>
</tr>
<tr>
<td>Overall distribution and response rate</td>
<td>2036</td>
</tr>
</tbody>
</table>

\(^1\)Community Foundation provided list of grantees and their contact information
\(^2\)Community Foundation sent a prenotice letter to all of their grantees
\(^3\)Investigator's home county, survey was promoted at a Community Foundation presentation
was also offered -- in order to provide value to their organizations, each survey respondent would receive a custom report of their level of IT Alignment Maturity and a Technology Strategy Guide compiled from current theoretical and practitioner literature that provides suggestions of how they can increase their IT/Mission alignment in each of the 7 factor areas measured.

Participants were informed that the custom report would be available only to organizations who were invited to participate. A similar incentive structure was used by Finn, Maher and Forster (2006, p. 282) and resulted in a 9.6% response rate.

Additionally, several strategies for reducing costs of participation were used: providing the convenience and choice of electronic response through the use of SurveyMonkey or paper response through a mailed, postage paid survey (Dillman et al, 2009, p. 25), invitees were not made to feel subordinate (p. 26), and the survey did not require sharing of personal or sensitive information, rather it focused on the organization and their role in it in the survey items (p. 26). One of the recommendations not heeded was “making the questionnaire short and easy to complete” (p. 26), which, because of the character of the model being tested, was impossible. As mentioned above, several invited participants shared that the length of the survey and time required to complete it was unrealistic and they would not participate. However, invitees were advised of the maximum amount of time it would take them to complete the survey, so that they would clearly understand the expected investment necessary to receive the reward.
Sampling

The source of the sampling frame for this study, a map of Indiana counties and the Community Foundations that serve them, provided confidence that all Indiana counties would be equally represented in terms of geographic coverage. The list included the contact information for every Community Foundation serving every county. The counties were stratified by rurality using three levels derived from the U.S. Department of Agriculture Rural-Urban Continuum Code (RUCC) (USDA, 2009). Then half of the Community Foundations were randomly selected from the stratifications in order to maintain representative geographic coverage.

The Community Foundations sampled needed to accurately reflect the geographic distribution of nonprofit organizations throughout the state in terms of rurality. This distinction is important because several investigations suggest that geographic location contributes to NPOs’ adoption and use of technology with rural areas lagging behind (Forman, Goldfarb & Greenstein, 2005; Loving, Stoecker & Reddy, 2011; Trusty, 2011), but none are conclusive. Further, rurality is explicitly implicated as a barrier to technology access in assessments of Internet access across the U.S. that show only 60% of households with broadband Internet Access (National Telecommunications and Information Administration, 2011; Severson, 2011). However, the state of Indiana is not characteristic of this finding, as less than 10% of the geographic area of the state is reported to lack broadband access, as shown in Appendix B (Indiana Geographic Information Office, 2013).

In order to distinguish levels of rurality in the sampling frame, first the county or counties that each Community Foundation serves was identified, then the Community
Foundations were listed alphabetically by county and each county’s rurality was identified using RUCC levels. The sampling frame was stratified into three groups: Community Foundations operating in metropolitan areas (RUCC levels 1-3), nonmetropolitan areas adjacent to metropolitan areas (RUCC levels 4-6) and nonmetropolitan, non-adjacent or rural areas (RUCC levels 7-9). The characteristic of rurality dictated the use of purposeful stratified random sampling to select organizations for inclusion, described by Miles & Huberman (1994) as a strategy to delineate subgroups that have been found to differ in technology use in past research, allow for comparisons between them, and add credibility to a large, purposeful sample.

Table 5 reflects the distribution of Community Foundations across the three RUCC groups, which, for the purpose of this investigation are referred to as “metropolitan” “nonmetropolitan” and “rural”. The table also displays the percentage of all counties represented by each of the three groups.

As described above, Indiana counties are not served by Community Foundations at a one-to-one ratio. Rather, 17 Community Foundations participate in alliances, each of which has its own membership character. Therefore, in cases of local Community Foundations participating in alliances, it made sense to first use purposeful, stratified random sampling to select half of each stratification, rounding up where necessary (n=48), then address the issue of alliances.

Microsoft Excel (Microsoft, 2010), Adobe Acrobat (Adobe, 2012) and the strategy recommended by Survey Monkey to achieve a random sample using Excel (E., 2012) were used, with instructions modified when necessary to accommodate idiosyncrasies of the software packages. Each RUCC category was first sorted
Table 5  

*Level of Rurality Represented by Proportions of Indiana Community Foundations*

<table>
<thead>
<tr>
<th>RUCC Level</th>
<th># of Counties Served</th>
<th># of Indiana Community</th>
<th>Population and Rurality Category</th>
<th>% of all Counties</th>
<th># to randomly select to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>49</td>
<td>46</td>
<td>Metropolitan</td>
<td>53%</td>
<td>25</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>35</td>
<td>34</td>
<td>Nonmetropolitan</td>
<td>38%</td>
<td>18</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>10</td>
<td>10</td>
<td>Rural</td>
<td>11%</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>90</td>
<td></td>
<td>100%</td>
<td>48b</td>
</tr>
</tbody>
</table>

*a Two Indiana counties each host two Community Foundations, so they are included twice in the listing of Community Foundations. 

b In order to provide the opportunity for all NPOs served by an umbrella CF to participate, two additional organizations (n=50) were added to the list, those that were served by those CFs who were randomly selected for other counties.

alphabetically by county name. Next, random numbers were assigned to each county in the category using the Excel “=RAND” function. Attempts to sort the random number column in ascending order so that the first half of the category could be selected did not work. Each mouse click caused the random numbers to re-randomize. Therefore, after assigning random numbers, the lists were captured and printed as Portable Document Files (PDFs) (Adobe, 2012) in order to freeze the random number assignments. Then the PDF files were opened in Adobe Acrobat Pro, the files were recognized as text, the text was copied and pasted into Excel and, frustratingly, the columns disappeared. The rows
were then formatted as numbers in Excel, sorted in ascending order, and the first half of each list was highlighted, per the stratified sample calculation. Then the Excel file was saved with the sample highlighted. This process was repeated for each of the three RUCC stratifications, which resulted in three Excel lists of counties/Community Foundations. The lists were merged with highlighted colors intact, and the number of Community Foundations indicated in Table 3 above was selected. In the interest of coverage and feasibility, half of all Community Foundations (n=48) were initially slated for inclusion in the sample. However, issues surrounding distribution of Community Foundations across counties led to selecting 50 Community Foundations for inclusion.

To address alliances, the list of the four existing alliances shared by the Community Foundation director described above was the starting point for confirmation of the arrangement of alliances. Lilly Endowment, Inc. (2011) and Indiana Grantmakers’ Alliance (IN Community Foundations, n.d.) websites did not mention or list the alliances or their members. However, Indiana Grantmakers’ Alliance site did list two contacts for those counties in which there had been or was presently an independent Community Foundation and an Alliance to which it belonged, information that was sought and gathered county-by-county to confirm the existence of four alliances. Then Community Foundation websites that had a dual listing were scanned to confirm that they were, in fact, part of an alliance. Through this process, the random nature of the alliances was reinforced. Some had active individual websites and a presence on an alliance website, and some were only represented on an alliance website. Accordingly, a few judgment calls were made, and purposeful selection was used in a few cases to ensure appropriate coverage and consider the influence of alliances on the study’s findings.
The rationale for these actions was two-fold. First, in Community Foundations that had merged completely into a larger alliance, there would be no way to isolate grantee organizations by county from the alliance’s grantee list, especially if a grantee organization served more than one county. Second, it is possible that Community Foundation alliances may provide a benefit to NPOs from economies in scale in training, equipment, and staffing, which could impact findings, so it was important to have this characteristic kept intact for data analysis. Therefore, if a Community Foundation serving a randomly-selected county was completely merged into an alliance and did not maintain its distinct identity and contact information as a county-based Community Foundation, the other counties in the alliance were checked to see if they had also been randomly selected. If so, all of the counties were kept in the sampling frame. If not, the counties were removed from the list and replaced with the next county on that particular stratification list. Community Foundations that were randomly sampled and had contact information were kept on the list. Table 6 illustrates the alliances and actions taken with each.

With the list of counties selected and Community Foundation executive director contact information secured, project information e-mails were sent to Community Foundations in order to gather lists of grantees. E-mails were followed up with a phone call and additional e-mail request if no response to the initial e-mail was received. As described above, this endeavor was not successful in generating a sufficient sample of grantees to invite to take the survey. The five lists received provided contact information for 592 grantees. With a need to invite over 1,000 additional grantees to take the survey, a strategy was devised to collect their information one-by-one. First, grantee lists from
Table 6

Community Foundation Alliances

<table>
<thead>
<tr>
<th>Alliance Name</th>
<th>Community Foundation Member County</th>
<th>Random Selection Status</th>
<th>Completely Merged</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0-Selected</td>
<td>0-Yes</td>
<td>0-Keep</td>
</tr>
<tr>
<td>Community Foundation Alliance</td>
<td>Daviess</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gibson</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Knox</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Perry</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pike</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Posey</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spencer</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Vanderburgh</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warrick</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Indiana Community Foundation</td>
<td>Starke</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Fulton</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Miami</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Foundation of Southern Indiana</td>
<td>Clark</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Floyd</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Howard County Community Foundation</td>
<td>Howard</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clinton</td>
<td>0</td>
<td>0</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Carroll</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Community Foundation annual reports and web lists received from four additional counties were used to search the Internet for contact information for the directors of each of the grantee organizations. This process was laborious and required, on average, 10 minutes and at least 6 clicks or searches per grantee to find a name, an e-mail address for a specific person beyond ‘info@organization.org’ and, in the event that this information could not be located, a phone number to call to request information or a mailing address with which to send a paper survey. In the case of Community Foundations that did not respond, annual reports, newsletters or grantee lists from the Community Foundation’s website were captured and the same process was used to collect contact information for
grantees. This process began in October, 2012 and was completed in April, 2013, resulting in an initial sample of 2,036 Community Foundation grantees to invite to complete the survey, with sample defined by Dillman et al. as “all units of the population that are drawn for inclusion in the survey” (2009, p. 43). This definition of sampling is not completely in line with the sampling process used herein, because the grantee organizations themselves were not actually sampled, rather, the Community Foundations were randomly sampled. However, the organizations themselves took the survey and it was their data that was the unit of analysis, so the grantee organizations, in reality, were considered “the sample”.

The sample needed to be large enough to ensure a sufficient level of rigor and power. In previous validation studies of the SAMM instrument, sample sizes ranged from 25 (Luftman, 2000) to 153 (Sledgianowski, et al., 2006). The target completed sample size, the number of units who complete the questionnaire (Dillman et al., 2009, p. 43), for the present study that would avoid sampling bias and exhibit a 5% margin of error at a 95% confidence level suggested by Dillman et al. (2009, p. 57) was 323 actual participants, based on the sample of 2036 grantee organizations gathered from Community Foundations and the Internet, although all of them did not receive or complete the survey due to either bounced-back e-mail addresses, mailings returned to sender, or organizations that no longer existed.

The number of respondents needed to elicit a correlation coefficient statistical result with statistical power above .7, which is considered adequate power, meaning rejecting any false null hypotheses could be fairly certain, in the presence of medium effect size ($r \leq 6\%$ explained variance) was 66 with $\alpha = .05$. (Gall, Gall & Borg, 2007, p.
It was also important to consider how many responses were necessary in order to use confirmatory factor analysis and achieve satisfactory results of the analysis of 92 variables. Darlington, Weinberg and Walberg (1973) recommend a logarithmic equation which estimates the necessary sample size at 82, which is below the sample size of 100 recommended by Gorsuch (1983), and 250 recommended by Cattell (1978). Comrey and Lee (1992) suggest that a sample size of 300 is considered “good”. Further, Cattell (1978) suggests that the ratio between cases and variables should be between 1:3 and 1:6. Taking this collection of criteria into account, the target number for the completed sample was 323 responses, which would result in a ratio of 1:3.5 and a response rate of 15.4%, which is not out of line with other technology-focused surveys, which include rates of 3% (Bernard & Pukstas, 2010), 8% (Hackler & Saxton, 2007), 9% (Finn, et al., 2006), 14% (Garrido & Camarero, 2010), 18% (Cragg, et al., 2002), 41% (Zorn et al., 2011) and 49% (Bassellier, et al., 2003) with sample sizes between 40 and 1,010.

The sampling, recruiting, and tailored design strategies that resulted in a completed sample of 244 respondents from the 1,703 grantee organizations with valid e-mail or postal addresses achieved 76% of the target sample size. This completed sample reflected the population at a 95% confidence level with a margin of error of 5.81%, a cases-to-variable ratio of 1:2.65.

Interestingly, approximately half of the business sector IT Alignment survey studies reviewed provided data on the number of responses, but not the number of surveys distributed or the overall response rate, which leads me to believe that the response rate in these studies could have been omitted because it was not very high.
Data Collection Procedures and Outcomes

Data collection procedures involved inviting participants to take the SIMO survey both through the Internet and through U.S. Mail. A description of procedures to gain access to the participants has been chronicled throughout the chapter, and specific steps for gathering data to test the SIMO model is provided here.

A project management work plan was established early in the investigation to ensure that the investigator could handle issues that arose and that data collection would run smoothly. It was necessary to modify the plan due to gatekeeper and sampling challenges. The work plan, detailed in the present narrative and presented in Table 7 below, defined the key deliverables at each stage of data collection, the timing of each stage, and intended communication with the dissertation committee and HSIRB personnel.

SIMO Electronic Survey. The SIMO Survey was created in Survey Monkey. Grantee contact lists consisting of the first name of the grantee organization representative, the name of the Community Foundation of which the organization was a grantee, the name of the organization, and the representative’s e-mail address were loaded into Survey Monkey in five batches between October, 2012 and April, 2013. Each batch received three e-mail messages. The first message, sent to 1689 organization representatives, consisted of a personalized cover letter containing an explanation of the project, an invitation to complete the survey within one week, a live link to the survey, and below the letter, informed consent information. Informed consent information was also included as a cover to the electronic survey. Respondents were informed that by clicking the link that would take them to the survey, they would be attesting to their
### Table 7

**Data Collection Work Plan**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Anticipated Time Frame</th>
<th>Actual Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get approvals from HSIRB for (a) initiating the project (b) recruiting</td>
<td>1/2012 to 3/2012</td>
<td>1/2012 to 10/2012</td>
</tr>
<tr>
<td>participants, (c) adjusting the procedures for recruiting participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>when Community Foundations did not agree to share grantee lists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot the SIMO survey and assessing validity and reliability</td>
<td>7/2012 to 9/2012</td>
<td></td>
</tr>
<tr>
<td>Gather contact information for Community Foundation grantees</td>
<td>10/2012 to 11/2012</td>
<td>10/2012 to 3/2013</td>
</tr>
<tr>
<td>Distribute requests for assistance to Community Foundations and</td>
<td>10/2012 to 11/2012</td>
<td>10/2012 to 12/2012</td>
</tr>
<tr>
<td>gathering contact lists for grantees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gather individual contact information for grantees from the Internet</td>
<td>10/2012 to 4/2013</td>
<td></td>
</tr>
<tr>
<td>Invite grantees with e-mail addresses to take the SIMO survey</td>
<td>10/2012 to 12/2012</td>
<td>10/2012 to 5/2013</td>
</tr>
<tr>
<td>Print and prepare cover letters, survey packets, reminder letters,</td>
<td>2/2013 to 3/2013</td>
<td></td>
</tr>
<tr>
<td>thank-you letters and follow-up post cards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mail individual survey packets (bulk mail not available due to number)</td>
<td>3/2013 to 5/2013</td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td>10/2012 to 12/2012</td>
<td>10/2012 to 5/2013</td>
</tr>
<tr>
<td>Enter returned paper surveys into Survey Monkey</td>
<td>5/2013 to 6/2013</td>
<td></td>
</tr>
<tr>
<td>Data preparation and analysis</td>
<td>5/2013 to 9/2013</td>
<td></td>
</tr>
<tr>
<td>SIMO IT Alignment Maturity Report and Technology Strategy Guide</td>
<td>Upon survey completion</td>
<td>8/2013 to 10/2013</td>
</tr>
<tr>
<td>sent to respondents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A total of 14 recipients opted out of taking the survey and receiving any future communication related to the investigation.

After sending out the first message, bounced e-mail addresses were downloaded from Survey Monkey and efforts were made, both through further Internet research and phone inquiries, to obtain valid e-mail addresses. Of the 92 bounced addresses, 15
alternate e-mail addresses were obtained and surveys were re-sent to those organizations. The re-sending process made the total number of organizations invited to participate appear to be 1689, when, in fact, invitations were ultimately received by 1674. A second message, sent to 1550 organizations a week later, contained a reminder about the survey (Appendix J, Grantee Reminders to Participate in SIMO Study), its benefits and the opportunity to receive a custom report and technology guide, a link to the survey, a request for response within one week, and a copy of the original request. The third message (Appendix I), sent to 1391 organizations two weeks after the original message, informed recipients of their “Last chance to complete technology survey” as part of its subject line, presented the survey link, and asked respondents to complete the survey within a week. After data analysis, each recipient that indicated in their survey response that they wished to receive a custom IT Alignment Maturity Report and Technology Alignment Strategy Guide was sent those documents in PDF form to the e-mail address provided (Appendix J). A total of 212 recipients responded to the electronic survey invitation, a response rate of 13.3%. The distribution and response character of organizations invited to take the survey electronically is shown in Table 8 below.

SIMO Paper Survey. Organizations for which no e-mail address was available (n=185) were contacted using postal mail to invite them to complete the survey. Of those organizations, a contact person was identified for 102 organizations, and no contact person was identified for 83. In the event that no contact person was identified, correspondence was addressed to the highest ranking staff member according to the type of organization, (e.g. Chief, Director, Mayor, Pastor, Town Clerk). A pre-notice letter was mailed to the 185 organization representatives, informing them that they would
Table 8

*Electronic Survey Distribution and Response*

<table>
<thead>
<tr>
<th>Distribution month</th>
<th>Invitation sent</th>
<th>Reminder 1 sent</th>
<th>Reminder 2 sent</th>
<th>Survey response</th>
<th>Grantee opted out</th>
<th>Email bounced</th>
</tr>
</thead>
<tbody>
<tr>
<td>October, 2012</td>
<td>610</td>
<td>588</td>
<td>492</td>
<td>88</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>November, 2012</td>
<td>471</td>
<td>417</td>
<td>391</td>
<td>53</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>December, 2012</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>February, 2013</td>
<td>226</td>
<td>199</td>
<td>185</td>
<td>23</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>April, 2013</td>
<td>380</td>
<td>346</td>
<td>323</td>
<td>46</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Totals</td>
<td>1689</td>
<td>1550</td>
<td>1391</td>
<td>212</td>
<td>14</td>
<td>92(^a)</td>
</tr>
</tbody>
</table>

\(^a\)Of all electronic survey invitations sent, 92 bounced back. Of those, 15 were re-sent to grantees whose email addresses originally bounced because the investigator was able to find an alternate email address for those grantees through Internet research or phone inquiries. Accordingly, only 1674 grantees actually received survey invitations, as reflected in Table 4, *Comparison of Response Rates When Community Foundation Did or Did not Act as Gatekeeper*.

be receiving a survey in the mail in the next week, explaining the purpose of the survey, the benefits to their organization, and the timeline for completion. Of the letters sent, 53 were returned to sender. Survey packets were sent to 132 organizations remaining on the list, the contents of which included a cover letter, a paper copy of the survey, and a postage-paid return envelope addressed to the investigator. The cover letter summarized the purpose of the survey, explained completion options, which included filling out and returning the paper survey or accessing and completing the survey online using a link provided in the letter, and requested completion of the survey within 10 days. Each letter, survey, and envelope was coded with a respondent number for tracking purposes.

Individuals who chose to complete the electronic survey were asked to enter their respondent number into a survey field. Of the survey packets sent, 26 were returned to sender, which indicated that 106 surveys were received by organizations. Fifteen days after the survey packets were sent out, reminder postcards were sent to all non-
respondents, reminding them about the survey, providing the link to the online survey, and requesting that it be completed that week. Twenty paper surveys were completed, and 12 surveys were completed online, resulting in a response rate of 30.2%. In total, 1703 organizations were invited to take the survey and 244 participated, garnering an overall response rate of 14.3%. The distribution and response character of organizations involved in the paper survey process is illustrated in Table 9 below. A comparison of electronic, paper, and overall survey response rates is shown in Table 10.

Table 9

*Paper Survey Distribution and Response*

<table>
<thead>
<tr>
<th>Investigator Action and Response</th>
<th>Grantee Contact Type</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contact Person</td>
<td>No Contact Person</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Pre-notice letter sent</td>
<td>102</td>
<td>83</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Letter returned to sender</td>
<td>24</td>
<td>29</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Survey sent</td>
<td>78</td>
<td>54</td>
<td>132</td>
<td></td>
</tr>
<tr>
<td>Survey returned to sender</td>
<td>10</td>
<td>16</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Refusal to respond</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Paper response</td>
<td>12</td>
<td>8</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Electronic response</td>
<td>10</td>
<td>2</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Table 10

*Overall Survey Response Rates*

<table>
<thead>
<tr>
<th>Investigator Action and Response</th>
<th>Type of Survey</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electronic</td>
<td>Paper</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Surveys sent</td>
<td>1674</td>
<td>132</td>
<td>1806</td>
<td></td>
</tr>
<tr>
<td>Surveys returned/bounced</td>
<td>77</td>
<td>26</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Surveys actually delivered</td>
<td>1597</td>
<td>106</td>
<td>1703</td>
<td></td>
</tr>
<tr>
<td>Surveys refused/opted out</td>
<td>14</td>
<td>8</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Surveys completed</td>
<td>212</td>
<td>32</td>
<td>244</td>
<td></td>
</tr>
<tr>
<td>Response rate</td>
<td>13.3%</td>
<td>30.2%</td>
<td>14.3%</td>
<td></td>
</tr>
</tbody>
</table>
Limitations of Sampling Strategy

Five limitations of this sampling strategy have been identified. The first is the generalizability of findings to “all nonprofits”, which is ultimately the population to which the Nonprofit IT Alignment Maturity Model would have the most utility in practice. However, the feasibility of subjecting the model to validation using the U.S. population of 1.5 million nonprofit organizations is beyond the scope of resources available for this study. Therefore, data from this iteration of the survey was used to validate the model and generalize findings to “all Indiana Community Foundation grantees”. Future research may engage a national sample.

A second limitation of this sampling strategy is the concern respondents may have about self-reporting less-than-stellar information about their organization’s strategies, organizational practices, and outcomes in light of the knowledge that they have been referred for the study by one of their stakeholders, a community foundation. Reassurance to respondents in the invitation letter, informed consent document, and the questionnaire itself that survey data will be kept confidential and no organizational identities will be revealed in the reporting of results beyond those provided to the organization’s respondent in a Custom IT/Mission Alignment report, as well as encouragement to participate from the Community Foundations themselves, in some cases, was given to counter these concerns in an attempt to reduce measurement error.

A third limitation involves coverage. Finding contact information for grantees resulted in a sufficient sampling frame, however the process uncovered a number of challenges. First, of all possible respondents included in Community Foundation lists (n=2036), 3% (n=66) were duplicated within and/or among the lists, a challenge
described is described as common by Dillman et al (2009, p. 51), caused in this investigation by grantees that serve multiple counties or different units or departments of grantee organizations receiving grants from Community Foundations. Fifteen percent of grantees on lists (n=306) did not have a locatable e-mail address or those available were terminal bounce-backs, therefore the electronic mode of survey invitation could not be used and an alternative method, postal mail had to be used. Further, of the grantees with no e-mail addresses, 43% (n=132) addresses were identified and confirmed with pre-notice letters, 16% (n=53) of the pre-notice letters were returned to sender, 8% (n=26) surveys were returned to sender, and 41% (n=124) did not have a locatable mailing address. However, postal mail invitations in which grantees could respond via mail or electronic mode resulted in a higher response rate than exclusively electronic invitations (30.2% versus 13.3%), which confirms Dillman et al.’s (2009) recommendation that mixed modes of survey delivery be used to reduce nonresponse error. This result suggests that the survey could have had an overall response rate higher than the 14.3% response rate achieved, had postal mail been used to invite the entire sample, although doing so would have been cost prohibitive.

Fourth, an unexpected finding was that 15% of respondents and 11.5% of grantees of Community Foundations sampled are municipalities, governmental agencies and schools, thus excluding them from being considered part of a population of “all nonprofits”, ultimately the target population for the SIMO model. While all of the respondent organizations fit the population of “Indiana Community Foundation Grantees” and align with one of the 10 categories National Taxonomy of Exempt Entities used to categorize nonprofit organizations (Urban Institute, 2010), representatives of
public agencies who did respond to the invitation questioned whether it would be appropriate for governmental entities to complete the survey. The differences in organizational character of governmental agencies, e.g. no board of directors, no volunteers, unclear or perceived lack of influence of stakeholders did render the survey inappropriate for some governmental agencies, although some completed it to the best of their ability. For some organizations, particularly school corporations and municipalities, it was sometimes impossible to identify the sole recipient of, for example, a $500 grant. Corporation bookkeepers and town clerks were, in some cases, able to provide contact person for the grant project. In other cases the response was, “I don’t know” or “I do not have time to look that up”. When a contact person could not be identified, the request for involvement was sent to either the highest level administrator, i.e. the Mayor, the Chief, or the Superintendent, or the Technology Director, if one existed.

Also, some Community Foundations sampled funded community projects and community groups for which there are not sole primary contacts. Festivals, parks, and initiatives are examples of such grants. In the event that the grant project had an e-mail or mailing address available, the primary contact was asked to participate. Otherwise, that grantee was not invited to take the survey. These challenges led to the limitation that while these grantees are loosely organized, and many do use technology (some extensively, based on their Web presence) the perspective shared may not accurately represent the organization if the individual responsible for strategy, information technology/mission and outcome alignment was not the person who completed the survey. Together these limitations suggest that nonresponse, measurement and coverage error may impact the utility and generalizability of the findings.
Finally, the most concerning limitation is the failure of the implementation of the prescribed social exchange methodology to leverage the trust of stakeholders in the process of gaining access and enlisting participation, thus it is possible that not all Community Foundation grantees were identified and invited to participate. ‘Thick skin’ was definitely required when receiving rejections from what were hoped to be supportive organizations, and rude electronic lectures from seasoned NPO executives about the presumption that they had the time to help. The misguided assumption that all would readily comply with requests for participation resulted in little outside support of the project and was followed by a collection of “no’s”, specific criticism of the project, the instrument, its length, and the methodology. Personal responses were sent to all critics with poise, gratitude, and comments regarding each individual concern which, I believe, garnered a bit of respect, although no additional compliance. Using an alternative approach to enlisting participants one-by-one in the counties from which I received a negative response from a Community Foundation was unnerving. In two situations, Community Foundation directors were approached by their grantees after receiving survey invitations and criticized for their involvement (of which there was none) because grantees were informed in the invitation that they were selected because they were grantees of a Community Foundation. The directors shared this concern and one requested that a follow-up e-mail be sent to all of the invited organizations, clarifying that the Community Foundation was in no way involved in the survey. Compliance with this request certainly would not help the response rate, but it was done politely and promptly. (The invitation was modified after the first time this happened to inform grantees that they were identified by their inclusion on a publicly-available grantee list.) In short, the
sensitive nature of the relationship between funders and grantees has become clearer, as has the potential of outside influences to jeopardize the relationship between grantors and grantees. This investigation may have caused friction among organizations, and, at minimum, the friction and the lack of support from gatekeepers resulted in a less-than representative sample and a lower survey participation rate.

Data Analysis Plan

This section describes the intended plan for data cleaning and tabulation, computation of descriptive statistics, and the process for simultaneously examining the relationships between several variables within a nonprofit context: strategy typology, IT/mission alignment and organizational performance. Descriptions of the analysis methods and tests of reliability and validity performed on the data are provided. The investigator implemented eight statistical analysis strategies using SPSS 20.0 (IBM, 2011) and XLStat (Addinsoft, 2013): descriptive statistics, correlation, correspondence analysis, missing variable analysis, multiple imputation, principal components analysis (PCA), reliability and validity testing, and partial least squares path modeling (PLS-PM).

Descriptive Statistics Analysis

Descriptive statistics, presented in Chapter 6 (frequency distributions, means and standard deviations) were calculated using both SPSS v.20 and XLStat to establish a profile of the data set and present a holistic view of the items included in the study. Initial screening of the data illuminated a considerable amount of missing values, the
extent of which is described in the following section. Because the data set was not complete, computation of descriptive statistics needed to take missing values into account. In order to accurately reflect the data, the original data set was used to run descriptive statistics, and the number of responses received for each item is noted in the presentation of the descriptive statistics. A statistical procedure, multiple imputation, described below was used to approximate the data in order to make it usable for inferential statistical analysis. Accordingly, the inferential statistics approximate, but do not purely reflect the characteristics of the respondents.

Correlations

The actual data set, although incomplete, did contain several (n=44) cases in which values for all model-related variables were present. These cases had a few missing values, enough to flag them as “incomplete”, yet they contained a plethora of information that was usable. Accordingly, cases that contained values for all model-specific variables (strategy-typology, IT/mission alignment and organizational performance) and were missing values from five specific, non-critical variables that had a high number of missing values (number of consultants used by the organization, who the technology manager reports to, job title, respondent name and email address), were maintained in a data set for which all values were correlated. Bivariate correlations were acquired for all quantitative variables: 12 organizational demographic variables; the strategy typology variable; means of the IT/mission alignment factors for each of the 7 criteria; total it/mission alignment maturity, which was computed as the mean of all 56 IT/mission alignment factors; perceived it/mission alignment maturity; means of extent of
organizational structure values, influence of technology on organizational structure values, extent of achievement of outcome values, and influence of technology on achievement of outcomes values; and the four quantitative individual demographic variables. Pearson product-moment correlation coefficients (Pearson’s $r$) were computed among all variables using a two-tailed test of significance (because of the exploratory nature of the analysis) to identify relationships that were significant at a $p$ value less than .05.

One of the dangers of running correlations on a large number of variables derived from survey research is that it could be considered ‘data dredging’, searching for any combination of variables that might show a statistical relationship but are actually spurious, with relationships identified by chance that could increase the likelihood of Type 2 errors, identifying relationships that are not, in fact, true relationships (Selvin & Stuart, 1966). Further, in such a small data set that is not randomly sampled, relationship findings cannot be generalized to the intended population. In order to overcome these dangers, rather than simply identify relationships in the small data set, correlations were also run for all cases that had 10% missing values, with missing values omitted from analysis, and the same correlations were run for the pooled values of the imputed data set, a set of 244 values (the size of the original data set) derived from 1220 estimated cases, the procedure for which is described below. Then, the results of the correlations were compared across all three data sets, and only those correlations that were maintained across all three data sets at a $p$ value of less than .05 were considered as legitimate findings. Results of the correlations are described in the Results chapter.
Missing Values Analysis

After experiencing the sampling challenges described above, it was not a complete surprise that the limitations of the sampling strategy manifested in a less-than-complete data set. Although 244 individuals responded to the request for participation and accessed the SIMO survey, either on line or in paper form, not all of them completed all of the questionnaire items. Missing data is a common occurrence in surveys, whether it is missing completely at random (MCAR), with no relation between the variables and the missing data, selectively missing based on the content of items or characteristics of respondents, or missing by design because of the structure of the survey, accessibility issues, or because respondents had the option to answer ‘don’t know’ or ‘not applicable’ to some or all items (Allison, 2001; Newman, 2003).

Consideration of missing data is important because statistical methods presume that every case informs the variables that are included in the analysis. Further, patterns of missing data also provide information relative to instrument design and methodology that impact both analysis of the data that is collected, as well as considerations that must be made in future iterations of a survey instrument. Accordingly, before pursuing analysis of the data collected, it was important to analyze the missing data in order to determine how (or if) to proceed with the analysis.

SPSS v. 20 was used to analyze items to determine the overall summary of missing values, an illustration of which is provided in Figure 14. The first graph,
‘Variables’ shows that only four of the 110 questionnaire items received responses from all participants, and the second graph, ‘Cases’ indicates that of all respondents, only five completed the entire survey. The third graph, ‘Values’, illustrates that responses were provided for just over one-third of the total survey items across all respondents, which comprised a substantial, albeit incomplete data set. (The number of items shown takes into account matrix responses, which count as multiple variables.) In the next chapter, a summary of the Missing Value Analysis procedure done using SPSS v. 20.0 will explain where missing variable values are located, whether variables have missing values in

*Figure 14. Overall Summary of Missing Values*
specific cases, and describe the patterns of missing data. Together this information will explain how a sample of 244 could result in such a small percentage of completed survey items, as well as describe what data was captured.

The present study has an extreme amount of missing data. Of the 244 cases, 98% had at least one variable item missing, which is far beyond the generally acceptable level of 20% missing data that would indicate the use of a missing data approach. Historically listwise deletion, the process of removing cases in which data is missing, has been used to deal with missing data. If listwise deletion were used, only 2% of the data would be available for data analysis. Therefore, to utilize available data in an exploratory fashion, further consideration was made of the missing data, particularly whether there is method that would enable the missing data to be estimated for the purpose of analysis. The Missing Value Analysis module of SPSS v. 20 provides an expectation maximization (EM) procedure that provides a statistic for use with multivariate data with missing data, Little’s MCAR, that enables the investigator to determine whether the data is missing completely at random, which would indicate that an imputation strategy could be used to estimate the missing data (Howell, 2006). IBM Corp. describes the EM procedure this way:

Each iteration consists of an E step and an M step. The E step finds the conditional expectation of the “missing” data, given the observed values and current estimates of the parameters. These expectations are then substituted for the “missing” data. In the M step, maximum likelihood estimates of the parameters are computed as though the missing data had been filled in. “Missing” is enclosed in quotation marks because the missing values are not being directly filled, but, rather, functions of them are used in the log-likelihood. (2011a, p. 8)

Howell provides additional explanation of the process, in which the filled-in data is used to re-estimate the parameters, then the re-estimated parameters are used to
estimate the values for several iterations. “When the process finally converges on stable estimates, we stop iterating” (2006, p. 15). During this process, the determination is made whether the data being replaced is random or not random, thus presenting the Little’s MCAR statistic. For the Little’s MCAR test, the null hypothesis is that data are completely missing at random, with \( p \) being significant at the .05 level. The alternative hypothesis, that data are MCAR is supported if \( p \) is greater than .05. (IBM, 2011a). In the present study, Little’s MCAR of the model variables for strategy typology, IT/mission alignment maturity and organizational performance was found to be .980 for the SIMO dataset after 8,000 iterations, which is not significant. In order to compute the statistic, Little explains

> For each variable with missing values, the sample is split into cases with that variable observed and cases with that variable missing. The means of observed values of the other variables in the two groups are then compared by sample t-tests. Significant differences between these means are evidence that the data are not MCAR. (1988, p. 1198)

A single imputation method is included in the SPSS missing value analysis procedure, but multiple imputation is generally more superior to single imputation (Grace-Martin, 2013; Howell, 2006) so the missing value analysis procedure was used to analyze patterns and obtain the Little’s MCAR statistic, but not to impute the parameters and missing data, rather that was done using the multiple imputation strategy described below in order to prepare the data for analysis. All of the independent variables measuring strategy and IT/mission alignment maturity, as well as the dependent variables were analyzed using expectation maximization estimation with cases with missing values sorted by missing value patterns. Missing value analysis (MVA) output data is contained in Appendix K.
Multiple Imputation

When dealing with missing data, historically five methods have been widely used to prepare a data set for analysis: listwise deletion, dropping variables, replacing the data with dummy variables, mean replacement, and single imputation (Allison, 2002; Grace-Martin, 2013; Howell, 2006; Newman, 2003). Listwise deletion entails removing all cases that have missing data on any variables, which, in the present study, would require removing 98% of cases. Dropping variables could be considered if the variables had little or no effect on the dependent variable, but without sufficient data to determine that, the relationship between the variable being considered and the dependent variable is unknown. It is often the case that a variable with much missing data indicates a poorly worded question or data collection was flawed (Allison, 2002, Newman, 2003). Replacing the data with dummy variables does not produce unbiased parameter estimates and is therefore not recommended (Jones, 1996). Mean replacement involves finding the mean of all present occurrences of a variable, then using that mean to replace all incidents of that variable. The problem with this approach is that it underestimates the standard error of the variables that were treated, which would increase the likelihood of p-values that are too small, thus reporting results that are not really results at all (Grace-Martin, 2013). Additional strategies for dealing with missing data in multivariate analysis are described by Howell, including missing data coding, regression substitution and hot-deck imputation, each of which also have limitations. Two strategies are most frequently recommended for dealing with missing data: expectation maximization (EM) (Dempster, Laird and Rubin (1977) and multiple imputation (MI). (Rubin, 1987). According to Howell, often EM is used as the first step in MI.
MI addresses the above issues by first applying the expectation maximization algorithm to the original data set to obtain unbiased parameter estimates for the dataset. As explained by Howell (2006), once the parameters are set, a complete set of data is imputed from the estimated parameters. The process for imputing an observation is to perform regression on a variable with missing data on other variables on the data set. Then, the complete data set is imputed to obtain revised parameter estimates for the model, similar to the process explained above for EM. Then the derived parameter estimate values are imputed back onto the data set, and then the data set is imputed back on to the parameter estimates for several iterations until the values stabilize. Howell likens this to running several replications of an experiment, then combining all of the results and subjecting all of them to multiple analyses. With MI, “the replications are repeated simulations of data sets based upon parameter estimates from the original study” (p. 19). Results of subsequent statistical tests are computed by finding the mean of the results of each of the imputed data sets, as recommended by Rubin (1987, 1996), thus providing estimated results that have unbiased parameter estimates and a more reasonable estimated standard error of the variables.

MI using the fully conditional specification method with a linear regression model for scale variables was performed on the full data set using SPSS v.20. Fully conditional specification was used because, according to the software, it is “suitable for data with an arbitrary pattern of missing values” (IBM Corp, 2011a, p. 19), which was determined to be the case by the Little’s MCAR statistic. The maximum amount of iterations specified was 10. Five imputations were done, which Rubin suggests is a sufficient number of imputations due to the randomness inherent in the algorithm that leads to slightly
differing data sets. With this process completed, the data set was analyzed using principle components analysis.

Principal Components Analysis

Principal components analysis (PCA) is a technique to reduce variables, thus maximizing the amount of variance accounted for in observed variables. Measured variables are reduced through yet another iterative process to a smaller group of variables called components. The objective of PCA is to reduce redundancy in questionnaires and other item-based instruments so that respondents are tasked with completing items that will inform the principal components of a construct without being inundated with similar questions. O’Rourke, Hatcher and Stepanski summarize PCA succinctly as identifying “groups of observed variables that tend to hang together empirically” (2005, p. 436). Redundant variables are identified and culled from each group, and then the remaining items each uniquely load a specific component or factor. Also, PCA can be used to distill the observable or measurable variables that together describe a latent or un-observable variable.

In the present study, IT/mission alignment criteria and organizational performance cannot be directly observed. Instead, IT/mission alignment maturity questionnaire item choices describe conditions in an organization that reflect specific levels of each criteria. Similarly, organizational performance item choices describe levels performance and levels of technology’s influence on performance that together establish levels of organizational performance. PCA determined which of the observable variables load on which latent factors. The loadings established the principal components.
Six IT/mission alignment maturity latent variables were previously identified and validated by Sledgianowski (2004) and Sledgianowski et al. (2006) through PCA: communication, competency/value measurement, governance, partnership, technology scope, and skills. Because culture emerged from the nonprofit literature as an additional criterion possibly unique to the nonprofit sector, it was necessary to re-run PCA on the existing, validated set of criteria plus the new one. In order to do so, all 56 IT/mission alignment maturity variables were selected for analysis. Additionally, observed organizational performance variables measuring extent of outcomes and perceived influence of technology on outcomes were subjected to PCA to determine whether they do, in fact, load on organizational performance.

A Pearson’s $r$ correlation matrix PCA with varimax rotation was run on the IT/mission alignment maturity variables with the seven $a$ priori, or already established, factors, selected for extraction. Rotation is said to improve utility and interpretability of a factor analysis because it changes the loading factors but keeps the positions of the variable points the same (Clark, 2009). Varimax rotation was selected because, according to Brown (2009), it is an orthogonal rotation used to obtain a new set of factor loadings in order to achieve a simple factor structure. Orthogonal rotations are used when the goal is to identify factors that are uncorrelated. The rotated component matrix resulting from the process identified which variables loaded on which components, depicting the principal components of the set of variables, the results of which are described in Chapter 6. The factor structure for the IT/mission alignment maturity variables was replicated in the next analysis step, Partial Least Squares Path Modeling (PLS-PM).
In this investigation, recall that PCA was done with the pilot data set with rather inconclusive results due to the small size of the pilot data set, then the analysis was replicated for the data set derived from the executed SIMO survey to confirm the components identified previously by Sledgianowski et al. (2006) to determine whether the factors established for the culture criterion were, in fact, unique and uncorrelated with the other six IT/mission alignment maturity factors. Two of the guidelines used by Sledgianowski (2004) were used in this study to assess the extent of adequacy of extraction and interpretation of the factors:

1) Retained factors should have an eigenvalue >1.

2) Only factors loading with more than two variables are interpreted. (2004, p. 86)

Statistical power should always be a consideration when computing inferential statistics. In the case of studies that use factor analysis, of which PCA is one type, the sample size, or number of cases analyzed is the primary determinant of power. Zhao (2009) reviewed the literature on sample size in factor analysis and found that there are two types of general recommendations regarding minimum sample size – absolute number of cases (N) and subject-to-variable ratio. In terms of the number of cases needed, recommendations span from 100 to 500. The sample size in the present study, 244, fits within those recommendations. In terms of subjects to variables ratios, recommendations range from a ratio of 2 subjects or cases for each variable to 20 subjects per variable. Again, with 244 subjects and 87 variables, the present sample was sufficient for factor analysis.

PCA facilitated the reduction of individual IT/mission alignment maturity factors into the seven corresponding criteria while still reserving access to the factor data in order
to use it for further exploration of how to identify and provide prescriptive technical assistance based on individual factor levels. In some survey studies, PCA is used to reduce the total number of factors or variables informing a construct, in other words, reduce the number of items on an instrument by identifying those that do not load on the latent factors. Because the SIMO questionnaire had already been used to collect data for the study, PCA findings could not be used to refine the instrument. However, the findings will be useful for refining the instrument for future iterations of the survey.

The principle components confirmed by PCA were then used for testing the SIMO model, through partial least squares path modeling analyses to identify relationships between the IT/mission alignment maturity criteria, strategy typology and performance variables.

Partial Least Squares Path Modeling

Partial least squares path modeling (PLS-PM), a method which combines processes of principle components analysis and multiple linear regression, was used by Croteau and Bergeron (2001) to “estimate and test relationships among constructs” (p. 84) interaction of strategic activities, technological deployment and organizational performance in the information technology trilogy model. Likewise, PLS-PM was used in the present investigation to estimate and test relationships between strategy typology, IT/mission alignment maturity and organizational performance. Abdi (2003) suggests using PLS-PM “when we need to predict a set of dependent variables from a (very) large set of independent variables (i.e., predictors)” (p. 1), a process that was valuable in the attempt to distill relationships between the independent variables and dependent variables.
contained in the SIMO model. The latent variables identified by factor loading are often called constructs in the PLS-PM analysis.

**PLS-PM Stage 1 – Measurement Model.** PLS-PM produced loadings between variables and the constructs proposed a model and estimated regression coefficients for the paths that emerged between the constructs. PLS-PM analysis takes place in two stages that create two models – a measurement model and a structural model. The measurement model, also called the outer model, estimates loading scores for constructs. The first stage of PLS-PM essentially replicates the principal components analysis in order to establish which of the observable variables load on which *a priori* or already-established latent variables so that the loadings can be used in the second stage of analysis. The factor loadings established in the first stage of the present analysis were also used to establish reliability and validity of the model.

**Item Reliability.** Item reliability was indicated in terms of the factor loading of each observable variable, with reliability established if the observable factors each measured only one latent variable. Cronbach’s alpha was also considered as a criterion for assessing internal consistency, as it has been established as the most commonly-used measure of reliability for psychometric and other tests and questionnaires (Tavol & Dennick, 2011). This measure indicates the internal consistency among a set of indicators or variables that characterize a particular construct (Griffin, 2005). While Griffin asserts that Cronbach’s alpha should be .70 or above to establish internal consistency he suggests that if a survey has sections of 6 to 10 items, which the SIMO survey does, a Cronbach’s alpha of .50 may be considered adequate for the purpose of establishing preliminary reliability. Recall that because the instrument was implemented prior to the PLS-PM
analysis, the result of the reliability analysis was not used to exclude factors, rather it identified those variables that would need to be considered for exclusion in future iterations of the instrument.

Convergent Validity. Convergent validity establishes the point at which a construct or latent variable is representative of the ‘true’ value of that construct (Croteau & Bergeron, 2001, p. 87). It is measured using the rho or $R^2$ value presented in the first stage of PLS-PM analysis, a weight value determined by item loading. Nunnally (1978) and Hulland (1999) established that any constructs with a rho value greater than or equal to 0.70 should be retained, a criteria that was considered in this analysis.

PLS-PM Stage 2 – Structural Model. The second stage of analysis of the structural model, also called the inner model, assessed the effects of the latent variables or constructs on each other and established the significance of the relationships of the constructs by determining the paths of influence between the constructs and the strengths of those paths in terms of path coefficients. It also established the prediction quality of the model as suggested by XLStat (Addinsoft, 2013).

Advantages of using PLS-PM are its applicability for use with ordinal and categorical data and its’ not requiring a normal distribution of data (Croteau & Bergeron, 2001, p. 85), which was the case with the data collected in the present study. When combined, the results of the measurement and structural models provided a framework of weighted and loaded measures that indicates the strength and direction of the measures. Considering the research questions addressed through the analysis, the factors that influence IT/mission alignment maturity (RQ1) were identified through principal components analysis and confirmed through the first stage of partial least squares
analysis. Then partial least squares path modeling was used to assess the structural model by providing path coefficients that illustrate the direction of relationships in the model, particularly the extent of relationships between strategy typology and IT Alignment Maturity (RQ2), extent of relationships between nonprofit organizations’ strategy typology and their achievement of performance outcomes (RQ3), extent of relationships between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes (RQ4), and the extent of relationships between specific strategy typologies and IT alignment maturity and performance outcomes (RQ5). This phase of data analysis closed with the emergence of a validated Nonprofit IT Alignment Maturity model and corresponding profiles of nonprofit IT alignment maturity.

Summary

The process of creating, testing, and implementing the SIMO survey was described as a lengthy, iterative and informative process. Through creativity and perseverance the intended methodology was adapted and implemented with some success, resulting in a sample of 244 nonprofit organizational representatives providing their insights on strategy typology, IT/mission alignment maturity and organizational performance. Analysis procedures were established so that the data could be closely examined to determine the relationships between these constructs. The next chapter will present the findings of the analysis.
CHAPTER VI

ANALYSIS AND RESULTS

Introduction

This chapter presents the results of the analysis of the SIMO questionnaire data and a discussion of hypothesis testing. A general discussion of the data screening procedures comes first, followed by presentation of descriptive statistics, a description of the results of the missing value analysis and multiple imputation process. Next, the results of the principal components analysis (PCA) are presented, reliability and validity testing results are shared. The results of partial least squares path modeling (PLS-PM) of strategy typology, IT/mission alignment maturity and organizational performance constructs are the last analysis results to be discussed, followed by a presentation of the established PLS-PM models.

Data Screening

The previous chapter introduced the most substantial challenge to the investigation – missing data. This section will describe the results of the missing variable analysis performed using SPSS v. 20.0 and Microsoft Excel, as well as the process of multiple imputation performed using SPSS v. 20.0.
Results of Missing Value Analysis

After receiving 244 responses to the SIMO survey, missing value analysis illuminated that only 4 variables (items) out of 110 (4%) received responses from all 244 respondents. Only five respondents out of 244 (2%) provide responses for all 110 variables (including matrix items). Altogether, 9,696 data points (36%) were gathered through implementation of the SIMO survey, which requested input on 26,840 data points. These results, along with Figure 15 below, which presents the top ten missing data patterns, suggests that some respondents skipped a few items, some completed the first few then exited the survey, while others completed some of the survey then either took a break and forgot to go back and complete it or decided partway through to not complete the survey.

Figure 15. SIMO Survey Missing Value Patterns Reflected as the Percent of Cases Displaying Each Pattern. The 10 most frequently occurring patterns are shown in the chart.
The missing value analysis indicated that the data is missing completely at random (MCAR), as Little’s MCAR statistic was .980, which is not significant. Patterns in the data suggest that while missing data was random in terms of relationships between variables, the data was both selectively missing and missing by design. Selectively missing data was caused by the characteristic of respondents who, while well-intentioned when beginning the survey, found that they did not have time to finish because they are the sole employee, their organization is short-staffed or they are volunteers who have to choose how to best invest their time, an issue that was made apparent in e-mail and phone conversations with respondents who took the time to share their concern. This led to the finding that not enough effort was made to convince subjects of the value of the survey, and not enough reminders were provided to encourage full participation.

Data was missing by design due to three nonresponse issues. First, the survey is long, 87 items, and the items are complex. A mentor shared his concern about the length of the survey and the depth of the questions when the survey was first created, and Dillman et al. (2009) assert that longer surveys increase the cost (time) to participants, so length should be minimized when possible and administration should include extra incentives and follow-up contacts. The mentor agreed that if it was modeled after an instrument used in another study with the intention of comparing the results of implementation in a different sector, there was little that could be done to alter the length or character of the items, but he maintained his concern and predicted that response rate could be affected. Sure enough, the length of the survey contributed to respondent fatigue, defined by Ben-Nun (2008) as a phenomenon in which “survey participants
become tired of the survey task and the quality of the data they provide begins to deteriorate” (p. 743), as illustrated in Figure 16 below.

The chart illustrates the way in which the number of nonresponse items increased incrementally as respondents moved through the items. (Again, the number of items shown takes into account matrix responses, which count as multiple variables.) The horizontal axis is labeled with the sections of the survey, each of which begins on a new page, prefaced with a title and short introduction. The number of nonresponse items follows the structure of the survey very closely, as though respondents decided, at the end of each section, whether they would continue or quit.

The second design element that contributed to item nonresponse was the inclusion of a “don’t know/NA” or an “I don’t know” last response choice in five items in the organization section, 56 in the IT/mission alignment section, and 30 in the performance
measurement section, a total of 91 opportunities to give a nonsubstantive response, which was coded for the purpose of analysis as a nonresponse. While Dillman et al. (2009) hesitate to recommend the use of “don’t know” responses because they oftentimes lead to additional incidents of nonresponse, in some cases the respondent truly did not know the answer because the information necessary was outside his or her scope of work. Several individuals either e-mailed or responded in writing in response to mailed surveys that the some or all of survey items did not pertain to them. In some cases the survey participant was not the most appropriate respondent, as would have been the case if an administrative assistant or departmental executive, rather than the chief executive, completed the survey. The survey was designed to be completed by the person in charge of making technology decisions, and this directive was included in the survey invitation letter and introduction, but that qualification was not enforced. If someone other than that person responded, then it is likely they could not answer the questions, so they would have either answered “do not know” or not responded. Some responded by using the “don’t know” option where appropriate, and others refrained from completing the questionnaire. This is exactly the situation Dillman et al. describe and recommend that such an option is provided so that the respondent is not either forced to choose a response that does not fit or chooses to quit the survey because he or she cannot answer some of the questions (2009, p. 210). This led to the finding that the process of inviting participants needed to be more specific in order to include only decision-makers in the process.

The extent of missing data indicates that even some primary technology decision-makers could not answer some questions, which suggests a third factor that influenced
nonresponse due to design – appropriateness of the measures. Of the respondents who indicated their position, 117 can be considered primary decision-makers (CEOs, County Coordinators, Executive Directors, Lead Pastors and Technology Directors). One consideration in adapting a business-sector model and instruments to the nonprofit sector was ensuring that the concepts and terms of the measures were appropriate for the sector. Considering Table 11 below, which displays variables from the SIMO survey that received at least 25 nonsubstantive responses from primary decision-makers, it is likely that lack of understanding of several of the SIMO items, particularly those that were validated in the business sector (COMM, CULT, PART, SKIL) led to high levels of non-response. In the case of PART040, the percent of nonsubstantive response was greater for decision-makers (65%) than for the entire sample (53%). This led to the finding that some variables may be inappropriate and need to be studied further.

Descriptive Statistics

Computation of descriptive statistics needed to take missing values into account, therefore the presentation of descriptive statistics incorporates designation of the number of individuals that responded to each item.

Demographics of Respondents. Respondents were asked to indicate their position within the organization. Of all 244 respondents, 78 did not list a position, and it was not possible to determine from position titles in all cases whether the respondent was the primary technology decision-maker in the organization. Table 12 below depicts the range of positions represented by the respondents.
Table 11

*Missing Value Analysis Summary: Nonsubstantive Responses of N>25 Decision-makers*

<table>
<thead>
<tr>
<th>Variable Code</th>
<th>Item Description</th>
<th>Number of decision-maker non-substantive responses out of 117</th>
<th>Total number of non-substantive responses out of 244</th>
<th>Decision-maker percent of all non-responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART040</td>
<td>Processes to enhance tech. and org. staff relationships</td>
<td>76</td>
<td>143</td>
<td>53%</td>
</tr>
<tr>
<td>CULT020</td>
<td>Extent to which external stakeholders encourage innovation</td>
<td>55</td>
<td>115</td>
<td>48%</td>
</tr>
<tr>
<td>PM140</td>
<td>Influence of technology on long-term outcomes</td>
<td>54</td>
<td>135</td>
<td>40%</td>
</tr>
<tr>
<td>PART050</td>
<td>Presence of technology sponsors/champions</td>
<td>51</td>
<td>152</td>
<td>34%</td>
</tr>
<tr>
<td>SKIL070</td>
<td>Career crossover opportunities</td>
<td>50</td>
<td>126</td>
<td>40%</td>
</tr>
<tr>
<td>PART030</td>
<td>Shared risks and rewards of tech.-based initiatives</td>
<td>45</td>
<td>180</td>
<td>25%</td>
</tr>
<tr>
<td>COMP010</td>
<td>Metrics used to measure technology's contribution</td>
<td>37</td>
<td>134</td>
<td>28%</td>
</tr>
<tr>
<td>CULT050</td>
<td>Perceived trust and value between tech. and org. staff</td>
<td>37</td>
<td>127</td>
<td>29%</td>
</tr>
<tr>
<td>CULT090</td>
<td>Ability of technology staff and tools to react to org. change</td>
<td>37</td>
<td>113</td>
<td>33%</td>
</tr>
<tr>
<td>SKIL080</td>
<td>Ability to attract and retain qualified tech. professionals</td>
<td>37</td>
<td>155</td>
<td>24%</td>
</tr>
<tr>
<td>PM130</td>
<td>Influence of technology on intermediate outcomes</td>
<td>35</td>
<td>156</td>
<td>22%</td>
</tr>
<tr>
<td>COMM050</td>
<td>Style of communication between tech. and org. leaders</td>
<td>31</td>
<td>90</td>
<td>34%</td>
</tr>
<tr>
<td>PM120</td>
<td>Influence of technology on intermediate outcomes</td>
<td>31</td>
<td>126</td>
<td>25%</td>
</tr>
<tr>
<td>COMM010</td>
<td>Tech. managers' understanding of org. environment</td>
<td>28</td>
<td>99</td>
<td>28%</td>
</tr>
<tr>
<td>COMM070</td>
<td>Role of liaisons</td>
<td>28</td>
<td>109</td>
<td>26%</td>
</tr>
<tr>
<td>CULT040</td>
<td>Interpersonal climate between tech. and program staff</td>
<td>28</td>
<td>123</td>
<td>23%</td>
</tr>
<tr>
<td>COMM060</td>
<td>Extent of knowledge sharing between tech. and org. leaders</td>
<td>27</td>
<td>95</td>
<td>28%</td>
</tr>
</tbody>
</table>
Table 12

Organizational Positions of Respondents

<table>
<thead>
<tr>
<th>Position</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate/Assistant/Deputy Director</td>
<td>4</td>
</tr>
<tr>
<td>Board Member</td>
<td>7</td>
</tr>
<tr>
<td>CEO/President</td>
<td>22</td>
</tr>
<tr>
<td>Chief</td>
<td>2</td>
</tr>
<tr>
<td>Community Relations</td>
<td>3</td>
</tr>
<tr>
<td>County Coordinator</td>
<td>1</td>
</tr>
<tr>
<td>Development Director</td>
<td>8</td>
</tr>
<tr>
<td>Director/Executive Director</td>
<td>81</td>
</tr>
<tr>
<td>Founder</td>
<td>1</td>
</tr>
<tr>
<td>Pastor/Lead Pastor</td>
<td>3</td>
</tr>
<tr>
<td>Program Manager</td>
<td>15</td>
</tr>
<tr>
<td>Secretary/Administrative Assistant</td>
<td>5</td>
</tr>
<tr>
<td>Superintendent</td>
<td>1</td>
</tr>
<tr>
<td>Technology Director</td>
<td>10</td>
</tr>
<tr>
<td>Treasurer</td>
<td>3</td>
</tr>
<tr>
<td>No position listed</td>
<td>78</td>
</tr>
<tr>
<td>Total Responses</td>
<td>244</td>
</tr>
</tbody>
</table>

Relative to technology staffing, full-time technology managers are employed by 6.8% of the organizations, while the rest of the organizations manage technology through the employ of a full-time person who does multiple tasks (21.4%), a part-time technology manager (1.5%), a part-time person who does multiple tasks (7.8%), a volunteer (14.1%) or an outside consultant (18.4%), In 30.1% of organizations, technology management is no one’s job, and 13.9% manage technology through another kind of arrangement. In 59.7% of organizations, the technology person reports to the Executive Director or the Board President.

The first set of figures below is a dashboard of the demographics of the sample of nonprofit organizations represented by the data. Staffing patterns reflected in Figure 17 show that most of the respondents have few paid staff (77%) and employ few consultants.
(74.2%) and have 20 or less volunteer board members (81.6%), but tend to engage greater numbers of volunteers.

![Bar Charts]

*Figure 17*: Staffing and Volunteer Patterns of Nonprofit Organizations in the Sample. DK/NA designates a response of “don’t know” or “not applicable, and NR designates no response.

As shown in Figure 18, a majority of organizations (62%) have annual budgets of less than $500,000, 23% have budgets between $500,000 and $2.5 million, and 9% have budgets of more than $2.5 million. Most of the organizations in the sample use less than 3% of their overall budget for technology.
The organizations in the sample serve across the state of Indiana, primarily in metropolitan areas (63%), with 25% serving non-rural areas and 12% serving rural areas. In terms of their purpose, which was designated by their mission and a description of the population they serve and classified by NTEE major categories, a majority address human service needs (43%), followed by education (21%), public and social benefit (12%) and arts, culture and humanities (11%). The overall distribution of organizations across NTEE categories, as well as across levels of rurality, is shown in Figure 19.
Individual respondents’ characteristics are shown below in Table 13. As mentioned above, a majority (70%) of respondents hold leadership positions in their organizations. Nearly half (48%) have been involved with the nonprofit organization for which they reported for nine or more years. Most respondents (81%) hold either a bachelor’s or master’s degree. The technology skill and experience level of respondents is predominantly one of experience and skill (53%), with 31% reporting they have experience with technology, but not much skill.

Table 13

Descriptive Statistics - Individual Respondent Characteristics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>%</th>
<th>% of Respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Category</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>117</td>
<td>48%</td>
<td>70%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-leadership</td>
<td>49</td>
<td>20%</td>
<td>39%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>78</td>
<td>32%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in Nonprofit Organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>33</td>
<td>14%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>43</td>
<td>18%</td>
<td>20%</td>
<td>2.76/4 item choices</td>
<td>1.178</td>
</tr>
<tr>
<td>6-8</td>
<td>25</td>
<td>10%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 or more</td>
<td>69</td>
<td>28%</td>
<td>48%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>74</td>
<td>30%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School Diploma/GED</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Diploma/GED</td>
<td>11</td>
<td>5%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Certificate</td>
<td>9</td>
<td>4%</td>
<td>5%</td>
<td>5.08/6 item choices</td>
<td>1.153</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>12</td>
<td>5%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>60</td>
<td>25%</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>76</td>
<td>31%</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>76</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Technology Experience &amp; Expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very little experience or skill</td>
<td>8</td>
<td>3%</td>
<td>5%</td>
<td>2.77/5 item choices</td>
<td>0.852</td>
</tr>
<tr>
<td>Experience, but not much skill</td>
<td>52</td>
<td>21%</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced and skilled</td>
<td>89</td>
<td>36%</td>
<td>53%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very experienced and skilled</td>
<td>11</td>
<td>5%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>9</td>
<td>4%</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>75</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Respondents were asked to identify their perceived strategy typology. Most of the 214 respondents who designated a typology, 32% classified their organization as using the Analyzer or Prospector typology, 20% classified their organization as a Defender, and 4% designated their organization as a reactor. Correspondence analysis was used in SPSS to determine the average IT/mission alignment maturity level for each of the four strategy typologies. Of all original cases that did not have any missing IT/mission alignment maturity item values (n=94) Analyzers had the highest reported overall level of IT/mission alignment (\(\bar{x}=2.17, n=29\)), Defenders were close behind (\(\bar{x}=2.16, n=19\)), followed by Prospectors (\(\bar{x}=2.14, n=43\)), and Reactors had the lowest mean level (\(\bar{x}=1.67, n=19\)).

Respondents were also asked to identify their organization’s actions relative to 56 different factors related to IT/mission alignment maturity, the extent to which they achieve organizational outcomes and the level at which they perceive technology influences their achievement of outcomes. The summary statistics below reflect responses to one strategy typology item, the averages of all responses in each of seven IT/strategy alignment criteria categories, and the averages of all responses in each of two organizational performance categories. Table 14 below shows the means, medians, standard deviations of the responses received, however the descriptive statistics do not present a fully accurate picture of the data due to issues with missing data, which are described in the following section. All descriptive statistics were derived from the actual raw data set. Additional data screening and preparation was necessary to analyze the data and compute inferential statistics, the processes of which are described below.
Table 14

*Descriptive Statistics – Model Variables*

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy Typology (Nominal variable)</td>
<td>2.22</td>
<td>2.00</td>
<td>0.86</td>
<td>1.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

IT/Mission Alignment Maturity (5-point scale)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication (7 items)</td>
<td>2.80</td>
<td>2.71</td>
<td>0.78</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Competency/Value Measurement (9 items)</td>
<td>2.39</td>
<td>2.33</td>
<td>1.07</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Governance (9 items)</td>
<td>2.14</td>
<td>2.11</td>
<td>0.88</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Partnership (6 items)</td>
<td>2.68</td>
<td>2.67</td>
<td>1.01</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Technology Scope (6 items)</td>
<td>2.93</td>
<td>2.83</td>
<td>1.01</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Skills (9 items)</td>
<td>2.34</td>
<td>2.22</td>
<td>0.81</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Culture (10 items)</td>
<td>3.18</td>
<td>3.20</td>
<td>1.01</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Overall IT/Mission Alignment Maturity</td>
<td>2.62</td>
<td>2.57</td>
<td>0.59</td>
<td>1.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Organizational Performance (Standarized to 5-point scale)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of performance</td>
<td>3.56</td>
<td>3.57</td>
<td>0.54</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Influence of technology on performance</td>
<td>3.90</td>
<td>3.91</td>
<td>0.36</td>
<td>1.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Results of Multiple Imputation

The multiple imputation of the original data set was performed, and five imputations resulted. The Multiple Imputation (MI) Results Summary table in Appendix L shows the number of missing values for each variable in the original data set and the number of imputed values that were added for each value to the data set. The number of imputed values is five times the number of missing values, as an additional estimated value was estimated during each imputation. The original mean and standard deviation for both values was computed during MI using SPSS v.20. The imputed mean and imputed standard deviation were found by averaging the mean and standard deviation of each imputed variable as suggested by He (2010). The full results of the MI, which provide original and imputed values separately for each variable is located in Appendix.
M. After the imputed data set was created, it was summarized then loaded into XLStat for principal components analysis.

Statistical Summary of Individual Items Related to SIMO

Respondents answered one item related to strategy typology, in which they chose one of four descriptions of the strategy type used in their organization. They also answered 56 IT/mission alignment maturity items which each had a 5-point multiple-choice scale, with a score of 1 indicating the lowest level of maturity for the item and a score of 5 indicating the highest level of maturity of the item. Respondents also answered 30 questions related to organizational performance in two areas – extent of organizational performance and perceived influence of technology on performance. The extent questions were of two types, four that focused on the extent of performance relative to organizational structure and had a 4-point multiple choice scale, with a score of 1 indicating lowest performance and 4 indicating highest performance, and three that focused on the extent of achievement of outcomes and had a 5-point multiple choice scale, with a score of 1 indicating the lowest percentage of achieved outcomes, and 5 indicating the highest percentage of achieved outcomes. The first four influence questions focused on the extent to which respondents perceived that technology influenced organizational structures and had matrix questions in which influence was rated relative to cost efficiency, cost effectiveness, quantity, quality and satisfaction on a Likert-type scale on which 1 was the most negative influence and 5 was the most positive influence. The last three influence questions focused on the extent to which respondents perceived that technology influenced their achievement of outcomes, which rated their perception
on a 5-point multiple-choice scale in which 1 was the lowest influence and 5 was the highest influence.

Data Analysis

Results of Correlations

Beyond just testing the SIMO model, it was important to determine whether variables external to the model could add to the understanding of the character of the subjects, the character of their organizations, and how those elements add to the understanding of the implementation of the model. Pearson’s $r$ was computed among all substantive variables to gather additional insights, which will be described first by looking at relationships that were identified involving the people who serve in NPOs (staff, board members, technology managers), then at the organizations themselves (public versus nonprofit, organization size, Internet access), then at relationships that interface with the SIMO model itself. As described in the Methodology chapter, the only correlations reported here are those that were maintained across the analyses of a complete cases from the original data set (n=44), a data set containing cases with 10% missing values (n=93), and the pooled values of 5 imputations, which in total comprised a data set of 1220 cases, but when pooled comprised a data set of 244 cases. When individuals responded “don’t know”, their responses registered as no value in the data set, which is reflected in the reported statistics below.

*Staffing.* Significant moderate correlations were identified between the number of paid staff and the employment status of a technology manager or team within an organization, levels of which ranged from a full-time paid staff member (1 on scale) to no
one in charge (7 on scale) or outsourced (8 on scale) \((r=-0.428, n=244, p=.000)\); and the number of paid staff and organizations’ status as either an NPO (value 1) or public agency (value 2) in that public agencies tended to have higher numbers of staff \((r=-0.398, n=244, p=.000)\). Strong correlation was found between the number of paid staff and the size of organizations as indicated by organizational income \((r=0.537, n=244, p=.000)\), and moderate correlations were found between the number of paid staff and the level of Internet service measured on a scale from no Internet access to T1 service \((r=0.311, n=244, p=.000)\); and the number of paid staff and their perceived level of technology expertise \((r=0.228, n=244, p=.003)\).

*Organizational characteristics.* The status of a technology manager/team was also significantly correlated with other characteristics of organizations. The employment status of a technology manager was moderately correlated with organizations’ classification as an NPO or a public agency \((r=-0.324, n=244, p=.000)\). There was a correlation found between the employment status of a technology manager/team and organizations’ level of Internet access \((r=-0.263, n=244, p=.001, \text{weak})\) and between technology manager status and organization size \((r=0.292, n=244, p=.003, \text{weak})\). Internet access was also weakly correlated with organization size \((r=0.274, n=244, p=.000)\) and NPO/public agency status \((r=-0.273, n=244, p=.000)\). Of the variables not contained within the SIMO model, no other variables were found to correlate with NTEE status, and only organizational size was weakly, positively correlated with rurality as designated by RUCC category \((r=0.192, n=244, p=.000)\). A summary of these correlations is provided in Appendix M (Correlations Among Variables not Contained Within the SIMO Model)
Correlations of organizational and individual demographic variables with SIMO variables. Some of the variables not contained within the SIMO model were correlated with the SIMO model variables. Weak positive correlation was found between the willingness to support IT/mission alignment and technology/mission alignment maturity criteria variable Competency and Value Measurement maturity \((r=0.241, n=174, p=.010)\), strong correlation was found with Partnership and Collaboration maturity \((r=0.505, n=110, p=.000)\), moderate correlation was found with Infrastructure Scope and Architecture maturity \((r=0.335, n=170, p=.000)\), Human Resources and Skills maturity \((r=0.320, n=157, p=.000)\) and Governance maturity \((r=0.364, n=174, p=.006)\). The Infrastructure Scope and Architecture criterion was also weakly positively correlated with individuals’ level of technology experience and expertise \((r=0.254, n=170, p=.002)\) and status of the technology manager’s role \((r=-0.287, n=170, p=.000)\), and moderately correlated with organizational size \((r=0.388, n=170, p=.000)\), number of paid staff \((r=0.353, n=170, p=.000)\) and Internet access \((r=0.374, n=170, p=.000)\). The number of volunteer board members was weakly positively correlated with the technology/mission alignment criterion Competency and Value Measurement maturity criterion variable \((r=0.205, n=174, p=.007)\). Strength of correlation follows Cohen’s (1988) guidelines for interpreting statistical strength. These correlations suggest that outside variables may influence technology/mission alignment practices or vice-versa, and the specific alignment practices with which the variables are related reinforce previous findings as well as illuminate considerations for both theorists and practitioners, insights that will be addressed in the following chapter.
Correlations of SIMO model variables. Positive correlations were also found among the SIMO model variables. Analysis of the IT/mission alignment maturity criteria resulted in positive, significant correlations among all the criteria except Organizational Culture and Governance, and for all criteria but Organizational Culture, the correlations were strong, above .500. Similarly, positive, significant correlations were found among extent of organizational structure, or day-to-day performance variables and all of the IT/mission alignment maturity criteria except Communication Effectiveness. Positive significant correlations were also found between perceived influence of technology on day-to-day performance and all IT/mission alignment criteria except Organizational Culture. Relationships were not as consistent nor as strong between extent of outcomes and the IT/mission alignment maturity criteria, but still a majority of positive relationships were identified. Likewise, correlations between perceived influence of technology on outcomes and IT/mission alignment maturity criteria were not as strong, but five of seven of the criteria were positively correlated with that variable. Interestingly, but understandably after reviewing results of the partial least squares path modeling analysis below, strategy typology was not directly correlated with any of the other SIMO model variables. A summary of the Pearson Product Moment Correlation coefficients for the SIMO model variables is shown in Appendix N (Correlations Among Technology/Mission Alignment Criteria and Organizational Performance Measures). These correlations provide a logical preface for the principal component analysis and partial least squares path modeling analyses described in the next sections.
Results of Principal Components Analysis

The 56 IT/mission alignment maturity factors in the imputed data set of 1220 cases was analyzed using principal components analysis (PCA) in order to verify the 6 original factors identified by Sledgianowski (2004) and determine whether the seventh factor, culture, could be extracted from the variables. Two rounds of PCA were performed on both the original data and the imputed data for visual comparison purposes, although just the results of the imputed data were considered in the analysis, as the original data did not have a sufficient sample size of complete cases to subject it to factor analysis. The first round of PCA was performed to reduce the dimensions of the data set, and the second to examine factor loadings on the 7 a priori factors.

In the first round of PCA, the strategy typology, IT/mission alignment maturity and organizational performance variables were selected for analysis. Univariate descriptives, initial solution, coefficients, significance levels, Kaiser-Meyer-Olking Measure of Sampling Adequacy (KMO), and Bartlett’s Test of Sphericity statistics were run to test assumptions. Extraction was requested based on factors with Eigenvalues greater than 1, with 25 iterations to be done to achieve convergence. The KMO was .703, which is greater than the value of .50 recommended by Field (2009) and the value of .60 recommended by Starkweather (2013) to “assess the adequacy of sampling size and evaluate correlations to determine if data are likely to coalesce on factors” (p. 4). The Bartlett’s Test statistic, a chi-square statistic which evaluates if the correlation matrix is an identity matrix, something that is not desired in PCA because that would mean the variables are unrelated and unsuitable for structure detection, had a significance level of .000, which indicated that the matrix was not an identity matrix. In the imputed data set,
54 of the 56 factors had communalities above .600, a statistic that is considered high when over .400, which is desirable because it explains the proportion of each variable’s variance that can be explained by the principal components (IDRE, 2013). Twenty of all factor loadings converged on the first factor, which is typical (Starkweather, 2013), and the first 20 factors had eigenvalues between 1.018 and 7.588. The total variance explained by the 20 loaded factors was 64.653%, a percentage we would expect to diminish in the second round if the variables converged on a lower number of factors with a higher proportional percentage of variance explained by the loaded factors. Factor scores were saved from the analysis in order to run a bivariate correlation to see if any of the factor scores are related. The correlation showed that none of the factor scores were related, which suggested that the factors themselves were not related, which indicated that an orthogonal rotation (as opposed to an oblique rotation) should be used in subsequent rounds of PCA. Results of the first extraction are summarized in Table 15 below.

In the second round of PCA, the same variables were selected for analysis, which this time included applying varimax rotation and indicating that a fixed number of factors, the \textit{a priori} 7, should be retained in the extraction done with a limit of 25 iterations to achieve convergence. The KMO remained at .703 and the Bartlett’s test remained at .000, as the sample size did not change. In the imputed, rotated data set, 47 of the 56 all factor loadings had communalities above .60. The variables loaded on 7 factors because they were selected in advance, and the converged factors had eigenvalues between 1.631 and 7.160, which remained above the cutoff value of 1.0. The total variance explained by the 7 loaded factors was 34.731%, a percentage that was desirable.
because it showed that the variables loaded on fewer factors with a higher proportional
percentage of variance explained by the loaded factors. This statistic, in and of itself,
provided the evidence we need that the variables do, in fact, load on the 7 \textit{a priori} factors,
however, a review of the full results of the factor loadings after varimax rotation, located
found that while the IT/mission alignment maturity variables tend to cluster according to
criteria around separate factors and at 2 least variables loaded on each of the 7, some of
them co-loaded on other factors, and not all factors within a cluster were within the
lowest range of acceptable factor loading of .32, regarded as poor, by Tabachnick and
Fidell (2007). This indicates that further refinement and testing of the adapted
questionnaire items is necessary, as well as a more effective data collection strategy.

Results of the second extraction are summarized in Table 16 below. While the factor
structure of the IT/mission alignment maturity factors was found to be weak, evidence
was provided through the PCA that a structure existed. Accordingly, analysis moved to

---

**Table 15**

\textit{Principal Components Analysis and Factor Extraction Based on Eigenvalues >1}

<table>
<thead>
<tr>
<th></th>
<th>Original Data</th>
<th>Imputed Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=18</td>
<td>N=1220</td>
</tr>
<tr>
<td>Kaiser-Meyer-Olkin Measure</td>
<td>.612*</td>
<td>.703</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-Square</td>
<td>1632.408</td>
<td>18893.408</td>
</tr>
<tr>
<td>df</td>
<td>1540</td>
<td>1540</td>
</tr>
<tr>
<td>Sig</td>
<td>.05**</td>
<td>.000**</td>
</tr>
<tr>
<td>Variable Communalit \textgreater .60</td>
<td>26</td>
<td>54</td>
</tr>
<tr>
<td>Number of Factors Extracted</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Loadings</td>
<td>All but GOV010</td>
<td>All on #1</td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>1.151-16.368</td>
<td>1.018-7.588</td>
</tr>
<tr>
<td>Total Var. Expl. by Loaded Factors</td>
<td>96.24%</td>
<td>64.543</td>
</tr>
<tr>
<td>Factor 1 Percent of Total Variance</td>
<td>29.23%</td>
<td>12.785</td>
</tr>
<tr>
<td>Correlations</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Correlation matrix for original data not positive definite

**Significant
the next phase, partial least squares path modeling, to determine whether relationships exist between those factors, strategy maturity and organizational performance.

Table 16

Principal Components Analysis and Factor Extraction Using Varimax Rotation with 7 Fixed Factors

<table>
<thead>
<tr>
<th></th>
<th>Original Data N=18</th>
<th>Imputed Data N=1220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure</td>
<td>0.612*</td>
<td>0.703</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chi-Square</td>
<td>1632.408</td>
</tr>
<tr>
<td></td>
<td>df</td>
<td>1540</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>0.05**</td>
</tr>
<tr>
<td>Variable Communality &gt; .60</td>
<td>33</td>
<td>47</td>
</tr>
<tr>
<td>Number of Factors Extracted</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Loadings</td>
<td>Loaded on 7</td>
<td>Loaded on 7</td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>2.967-16.368</td>
<td>1.631-7.160</td>
</tr>
<tr>
<td>Total Variance Expl. by Loaded Factor</td>
<td>74.407</td>
<td>34.731</td>
</tr>
<tr>
<td>Factor 1 Percent of Total Variance</td>
<td>17.423</td>
<td>7.085</td>
</tr>
<tr>
<td>Correlations</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Correlation matrix for original data was not positive definite due to insufficient sample size
**Significant

Results of Partial Least Squares Path Modeling

The imputed data obtained through multiple imputation was next subjected to Partial Least Squares Path Modeling (PLS-PM) using XLStat (Addinsoft, 2013) in order to identify and evaluate relationships between the latent variables strategy typology, technology/mission alignment maturity and organizational performance and test the proposed SIMO model. The results of the two stages of PLS-PM, as well as reliability and validity testing, are described herein.

Assessment of the Measurement Model. Classic PLS-PM methodology was used for the analysis. Latent variables ‘strategy typology’, ‘organizational performance’, and
technology/mission alignment maturity were created, and arrows indicating the proposed relationships between the variables were used to connect them. An arrow indicating a two-way relationship between strategy typology and IT/mission alignment maturity, a one-way arrow from strategy typology to organizational performance, and a one-way arrow from IT/mission alignment to organizational performance indicated the proposed relationships.

Then observable, or manifest, variables were defined for each of the latent variables, based on the results of the PCA and the *a priori* variables identified from previous research. For strategy typology, the only observable variable was the strategy typology item itself, so it also served as the manifest variable. For IT/mission alignment maturity, the seven criteria, the *a priori* factors were designated as the manifest variables: communication (COMM x̄), competency (COMP x̄), governance (GOV x̄), partnership (PART x̄), scope (SCOP x̄), skills (SKIL x̄) and culture (CULT x̄). In order to establish values for each of the seven criteria, the means of the items within each criteria, the individual responses, were averaged to establish a score for each factor. Four values served as manifest variables representing the latent variable organizational performance: the performance measurement variables reflecting responses to survey items related to the extent of organizational structure performance (stakeholder engagement, capacity, activities and outputs), in other words performance on day-to-day work toward goals, were averaged (EXT D2D x̄), as were items related to perceived influence of technology on organizational structure performance (INF D2D x̄), items related to extent of achievement of outcomes (EXT OUT x̄) and influence of technology on achievement of outcomes (INF OUT x̄).
The PLS-PM function was run with initial weights as the values of the first eigenvector, using centroid internal estimation and convergence at .0001 set to stop at 100 iterations. Manifest variables were standardized because the variables for each of the latent factors are not comparable measures. Actual and bootstrap confidence intervals were set at 95%, and bootstrap values were determined through 100 resamplings.

Unidimensionality of the latent factors, or whether the manifest variables reflect them, was assessed in the analysis. Unidimensionality is the way in which convergent validity is established for the measurement model, or the outer model, in PLS-PM. Principal component analysis, Dillon-Goldstein’s rho and Cronbach’s alpha are used to assess each block of manifest variables and indicate the extent to which the manifest variables were representative of the true values of the latent variables. If the first eigenvalues of a variable block are considerably larger than the remaining variables, according to Addinsoft (2013a), then the block is unidimensional, which was the case for IT/mission alignment maturity and organizational performance. A block is also considered unidimensional if Cronbach’s alpha is greater than .700, which was the case for IT/mission alignment maturity (.757), but not organizational performance (.366). A large Dillon-Goldstein’s rho, greater than .5, also indicates unidimensionality, which was indicated for both IT/mission alignment (.828) and organizational performance (.646). Strategy typology could not be assessed for unidimensionality because with one variable, reflectivity is irrelevant. This test completed the first phase of PLS-PM and the measurement model was defined. Table 17 summarizes measures of unidimensionality.
### Table 17

**PLS-PM Unidimensionality, Composite Reliability and Validity**

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Dimensions</th>
<th>Cronbach's alpha (PCA)</th>
<th>Condition number</th>
<th>Critical value</th>
<th>Eigenvalues</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT/Mission Alignment Maturity</td>
<td>7</td>
<td>0.757</td>
<td>0.828</td>
<td>2.401</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.876</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.813</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.754</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.625</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.555</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.499</td>
</tr>
<tr>
<td>Organizational Performance</td>
<td>4</td>
<td>0.366</td>
<td>0.646</td>
<td>1.704</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.503</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.996</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.984</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.517</td>
</tr>
<tr>
<td>Strategy Typology</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Assessment of the Structural Model.* A structural model is comprised of interrelated linear equations that relate the latent variables to one another. Once the unidimensionality of each of the latent variables is established, then relationships are considered. The Goodness of Fit index (GoF) indicates whether the model reflects the data and is represented by a chi-square test statistic. The absolute goodness of fit for the SIMO model was .230, which is not very high, but the relative goodness of fit was .767, the outer model goodness of fit was .995 and the inner model of goodness of fit was .771. When compared to bootstrap estimates of 100 replications of use of the model, the bootstrap estimates are within .01 of the actual GoF statistics, which indicates goodness of fit. GoF indexes are found in Appendix N, Partial Least Squares Path Modeling (PLS-PM) Full Results. Cross-loadings of the manifest variables with the latent variables indicated that the loadings between the manifest variables and their latent variables were...
highest for IT/mission alignment and organizational performance, with full loading of strategy on itself. Low to moderate loadings (.224 to .400) were indicated between IT/mission alignment and organizational performance; slight negative loadings were indicated between strategy typology and IT/mission alignment maturity (-.006 to -.074); and slight negative loadings were indicated between strategy and organizational performance (-.003 to -.023). Table 18 below illustrates cross loadings.

Table 18

Cross Loadings of Monofactorial Manifest Variables

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>strategy typology</th>
<th>technology/mission alignment</th>
<th>organizational performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>strategy typology</td>
<td>1.000</td>
<td>-0.068</td>
<td>-0.023</td>
</tr>
<tr>
<td>technology/mission alignment (factor means)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>communication effectiveness</td>
<td>-0.067</td>
<td><strong>0.537</strong></td>
<td>0.224</td>
</tr>
<tr>
<td>competency &amp; value measurement</td>
<td>-0.006</td>
<td><strong>0.607</strong></td>
<td>0.245</td>
</tr>
<tr>
<td>governance</td>
<td>-0.023</td>
<td><strong>0.692</strong></td>
<td>0.287</td>
</tr>
<tr>
<td>partnership &amp; collaboration</td>
<td>-0.090</td>
<td><strong>0.652</strong></td>
<td>0.325</td>
</tr>
<tr>
<td>scope &amp; architecture</td>
<td>-0.074</td>
<td><strong>0.752</strong></td>
<td>0.400</td>
</tr>
<tr>
<td>human resources &amp; skills</td>
<td>-0.011</td>
<td><strong>0.627</strong></td>
<td>0.359</td>
</tr>
<tr>
<td>organizational culture</td>
<td>-0.012</td>
<td><strong>0.577</strong></td>
<td>0.370</td>
</tr>
<tr>
<td>organizational performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>extent day-to-day</td>
<td>-0.018</td>
<td>0.432</td>
<td><strong>0.837</strong></td>
</tr>
<tr>
<td>influence of tech. on day-to-day</td>
<td>-0.023</td>
<td>0.352</td>
<td><strong>0.758</strong></td>
</tr>
<tr>
<td>extent outcomes</td>
<td>-0.004</td>
<td>0.187</td>
<td><strong>0.359</strong></td>
</tr>
<tr>
<td>influence of tech. on outcomes</td>
<td>-0.003</td>
<td>0.192</td>
<td><strong>0.293</strong></td>
</tr>
</tbody>
</table>

*Note: Loading values in **bold** indicate loading on one’s own latent/manifest variable.*

Path coefficients between the three variables permitted evaluation of the structural model. An illustration of the initial PLS-PM coefficient, shown in Figure 20 below, indicates that there are relationships between two of the latent variables. The path from IT/mission alignment to organizational performance has a path coefficient of .509, with
an $R^2$ value of .258, indicating that IT/mission alignment contributes 23.5% of variance to the model and a substantial relationship between those two variables. The path from strategy typology to organizational performance has a much smaller path coefficient, of .012 and an $R^2$ value of .0003, indicating that strategy typology contributes .03% of variance to the model. The path from IT/mission alignment maturity to strategy typology in the figure above shows a path coefficient of -.068, with an $R^2$ value of .005, indicating there is a very slight, inverse relationship between IT/mission alignment maturity and strategy typology and that relationship contributes to .5% of variance to the model.

When the direction of the path was reversed between IT/mission alignment maturity and strategy typology in a subsequent implementation of PLS-PM, indicating a two-way relationship between them as suggested in the SIMO model, all of the path coefficients and weights remained the same, suggesting that strategy typology has no influence on the model. This follows earlier findings, in which strategy typology had no loadings and negligible cross loadings with the other two variables. It was surmised that its character in the model as a single variable, rather than a composite of several manifest variables could contribute to its lack of influence in the model. Accordingly, an additional series of PLS-PM was run to investigate whether the four different values of the strategy typology indicated different relationships between IT/mission alignment maturity and organizational performance. In these iterations of the model,
rather than including strategy typology as a latent variable, only those cases with the same value of the strategy typology variable were included in the analysis of relationships between the other two latent variables. The resulting path models are shown below in Figures 21, 22, 23 and 24.
In the figure above, only the 423 cases containing the Prospector value of strategy typology were analyzed. Recall that organizations characterized as Prospectors look for ways to solve emerging needs and be the first on the block to implement new programs or activities. An assessment of the influence of the Prospector strategy typology on the relationship between IT/mission alignment maturity and organizational performance found that the path coefficient is .529, with an $R^2$ value of .279. Considering the influence of IT/mission alignment manifest variables, the SKIL $\bar{x}$ (.261) and CULT $\bar{x}$ (.265) variables contribute the most weight to the influence on organizational performance. Considering the influence of organizational performance manifest variables, extent of day-to-day performance (EXT D2D $\bar{x}$=.610) and influence of technology on day-to-day performance (INF D2D $\bar{x}$=.520) contribute nearly double the
weight of extent of achievement of outcomes (EXT OUT \(\bar{x}=.272\)) and influence of technology on achievement of outcomes (INF OUT \(\bar{x}=.286\)) variables. The relationships found for the Analyzer strategy typology are similar in structure, as shown in Figure 22.

In Figure 22, the 429 cases containing the Analyzer value of strategy typology were analyzed. Analyzers tend to have a stable strategic environment, they are conservative in their approach to seeking out and solving new problems, and they use environmental scanning to identify needs and structured planning to determine their approach to them. An assessment of the influence of the Analyzer strategy typology on the relationship between IT/mission alignment maturity and organizational performance found that the path coefficient is .501, with an \(R^2\) value of .251. Considering the influence
of IT/mission alignment manifest variables, the SCOP $\bar{x} (.326)$ and CULT $\bar{x} (.298)$ variables contribute the most weight to the influence on organizational performance. Considering the influence of organizational performance manifest variables, again extent of day-to-day performance (EXT D2D $\bar{x}=.551$) and influence of technology on day-to-day performance (INF D2D $\bar{x}=.494$) contribute nearly double the weight of extent of achievement of outcomes (EXT OUT $\bar{x}=.266$) and influence of technology on achievement of outcomes (INF OUT $\bar{x}=.239$) variables. The relationships found for the Defender strategy typology are similar in structure, as shown in Figure 23.

Figure 23. Partial Least Squares Path Model (PLS-PM) of IT/Mission Alignment Maturity and Organizational Performance Including Cases with the Defender Value of the Strategy Typology Variable ($n=286$ imputed)

Figure 23 shows only the 286 cases containing the Defender value of strategy typology were analyzed. Defenders focus on improving efficiency in their existing domain, strengthening and reinforcing existing, often best-practice programs. An
assessment of the influence of the Defender strategy typology on the relationship between IT/mission alignment maturity and organizational performance found that the path coefficient is .547, with an $R^2$ value of .300. Considering the influence of IT/mission alignment manifest variables, the SCOP $\bar{x}$ (.284) and CULT $\bar{x}$ (.266) variables contribute the most weight to the influence on organizational performance. Considering the influence of organizational performance manifest variables, yet again extent of day-to-day performance (EXT D2D $\bar{x}$ = .591) and influence of technology on day-to-day performance (INF D2D $\bar{x}$ = .506) contribute nearly double the weight of extent of achievement of outcomes (EXT OUT $\bar{x}$ = .263) and influence of technology on achievement of outcomes (INF OUT $\bar{x}$ = .330) variables. The relationships found for the Reactor strategy typology are similar in structure, as shown in Figure 24.

![Figure 24](image.png)

*Figure 24. Partial Least Squares Path Model (PLS-PM) of IT/Mission Alignment Maturity and Organizational Performance Including Cases with the Reactor Value of the Strategy Typology Variable (n=79 imputed)*
In Figure 24 above, the last of the strategy typology analyses are shown, the PLS-PM result when the 79 cases containing the Reactor value of strategy typology were analyzed. Reactors are ‘fire fighters’ in terms of strategy, responding in a disorganized way to outside pressures rather than proactively adapting to their environment. An assessment of the influence of the Reactor strategy typology on the relationship between IT/mission alignment maturity and organizational performance found that the path coefficient is .454, with an $R^2$ value of .206. Considering the influence of IT/mission alignment manifest variables, the CULT $\bar{x}$ (.522) and PART $\bar{x}$ (.428) variables contribute the most weight to the influence on organizational performance and, along with SKIL $\bar{x}$ (.389) have weights that are considerably higher than the remainder of the IT/mission alignment criteria for this strategy typology, and the range between the lowest and highest weights is considerably greater than the range for the other three strategy typologies, a finding that is displayed in Table 19 below will be discussed in the next chapter. Considering the influence of organizational performance manifest variables, also for Reactors, the weight of extent of day-to-day performance (EXT D2D $\bar{x}$=.814) and influence of technology on day-to-day performance variables (INF D2D $\bar{x}$=.342) are greater than, actually far greater than the weight of extent of achievement of outcomes (EXT OUT $\bar{x}$=.142), and influence of technology on achievement of outcomes (INF OUT $\bar{x}$=.0002) variables. The relationships found for the Reactor strategy typology are similar in structure, as shown in Figure 24. A summary of these findings is shown below.
Table 19

Summary of Partial Least Squares Path Model Run Only With Cases of One Strategy Typology Value

<table>
<thead>
<tr>
<th>Strategy Typology Value</th>
<th>Path Coef.</th>
<th>R²</th>
<th>Largest IT/M Align. MV Weight</th>
<th>Largest IT/M Align. MV Weight</th>
<th>Range of IT/M Align. MV Weights</th>
<th>EXT D2Dx Weight</th>
<th>INF D2Dx Weight</th>
<th>EXT OUTx Weight</th>
<th>INF OUTx Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospector</td>
<td>0.529</td>
<td>0.279</td>
<td>CULTx</td>
<td>SKILx</td>
<td>0.131</td>
<td>0.610</td>
<td>0.520</td>
<td>0.272</td>
<td>0.286</td>
</tr>
<tr>
<td>Analyzer</td>
<td>0.501</td>
<td>0.251</td>
<td>SCOPx</td>
<td>CULTx</td>
<td>0.184</td>
<td>0.551</td>
<td>0.494</td>
<td>0.266</td>
<td>0.239</td>
</tr>
<tr>
<td>Defender</td>
<td>0.547</td>
<td>0.300</td>
<td>SCOPx</td>
<td>CULTx</td>
<td>0.095</td>
<td>0.591</td>
<td>0.506</td>
<td>0.263</td>
<td>0.330</td>
</tr>
<tr>
<td>Reactor</td>
<td>0.454</td>
<td>0.206</td>
<td>CULTx</td>
<td>PARTx</td>
<td>0.524</td>
<td>0.814</td>
<td>0.342</td>
<td>0.142</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Summary

This chapter described data screening procedures necessary to achieve an adequate estimated data set for inferential statistical analysis. Descriptive statistics were presented for the original data set. Multiple imputation (MI) results were presented, then the imputed data set was used to derive results to principal component analysis (PCA) and partial least squares path modeling (PLS-PM) analyses. The last PLS-PM series provides insight into the interactions between all three of the latent variables. Together all of the PLS-PM models inform the hypotheses that framed this investigation. The final chapter will discuss the hypotheses, share conclusions and propose recommendations for the future of SIMO.
CHAPTER VII

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The questions that framed this investigation focus on relationships between three constructs: strategy typology, IT/mission alignment maturity and organizational performance in NPOs. They query whether there are factors that influence NPOs’ level of IT alignment maturity, whether there is a relationship between NPOs’ strategy typology, level of IT alignment maturity and achievement of performance outcomes and also, if they function overall using a certain strategy typology, whether that influences the relationship between their IT alignment maturity and their achievement of outcomes. The hypotheses presented at the outset of the investigation posited that there are relationships, an assertion that can now be revisited in light of the data analysis described above. This chapter provides a discussion of the results of the analysis and addresses the five research questions and hypotheses in this study. Conclusions are presented, limitations of the study are discussed, and suggestions are given for future research and practitioner considerations.

Discussion of the SIMO Model

Returning to the study’s overarching research question, “How do NPOs adopt and use technology in ways that make a measurable difference in their achievement of
outcomes”, this investigation brought to the field the understanding that the extent to which an NPO aligns technology tools and strategies with its mission-focused work has a positive relationship with its level of day-to-day performance, and that specific strategy typologies influence this relationship in unique ways. The ‘how’ of adoption and use is demonstrated in technology/mission alignment practices reported by NPO representatives:

- Competency and Value Measurement: How an organization measures the impact of technology and what it does with that measurement information,
- Governance: How decisions are made regarding bringing technology into the mix,
- Partnership and Collaboration: How an organization builds and manages internal and external relationships relative to technology adoption and use,
- Infrastructure Scope and Architecture: How an organization sets up its shop and chooses the right tools for the job,
- Human Resources and Skills: How nonprofit staff and volunteers acquire the knowledge and skills necessary to effectively integrate technology into their work, and
- Organizational Culture: How an organization’s values, priorities, assumptions and processes influence behaviors and attitudes related to technology.

This findings of this study do not prescribe particular technology tools or organizational behaviors that automatically lead to changes in outcomes, in other words, “how to do it”. What the findings do describe are the types of strategies and the range of technology/mission alignment practices that influence day-to-day organizational
performance which, as suggested by Wholey et al. (2010), if mission-focused, should lead to achievement of outcomes.

The study found moderate to strong relationships between organizations’ reported engagement in alignment practices (as described and measured by the SIMO model) and their levels of day-to-day organizational performance in terms of engaging stakeholders, maintaining sufficient capacity, implementing activities and delivering outputs at levels commensurate with their established organizational goals. This finding suggests that if an organization uses more mature alignment practices, it should achieve higher levels of day-to-day organizational performance, and the converse should also be true. This illustrates ‘how’ an organization could change specific technology/mission alignment practices, the factors, to make a measurable difference in their level of organizational performance. The study also identified specific strategy typologies that positively influence the relationship between technology/mission alignment and organizational performance. Strategy, defined simply by Miles and snow as the structures and processes an organization uses to do its work (1978), is another “how” in the SIMO model, one which influences the ways organizations choose to adopt and use technology and the results of those choices. Accordingly, the “big question” of the investigation serves as an appropriate umbrella for the research questions, which break down the SIMO model to identify the “how” relationships:

1. What factors influence nonprofit organizations’ level of IT alignment maturity?
2. Is there a relationship between nonprofit organizations’ strategy typology and their level of IT alignment maturity?
3. Is there a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes?
4. Is there a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes?
5. Given a specific strategy typology, what is the relationship between IT alignment maturity and performance outcomes?

Discussion of Research Question 1

The first research question, “What factors influence nonprofit organizations’ level of IT alignment maturity?” was addressed by first conducting a literature review of the cumulative research on IT alignment as it has been conceptualized and applied in both the business and nonprofit sectors. An assessment instrument, SAMM (Luftman, 2000) was identified as the primary instrument through which businesses assess IT alignment maturity, and Heye’s (2009) Five Stages of Managing Technology was identified as a similar framework NPOs can use to informally assess where they are in the evolutionary process and identify specific practices they can change to become more mature in their alignment between IT and organizational mission and goals. These two models informed the creation of the SIMO survey, an instrument consisting of a section of 56 items that assesses NPOs’ level of IT/mission alignment maturity. The 56 items included a majority of the items from SAMM that measure six latent factors (communication, competency and value measurement, governance, partnership, scope and architecture, and skills) adapted for use in the nonprofit sector, as well as new items comprising a new factor, organizational culture. derived from the nonprofit literature. The latent factors measured
by SAMM, according to previous studies (Sledgianowski, 2004; Sledgianowski et al., 2006), fulfill the first of this study’s primary assumptions, of being valid and reliable, one of five assumptions presented on page 12.

The variables measured with the survey loaded on the 7 factors, and the converged factors all had eigenvalues above the recommended cutoff of 1.0. However, while the IT/mission alignment maturity variables clustered according to criteria around separate factors and at least 2 variables loaded on each of the 7, some of them co-loaded on other factors, and not all factors within a cluster were within the lowest range of acceptable factor loading of .32, regarded as poor, by Tabachnick and Fidell (2007). Further, the criteria (factors) were found to be highly correlated with one another which was a divergence from the results of the PCA findings. This indicates that the items within each factor need to be further refined and analyzed to establish clearly uncorrelated criteria with which to measure IT/mission alignment maturity. These findings could be related to the incomplete data set, which was caused by a number of methodological issues that will be revisited in the limitations section. The incomplete data set challenges the fourth assumption upon which this study was based. This assumption, that nonprofit organization representatives participating in the study can accurately identify their organization’s present level of IT alignment factors was not fulfilled, as only 89 respondents completed all 56 of the IT/mission alignment items. These findings indicate that further refinement and testing of the adapted questionnaire items is necessary, as well as a more effective data collection strategy.

In addition to the IT/mission alignment maturity factors contained in the SIMO model, other variables were found to be related to each of the individual factors.
Respondents’ willingness to support their organization’s efforts to align technology with its mission was found to be related to five of the seven IT/mission alignment maturity factors. The highest level of willingness a respondent could indicate was “very supportive and willing to champion the effort”. A positive correlation between these items indicates that in organizations in which someone is willing to be, or already is a champion, IT/mission alignment maturity will be higher. This finding reinforces those of Cragg, King & Hussin (2002), Kearns & Lederer (2003), Luftman (2003) and Reich & Benbasat (2000), who noted that most often technology alignment efforts are initiated by a champion. Considering one IT/alignment factor in particular, architecture scope and infrastructure (SCOP), it was found to be related to several variables that are external to the model: the level of expertise of the respondent, the status of a technology manager, the size of an organization, the number of staff and the level of Internet access. This cluster of relationships around the SCOP variable reinforces the idea of a digital divide among NPOs, which is attested to by nonprofit practitioners, who describe a void in training, leadership in technology adoption and use, and funding for technology in the nonprofit sector (Hancock, 2013, Hill, 2013; Liimatta, 2011), even a decade after Servon (2001) and Schneider (2003) brought the issue to light. In consideration of Hypothesis 1, “Specific factors influence IT alignment maturity” the hypothesis is supported by the model test statistics with the qualification that the exploratory model and instrument require additional refinement, and it is also supported by the correlation of factors external to the SIMO model, specifically the existence of a champion, or potential champion, and the persistence of the nonprofit digital divide.
Discussion of Research Question 2

The second research question, “Is there a relationship between nonprofit organizations’ strategy typology and their level of IT/mission alignment maturity?” was addressed by asking respondents to identify the general strategy typology their organization uses from Miles & Snow’s (1978) four typologies. Nearly all respondents (n=214, 88%) were able to identify a specific strategy typology that guides their organization’s work, which fulfills the third assumption upon which the study was based. The relationship between strategy typology and IT/mission alignment maturity was examined by seeking a Pearson’s $r$ for strategy typology and all other variables, and by running the PLS-PM assessment to test the SIMO model with all three model constructs serving as latent variables. When the strategy typology variable was correlated with all other variables in the model, no relationships were found. When the variable was correlated directly with the latent variable IT/mission alignment maturity, the path coefficient was -0.068, the correlation was -0.068, and it cross-loaded in a negative direction at levels ranging from -.090 to -.011 with all of the IT/mission alignment maturity manifest variables, which indicates there is no significant relationship between the two constructs.

The way in which strategy typology was represented in the initial structural model did not facilitate loading, which is an issue that was foreshadowed by the “exploded” diagram of the SIMO model in Chapter 4. Because strategy typology as it is measured by the SIMO survey is not a construct composed of multiple manifest variables, rather it is a single variable that characterizes segments of the data set, the PLS-PM process cannot recognize its direct influence on the other latent variables. Other investigations have used
a variety of combinations of scale items and typed paragraphs to characterize strategy typology, and in those cases PLS-PM was successful in estimating its relationship with other latent variables. However, the typed paragraph has been the predominant measure used, which is why it was selected for use in this investigation. While it did not appear in the initial SIMO model to influence other variables, when considered in light of the relationship between IT/mission alignment maturity and organizational performance, strategy typology did influence the relationship, as was proposed in the SIMO model. This will be discussed in more detail relative to Research Question #5. Considering Hypothesis 2, though, “There is a relationship between nonprofit organizations’ strategy typology and their level of IT alignment maturity,” the data does not support a direct relationship between the two.

Discussion of Research Question 3

The third research question, “Is there a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes?” was also addressed by correlating all of the model variables and through PLS-PM assessment and testing of the SIMO model with all three constructs serving as latent variables. Again, when the strategy typology variable was correlated with all other variables, no relationships were found. When it was directly correlated with the latent variable organizational performance, the path coefficient was .012 the correlation between them was .0003, and when cross-loaded with the four organizational performance manifest variables, the values ranged from -.023 to -.003 which indicates there is not a significant relationship between the two constructs. Again, when the strategy typology variable was
considered in light of the relationship between IT/mission alignment maturity and organizational performance, it did show evidence of influencing the relationship, findings of which will be reviewed in discussion of Research Question #5. Considering Hypothesis 3, “There a relationship between nonprofit organizations’ strategy typology and their achievement of performance outcomes,” as was the case for Hypothesis 2, the data does not support a direct relationship between the two.

Discussion of Research Question 4

The fourth research question, “Is there a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes?” was also addressed by the PLS-PM assessment and testing of the SIMO model with all three constructs serving as latent variables. When the IT/mission alignment maturity latent variable was correlated directly with the organizational performance latent variable, the path coefficient was .509, the correlation was .258, when cross-loaded with the four organizational performance manifest variables, the values for IT/mission alignment maturity ranged from .293 to .837, which indicates there is a relationship between the two constructs.

When the four organizational performance manifest variables are examined more closely, it becomes evident that the two organizational structure variables (EXT D2Dx̅ and INF D2Dx̅), those which measure day-to-day performance toward organizational goals, have nearly twice as strong a relationship with IT/mission alignment maturity than the outcomes structure variables (EXT OUTx̅ and INF OUTx̅). This strongly suggests that organizations with higher levels of IT/mission alignment maturity are more efficient,
cost effective, of higher quantity and/or quality, and achieve higher satisfaction relative to their stakeholder engagement, capacity, programs and outputs than those with lower levels of IT/mission alignment. This component of organizational performance is critical to maximize and measure, because it is the organizational structure of a nonprofit that creates the conditions and provides services that will influence the behaviors, attitudes, conditions, knowledge and status that the organization ultimately strives to change. In other words, organizational structure performance is a necessary precursor to outcome performance.

The PLS-PM analysis also suggests that outcome structure is influenced by IT/mission alignment but its weight is half as much as organizational structure in the model. This finding, along with the consideration that day-to-day performance prefaces outcome achievement raises concern that IT/mission alignment may not be directly related to outcomes, rather, it could be a position removed from outcomes in the PLS path model, thus suggesting that the model may need to be reconfigured. However, the model may be sound, but the incomplete data set may have influenced the weighting of the performance variables. This is quite possible, because, as was discussed in Chapter 3, many nonprofits stop measuring performance at the organizational structure level. This assertion was supported by this investigation, as 94% of respondents reported that they measure day-to-day performance, but only 55% reported measuring outcomes.

This finding challenges the fifth assumption upon which the investigation was based – that nonprofit organizations involved in the study have and can articulate results of a process for measuring organizational performance. Most do, but the process is incomplete. This is not unusual, and it is a problem that persists sector-wide, according to
MacIndoe and Barman (2013), who suggest that measurement of outcomes is influenced by external actors that require use of outcome measurement, internal actors that control allocation of resources for outcome measurement and organizational networks that establish norms of governance, one of which is the practice of performance measurement. These influencing factors share similarities with some of the factors that influence IT/mission alignment, a similarity that will be addressed in recommendations for the field. These factors were beyond the scope of the present investigation, but they are important to the understanding of the SIMO model. Accordingly, the insight from MacIndoe and Barman suggests that the second assumption of the study, that the factors investigated in the study are not the only ones that influence each other, but they may increase understanding of the relationships between them, is true. There is more to the understanding of strategy, IT/mission alignment and organizational performance than what is represented by SIMO. Taking these findings into account when considering Hypothesis 4, “There is a relationship between nonprofit organizations’ levels of IT alignment maturity and their achievement of performance outcomes,” the hypothesis is supported, but the relationship remains unclear and requires further investigation with a complete data set collected from a sample that fulfills the assumption of having articulated and implemented a process for measuring day-to-day organizational performance and achievement of outcomes.

Discussion of Research Question 5

The fifth and last research question, “Given a specific strategy typology, what is the relationship between IT alignment maturity and performance outcomes?” was
addressed by a series of PLS-PM assessments run with IT/mission alignment maturity and performance outcomes serving as latent variables and each of the four strategy typologies serving in turn as a constant in the model. An examination of the path coefficients, $R^2$ statistics and the weights of manifest variables demonstrated in the relationship between IT/mission alignment maturity and organizational performance for each one of the strategy types illuminates noteworthy findings. This comparison can be found in Table 19 on page 211. First, the path coefficients for each of the strategy typologies are quite different, ranging from .454 to .547 with each indicating substantial (11 to 24%) contribution to the variance of their respective model iterations.

Second, a comparison of the two manifest variables contributing the greatest weight to the IT/mission alignment maturity latent variable across all four strategy types indicates that for each strategy type, specific variables have the greatest influence on organizational performance. For example, the weightiest manifest variables for the Defender typology, which has the strongest path coefficient between IT/mission alignment maturity and organizational performance (.547), are Infrastructure Scope and Architecture (.284) and Organizational Culture (.266) and the weights of the rest of the manifest variables for Defender are close behind, ranging from .189 to .238, illustrating that the Defender typology attends relatively equally to all of the IT/mission alignment factors. In comparison, the Reactor typology has the lowest path coefficient (.454), and while its two highest weights, on Organizational Culture (.522) and Partnership and Collaboration (.428), are the highest weights demonstrated on any manifest variables, they are weighted at the expense, so to speak, of the other IT/mission alignment factors, which range from -.002 to .389, far below the weights of the two most highly weighted
variables. Further, a comparison of strength of the path coefficients with the range of weights of the IT/mission alignment maturity manifest variables for each strategy type finds a direct inverse relationship -- the stronger the path, the narrower the range. This pattern suggests that some types of organizations balance their focus and effort between all aspects of IT/mission alignment maturity, while others focus on just a few. Those who have a balanced focus experience a stronger relationship between their IT/mission alignment maturity efforts and their organizational performance. While this is an exploratory investigation, this finding provides encouragement to continue working on distilling the understanding of this pattern. Considering Hypothesis 5, “For each of the four distinct strategy typologies, Prospector, Analyzer, Defender, and Reactor, there is a significantly different relationship between IT alignment maturity and performance outcomes” the hypothesis is supported by the data.

Conclusions

The conclusions that emerged through this investigation focus on three things that matter: balance, intention and relationships. First, balance matters. This investigation began by identifying and describing a challenge that many nonprofits face – balancing the important work they do with efforts to incorporate technology in ways that truly add value to that work. The SIMO model reinforces the idea that balance, particularly the ways in which nonprofits balance their efforts to improve communication, measure competence and value, govern, create and maintain partnerships, establish an appropriate scope of technology, build and maintain technology skills, and create a culture that
welcomes the value of technology, is something that can be achieved. The influence of the seven individual it/mission alignment criteria factors on the SIMO model, particularly how they impact the path coefficients between it/mission alignment and organizational performance, demonstrate that when organizations focus on increasing their maturity in each one of the criteria, their overall alignment will increase and, tentatively, their organizational performance will increase. It was found that Defenders tend to achieve this balance best, followed by Prospectors, Analyzers, then Reactors. Accordingly, the SIMO model suggests to NPOs that considering, and possibly modifying, their strategy typology is important; and using specific alignment practices to integrate technology into that strategy is important to maximizing organizational performance. Finding the time and resources to engage in this strategic planning is another area of balance illuminated by the investigation.

“Slow is fast, and fast is slow.” This adage, shared by my mentor and worldwide leadership consultant Guy Harris, guided my work as a nonprofit executive when I found myself overwhelmed with the day-to-day demands of maintaining an organization. He posits that if organizational leaders find the time to create a strategic plan to guide work and decisions, a plan that begins with a mission and vision, incorporates goals, timelines, and a clear process for evaluating performance, they can avoid operating in a reactive, fire-fighting mode that often results in disorganization, lack of productivity, and cleaning up messes made due to lack of foresight, while proceeding with work that is coordinated and aligned with the mission. The IT/mission alignment maturity factors echo the value of planning, specifically considering how technology can be coordinated and aligned with an organization’s mission. Planning, however, takes time. Nonprofit organizations,
particularly small ones, do not have the luxury of ample staff or discretionary time to
dedicate to planning. This lack of time was apparent in just the difficulty organizations
had in completing the SIMO survey according to phone calls and e-mails received in
response to the invitation to participate (which also reinforces the assertion made by
Salipante and Aram (2003) that NPOs tend to not invest time and talent in building and
testing theory, rather they focus on solving problems for those they serve). This
investigation clearly illuminates the need to help nonprofits find ways to balance their
time, their most valuable resource.

The issue of balance also emerged as consideration was made of the relationships
between the SIMO model and external organizational variables of size, number of staff,
level of expertise, and Internet access that illustrated the persistence of the nonprofit
digital divide. Logically, larger organizations with bigger budgets have more and more
sophisticated technology, larger numbers of employees, and the ability to invest in highly
skilled staff. Even with ‘free’ social media, cloud-based apps, donated hardware and
software and a goldmine of online learning resources, a sample of which was shared with
survey respondents in their Custom Technology Report, the nonprofit digital divide will
continue to exist for nonprofits who cannot afford to employ dedicated technology staff
or engage enough workers so that a bit of decision-makers’ time can be freed up for
strategic technology planning and the schedules of managers and direct-service staff
include ample time for technology training, collaboration and innovation. Balance in this
respect must be considered by the external stakeholders who support the work of
nonprofits – how can funders, networks, and communities balance their support for these
needs while still contributing directly to maximizing social values? Technology/mission
alignment answers this question by providing guidance to nonprofits in how to integrate these needs as priorities into their mission-focused strategic plans, capacity-building efforts and related funding requests, which will educate funders on the critical nature of these needs.

Second, intentions matter. Nonprofit organizations do the work that they do because of their mission – their intention to maximize social values. In order to use technology to maximize action toward an organization’s mission, the organization has to approach technology with the intention to use it to maximize social values and assess whether it has, in fact, achieved what it set out to do. Based on the different levels of influence IT/mission alignment maturity had on organizational performance variables, it appears as though NPOs intend to adopt and use technology in ways that align with their day-to-day performance goals, and to a much lesser extent, to mission-focused outcomes. This may not, in fact, be the case. Instead, as was suggested by Carman (2009), LeRoux and Wright (2010), Morley et al. (2001) and the W.K. Kellogg Foundation (2004), it is easier and faster to measure organizational structure performance than it is to measure outcomes, so unless nonprofits are forced to measure outcomes as a requirement of external funding, they probably don’t measure them, but they may still strive to achieve them. If, however, NPOs wish to go beyond determining whether their day-to-day work is efficient, cost-effective, of sufficient quality and quantity and satisfactory to stakeholders to answer the question, “Are we making a difference in the lives and communities we serve” and determine whether technology is helping make that difference, they must operate with the intention of measuring that difference. This
intention is should essentially mirror that of the business sector, which measures the outcomes it intends to achieve -- ROI, shareholder value, and profit. While the metrics used to measure outcomes in the nonprofit sector are different from those in the for-profit sector, the intention, to maximize the intended value for constituents, must be the same if nonprofits wish to truly make an impact.

Third, relationships matter. This investigation began by considering technology, what it could do for nonprofits in terms of helping them meet their mission, but it became a study of relationships among variables that are dependent upon relationships among people. Strategy is not something that happens in a vacuum, rather it requires entire organizations working together to determine the best way to do things. Likewise, IT/mission alignment is not something that one person, the “tech guy/gal”, can do, although having a champion to spearhead the effort facilitates the process is a finding that was reinforced by this investigation. A champion who is supportive and willing to begin the IT/mission alignment conversation must be met by an organization that is willing to host the conversation and put words into action. IT/mission alignment practices that lead to higher levels of maturity provide guidance in how to become such an organization.

Limitations and Delimitations

Limitations

The most substantial limitation to this investigation lies in the data, or more accurately, lack of complete data. The missing values analysis illuminated several issues, one related to the character of the target population – very busy people, many who are
volunteers, who do not have 45 minutes to spare to take a survey – as well as several related to the design of the study, all of which impacted the number of respondents who completed the survey. While the response rate for what ended up being essentially a cold-call invitation was comparable to other surveys was acceptable (14.3%), the completion rate was dismal, as only 2% of surveys returned were fully completed.

Design issues kept this investigation from achieving its full potential, although the best of intentions framed the methodology. The first was creating a comprehensive survey that would have practical value. The survey proved to be too long and resulted in response fatigue and a high level of missing data. The second was the desire to maintain the wording and structure of as many SAMM survey items as possible with the hope that established validity and reliability would be maintained. Even with adaptations, several items were foreign to respondents, which led to increased nonresponse bias. The third was having confidence that gatekeepers would assist with promotion of the investigation because it would add value to the work of their local nonprofits. It was discovered that promotion of outside projects is beyond the scope of Community Foundations’ relationship with grantees, and some felt it was a higher priority to protect their grantees from outside projects that would take them away from focusing on their mission. The fourth was having confidence that the instructions on the survey would facilitate the process of getting it routed to the most appropriate person. In many cases, the first person who saw it took it, or they threw it away. Less than half of respondents were the person most responsible for making decisions about technology, and many who took the survey did not have the knowledge necessary to complete all the items. These design items led to a low response rate and a very low completion rate.
Once the survey data was received, and the missing data issue was discovered, a primary concern was whether the data would be usable. Strategies were identified that would allow it to be used, but the missing data concern persisted throughout the investigation. A primary concern was whether the missing data solution would return appropriate results. This was compounded by a lack of formal tests of significance for PLS-PM (Vinzi, Trinchera & Amato, 2010, p. 56). Bootstrapping, or running generated data through the model 100 or more times, then comparing the bootstrap estimate to the Goodness of Fit statistic, as well as running the PLSPM again with bootstrapping once the model is established and assessing the degree of multicollinearity among essential indicators were recommended in the literature as primary means to assess significance (Addinsoft, 2013, Howell, 2006, Tenenhaus, Vinzi, Chatelin & Lauro, 2005). Little, if anything was discussed about t-tests or finding p values to assess significance. The bootstrap estimates for this investigation were very close to the Goodness of Fit statistic, thus establishing significance. However, it seems questionable to attempt to establish significance or power of a model that has imputed data as its foundation, as SIMO does. If the data were complete, or, at minimum, 80% complete, bootstrapping would be an appropriate test of significance.

Delimitations

The SIMO model is the first of its kind to be presented to the nonprofit sector. It is exploratory in nature, therefore test statistics, where available, permit a wider acceptable range than if it were a confirmatory or predictive model. Its strengths at present include the fact that its first test was done with a random sample from across the
state of Indiana. The missing data problem, while still a problem, was able to be addressed through missing values analysis and multiple imputation of data, thus providing a data set that could test the model. Finally, as an exploratory model, it has brought forth valuable insight to inform future research.

Implications for Theory and Practice

This study makes several contributions to the existing literature, as well as suggests practical implications for the field. First the SIMO model provides theoretical support for the rudimentary nonprofit technology/mission alignment models that have been presented by practitioners (Heye, 2009, Microsoft Corporation, 2010, NPower, 2011) who were the first to adapt the business sector concept of IT alignment (Luftman, 2000; Sledgianowski, 2004; Sledgianowski et al., 2006) to the nonprofit sector. The SIMO model facilitates sector-specific theory building by proposing a model of the relationships among strategy typology, IT/mission alignment maturity and organizational performance that accounts for the unique character of nonprofit organizations.

Second, the primary challenge in translating the IT alignment concept to the nonprofit sector has been the paucity of metrics that can consistently measure and compare performance across the wide array of activities, outputs and outcomes produced by nonprofit organizations (Ebrahim and Rangin, 2010; Heye, 2009). The SIMO model presents a set of metrics based on the structure of a logic model (McLaughlin& Jordan, 2010; Wholey, 1979) that measures the extent of performance in each element of the
logic model in terms of standardized percentages on an interval scale. This process results in performance data that can be compared across all types of nonprofit organizations.

Third, the SIMO model reinforces the applicability of Miles and Snow’s (1978) strategy typology model outside of the business sector and presents a new iteration of the self-typing paragraph for use in the nonprofit sector. The self-typing paragraph had been used in isolation in the banking industry (James & Hatton, 1995) and it was modified for use in the nonprofit sector, where Brown & Iverson (2004) reported that their iteration could use modification in order to find better fit within the nonprofit sector. The strategy typology model, operationalized as a combination of self-typing paragraph and strategy behavior scales, was combined by Croteau and Bergeron (2001) with a set of technology deployment scales to measure the relationships between strategy typology and technology and their influence on organizational performance in the business sector. For this investigation, Croteau and Bergeron’s combined approach was used, but only a modified self-typing paragraph was used as the sole measure of strategy typology. Considerations for future research using Miles and Snow’s strategy typology model are suggested below.

Fourth, this investigation illuminates the need for the sector to continue encouraging a shift in the focus of nonprofit performance measurement from measuring outputs to determining the extent to which organizations are maximizing the social values targeted by their missions and the extent to which their work is contributing to sustained changes in the individuals and communities they serve. The SIMO model was able to identify a relationship between IT/mission alignment maturity and organizational performance, but for 45% of respondents, performance measurement stopped at outputs. The literature chronicles the persistence of this challenge over the past several decades, a
challenge which MacIndoe and Barman (2013) attribute to the influence of stakeholders on the practice of outcome measurement. In their investigation, they were able to find a sample in which 71% of the organizations (n=279) report use of outcome measurement, which is the highest percentage this investigator has seen to date. The model in which they characterize implementation of outcome measurement should be considered in future investigation of this practice in NPOs.

Fifth, the outcomes of the methodological approach to sampling and data collection used in this investigation warrant special discussion. When working in the nonprofit sector, careful consideration must be made of the existing relationships during the research design and implementation process. The relationship between grantor and grantee is a sensitive one. Unwritten, yet clearly understood boundaries exist around the requests grantors make of grantees. In this particular study, several Community Foundations, as well as the Lilly Endowment, were not willing to endorse the study or invite their grantees to participate because they did not want the grantees to a) feel obligated to do so just because a funder asked them to and b) take time away from the work they had committed to do through the grant agreement they had with the Foundation(s). The perspective of an investigator, of wanting to create new knowledge and help the field, may be valued by the agencies being asked to be participate, but it may not be as high of a priority as the perspectives, agreements and relationships they are committed to preserving in the long term. Stephen Covey’s Fifth Habit of Highly Effective People, “Seek first to understand, then to be understood” (1989, p. 236) is a succinct guide for anyone pursuing field research in the nonprofit sector.
For practitioners, the study also has practical implications. First, a new theoretical model now supports the practice of technology/mission alignment, and practitioners played a significant role in creating and testing the model. When invited to participate, organizational representatives who did feel they had the time were excited to learn more about how to align technology with their mission and looked forward to receiving the report of their results. Nonprofit practitioners invest time in activities that are immediately useful, a sentiment that was shared earlier. While the theory behind the model may not be of value in day-to-day work in communities, the establishment of the SIMO model is a first step in creating a useful model practitioners can use to assess their strategy typology and IT/mission alignment, then learn how to make changes in those two organizational elements in order to change their level of organizational performance. Future work in this area will focus on refining the instrument and data collection methodologies so that a strong data set can be used to validate the model before it is translated into a practitioner tool.

Second, within the model and within nonprofit organizations, strategy typology is a big deal. Clear differences were found between the IT/mission alignment patterns of each of the typologies, and clear differences were found among the path coefficients between IT/mission alignment and organizational performance. If a nonprofit organization knows its strategy typology and finds that the strategy doesn’t seem to be “working” in terms of performance, merely knowing that other strategy typologies exist is an insight that can be used to inform organizational learning and change.

Third, if an organization wants to increase its IT/mission alignment maturity, its first step is to find a champion. If a champion exists, the organization’s charge is to make
sure the champion is heard and supported, and that the team she enlists to assist is provided with the time and resources necessary to plan, lead, and measure the results of the initiative. As the initiative rolls out, the organization is obligated to make sure everyone is ‘in the loop’ and provided with the opportunity to learn and use the skills necessary to help the process succeed. As IT/mission alignment proceeds, the organization must remember that alignment is an iterative process that has the potential to continually improve the performance of the organization.

Fourth, nonprofit board members, who we re identified in the SIMO model as having influence on competency and value measurement, may be the spark to light the outcome evaluation flame in organizations. MacIndoe and Barman (2013) suggest that internal actors control the allocation of resources for outcome measurement. If internal actors feel it is a priority, they will find a means to support it. Accordingly, while nonprofit executive directors may already understand the critical nature of outcome measurement, they often do not have the budget discretion to allocate resources toward its implementation, whereas their boards may not be as savvy, but if they understood the process of getting to outcomes, they could make it a priority. Therefore educating boards on the process of getting to outcomes may help organizations actually get there.

Fifth, while optimism pervades the above discussion of the potential of the SIMO model to help organizations align technology in ways that will help them meet their mission, the study also shows us that the digital divide persists in the nonprofit sector, even with the tremendous strides that have been made in making technology tools and infrastructure widely available. Considering the factors contained in the IT/mission alignment maturity portion of the SIMO model, nonprofits do have the opportunity to
reduce this divide, even if they aren’t the biggest organization on the block. The sector has a plethora of avenues through which to pursue low- and no-cost technology tools, training and solutions, but, again, simply installing apps and using the cloud will not close the chasm -- the missing resource is time. The primary way nonprofits can acquire this resource is by maximizing the other resources they have through balanced IT/mission alignment maturity practices. Technology/mission alignment is not an overnight achievement. It is a strategic, long-term process that can help improve organizational performance. When considering technology, a paradigm shift can help organizations improve the outcomes of their important work: More is not better, rather, mission-focused is better.

Finally, while the academic contingent of the nonprofit field cannot create time for its constituents, it can continue to provide guidance in how to maximize time by encouraging organizations, particularly boards and executives, to periodically step out of fire-fighting mode and into planning mode. As service to communities, academics might consider how they can collaborate with nonprofit organizations or consortia, such as groups of community foundation or United Way grantees, to increase their understanding of the planning process and help them build their strategic planning capacity. This can empower NPOs to contemplate the social values they endeavor to maximize, conceptualize how technology can be incorporated into their efforts, equip staff and volunteers with appropriate levels of technology expertise, and integrate outcome evaluation into their performance measurement process.
Recommendations for Future Research

The SIMO investigation also suggests several avenues of future research, both to strengthen the model and investigate issues related to its constructs. In order to strengthen the reliability and validity of the SIMO survey, effort needs to be invested in further refining the IT/mission alignment maturity survey items so that the variables will load more distinctly on the 7 factors. While Goodness of Fit (GoF) is often cited as sole support for theoretical models, and a high level of GoF was established between the data and the SIMO model, in this case, nonresponse, particularly ‘don’t know’ responses and attrition, provided evidence that the questionnaire needs further refinement and testing. The correlations identified between all of the IT/mission alignment factors are a concern, particularly because the same correlations were not evident in the principal component analysis, which indicated the use of orthographic rotation.

Future use of the SIMO survey should only take place after each of the individual items is examined in light of the present data, revised if necessary, piloted, subjected to a variety of validity tests and both principal component analysis and confirmatory factor analysis, then re-piloted with a wider variety of nonprofit organizations, all of which are recommendations made by Ritchie and Sherlock (2009) in their guidance on adapting surveys to the nonprofit sector. This refining process is critical to increasing the structure and definition of the model so that when it is ready for practical use, it truly is useful in separating the effects of the different factors so that practitioners can address them according to their priorities.
Also related to methodology, cross-sectional survey research is a common approach to gathering information about IT/mission alignment and strategy typology. Certainly replicating well-documented methodologies is sound practice, but survey methodology, particularly the use of online surveys, appears to have become a go-to strategy for collecting information in the nonprofit sector, as well as in the rest of the world. “Survey overload” is a common occurrence, reflected in hits in a recent Google keyword search. In a recent, informal poll of a half-dozen people in the room, individuals reported receiving up to 30 survey requests from academicians, practitioners and marketers in one week. If each survey took 5 minutes, over two hours would be required to fulfill 30 requests. If SIMO would have been one of the surveys, three hours would be required to ‘help the field’, almost 10% of the work week, which, for a passionate nonprofit leader is an unconscionable amount of time to spend away from their important work. This investigation is guilty of adding to the overload, which was clearly reflected in the results of the survey. It just didn’t get done in most cases.

The approach my informal poll participants choose to take in response to survey requests is to complete one or two quick surveys so they can feel good about contributing to the field, then they delete or ignore the rest. Or, with the best of intentions they start a survey or several and get pulled away, never to complete them. Even if the purpose of the survey is compelling and can help them add value to their work, they just don’t have time to do them all. These may be very common responses to surveys, which would contribute substantially to the ongoing methodological challenge of achieving sufficient response and completion rates.
Survey overload does not appear to have been addressed at any length in the nonprofit literature to date, as evidenced by only 7 mentions in the past 10 years in a leading academic journal and five hits in a university academic search engine, but it is an issue that scholars must contend with as they consider data collection strategies. Alternatives to ‘sending out a survey’ to a broad target population may include collaborating with agencies that may already possess similar data, hosting focus groups in conjunction with nonprofit events or, if a survey is necessary, distilling the target audience or pursuing alternate data collection venues such as during break times at practitioner conferences, away from already-full email boxes. Each data-collection scenario is unique. We must work, above all, to respect the time and obligations of our target populations, then determine the best way to gather the most complete, reliable and valid data we can. I challenge the field to help find the balance between survey overload and the methodological rigor necessary to bring new knowledge to the field. An example of an alternative approach is shared below.

The missing values analysis highlighted several items that had high nonresponse rates, which is where refining should start. It was made clear by respondents that the survey itself was too long. Perhaps a better approach to achieving a complete data set would be to personally invite organizations randomly selected from the grantee lists to complete the survey, either by phone or face-to-face, and deliver the survey in phases, possibly once per month, to reduce the one-time cost of participation, which is a strategy Croteau and Bergeron (2001) used to garner complete responses. If the survey length is maintained, then it is critical to increase efforts to provide incentives for completion as suggested by Dillman et al. (2009). This would enable the investigator to monitor
completion and follow up with individuals with whom working relationships would already be established. The relationships, plus the shorter sections would be more apt to fit into a nonprofit executive’s busy schedule. The resource constraints of a personal approach would limit the number of participants, which would limit generalizability of the findings and render PCA and PLS-PM inappropriate due to small sampling size. Splitting the survey delivery into three components would also insert the possibility of attrition, which could lead to missing data. However, advantages to pursuing this alternate approach in future research would include increasing the likelihood of response and increasing the likelihood of relationships built and preserved between the investigator and participating nonprofits. The challenge of enlisting gatekeepers in the process is one that could be addressed, also, to generate authoritative support for the investigative effort. This particular recommendation leads to consideration of how the exploration of SIMO and its components can continue in the future.

The primary relationship identified in this investigation relates to the influence of strategy typology on the relationship between IT/mission alignment maturity and organizational performance. This relationship raises a number of questions that can guide future investigations, such as how do nonprofit organizations choose their strategy? Is there a way that choosing and using an effective strategy typology could be facilitated by gatekeepers, namely Community Foundations who provide and support a variety of training and technical assistance to their grantees. Is this already being done, and is it helping NPOs achieve their mission? Strategy typology has not been widely investigated in the nonprofit sector; however it may have substantial value to the field in both its simplicity and its influence on performance. Accordingly further study is recommended.
The background of the strategy typology model was discussed above to preface a caveat for future investigations: while the self-typing paragraph was found to cleanly isolate the mean IT/mission alignment maturity level of each of the strategy typologies in correspondence analysis, as a single variable it was rendered unusable as a latent variable in partial least squares path modeling. Future investigations can find greater utility in using the model if the measurement methodology incorporates more than one measure of strategy typology.

The last and most pervasive area for future research is the area of outcome measurement. This recommendation has likely been made hundreds, if not thousands of times in the nonprofit literature, judging from the sustained lack of outcome measurement that has been reported over nearly half a century. The SIMO model presents a new set of metrics to measure organizational performance, one which directs scholars and practitioners to measure extent of organizational structure performance (stakeholder engagement, capacity, activities, and outputs) and extent of outcome achievement. It is possible that breaking performance measurement down in this way and emphasizing the fact that measuring organizational structure performance is only part of the job can encourage organizations to measure both sets of elements. Further research using this set of metrics is encouraged with consideration of MacIndoe and Barman’s (2013) Multidimensional Measure of Outcome Measurement Implementation, which informs scholars of the influence of internal and external stakeholders on the decisions an organization makes relative to whether or not to measure outcomes.
Summary

Solutions for a small planet. – IBM

The power to be your best. – Apple Computer

Connect and share with the people in your life - Facebook

Broadcast yourself. – YouTube

Be what’s next. – Microsoft

Imagine it. Done. – Unisys

(Tagline Guru, 2011)

Revisiting these taglines after building, testing, analyzing and reflecting on the SIMO model reinforces the importance of helping the nonprofit sector find the most effective ways to maximize the potential of technology to help them do their good work and achieve their social missions. The SIMO model is an emerging tool that can help NPOs identify the most appropriate strategy typology to facilitate IT/mission alignment maturity so that the people in organizations can work together with technology to achieve their missions. It has provided preliminary answers to the question, how do NPOs adopt and use technology in ways that make a measurable difference in their achievement of outcomes? The answers begin with balance, intention, and relationships.


Knowledge Transfer (2011). *Service Level Agreement (SLA) (ITILv3)*. Retrieved from Knowledge Transfer Website:

http://www.knowledgetransfer.net/dictionary/ITIL/en/Service_Level_Agreement.htm


Microsoft (2010). *Demystifying IT adoption and innovation in the nonprofit sector.*
Retrieved from Microsoft Corporate Citizenship Tools website:


http://ctb.ku.edu/en/tablecontents/sub_section_main_1877.aspx


rchfm. (2011, November 21). *The amazing adventure of anna cent & carrie osity: How the big tobacco companies advertise to youth* [Video file]. Retrieved from https://www.youtube.com/watch?v=eu1K7qzoDi0.


http://www.cps.usfca.edu/inom/INOM_Tech_Use_Small_NPOs.pdf


APPENDIX A

Variables of Interest in the Present Study
<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Adaptation or Addition Rationale</th>
<th>Variable Code</th>
<th>Measurement Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff size and distribution</td>
<td>To test NTEN survey findings in a more heterogeneous sample</td>
<td>ORG01 Q1</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Dedicated technology staff</td>
<td>To test NTEN survey findings in a more heterogeneous sample, identify relationship to IT alignment &amp; performance</td>
<td>ORG02 Q2</td>
<td>Nominal</td>
</tr>
<tr>
<td>Reporting relationship of technology staff</td>
<td>Similar to SAMM (Luftman, 2011) with positions derived from typical NPO organizational positions.</td>
<td>ORG03 Q3</td>
<td>Nominal</td>
</tr>
<tr>
<td>Organization Mission Statement</td>
<td>To test “If an organization’s mission or goals do not address technology or innovation” to corroborate findings of Clerkin &amp; Gronbjerg, 2007; Fitch, 2007; Nunn, 2007; Silverman &amp; Rafter, 2007. Proposal p. 17.</td>
<td>ORG04 Q4</td>
<td>Open-ended</td>
</tr>
<tr>
<td>Organization Target Population</td>
<td>To provide richness to profiles, expand Trusty’s (in press) findings regarding rural NPOs, Proposal p. 15.</td>
<td>ORG05 Q5</td>
<td>Open-ended</td>
</tr>
<tr>
<td>County</td>
<td>expand Trusty’s (in press) findings regarding rural NPOs, Proposal p. 15.</td>
<td>ORG06 Q6</td>
<td>Nominal</td>
</tr>
<tr>
<td>Annual Income</td>
<td>Mirrors SAMM, scale derived from adapted categories of NTEN survey (Baruch &amp; Ramalho, 2010) and Guidestar database (Guidestar, 2011).</td>
<td>ORG07 Q7</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Percentage of budget used for technology</td>
<td>Mirrors SAMM</td>
<td>ORG08 Q8</td>
<td>Interval</td>
</tr>
<tr>
<td>Internet Access</td>
<td>Considers a potential barrier to technology use, although 90% or more of Indiana’s geography is claimed to have Internet access (Indiana Geographic Information Office, 2013)</td>
<td>ORG09 Q9</td>
<td>Nominal</td>
</tr>
<tr>
<td>Strategy Typology</td>
<td>Reworked to reflect nonprofit character, triangulated descriptions with definitions of each typology in Chan &amp; Sabherwal (2001) and Shortell &amp; Zajac (1990).</td>
<td>STRAT01 Q10</td>
<td>Nominal</td>
</tr>
</tbody>
</table>

**Alignment Factors**

<table>
<thead>
<tr>
<th>Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT’s understanding of organization</td>
</tr>
<tr>
<td>Area</td>
</tr>
<tr>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>NPO respondents</td>
</tr>
<tr>
<td>CEO’s understanding of IT</td>
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<tr>
<td>Board’s understanding of IT</td>
</tr>
<tr>
<td>Organizational learning</td>
</tr>
<tr>
<td>Style and ease of access</td>
</tr>
<tr>
<td>Shared domain knowledge</td>
</tr>
<tr>
<td>Use of liaisons</td>
</tr>
<tr>
<td>Competency &amp; Value Measure</td>
</tr>
<tr>
<td>IT metrics</td>
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<tr>
<td>IT measurement processes</td>
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<tr>
<td>Organizational Metrics</td>
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<tr>
<td>Integrated IT and Organizational Metrics</td>
</tr>
<tr>
<td>Service level agreements</td>
</tr>
</tbody>
</table>

280
<table>
<thead>
<tr>
<th>Question</th>
<th>Change Description</th>
<th>Question Number</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference to functional organizations and replaced it with “specific programs”, changed enterprise to “organization”, changed partners/alliances to collaborating organizations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benchmarks</td>
<td>Defined “benchmarking” per Chinmann, Inn &amp; Wandersman, 2004, p. 132.</td>
<td>COMP06 Q23</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Formal assessment of IT investments</td>
<td>Removed reference to business, changed IT to “technology”</td>
<td>COMP07 Q24</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Continuous improvement practices</td>
<td>Changed IT-business to “technology/organization”</td>
<td>COMP08 Q25</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Contribution of IT to organization goals</td>
<td>Changed IT function to “technology”</td>
<td>COMP09 Q26</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Governance</td>
<td>Organization of technology</td>
<td>GOV01 Q27</td>
<td>Ordinal</td>
</tr>
<tr>
<td></td>
<td>Moved from introductory question section – not sure why it is listed there in the SAMM instrument, as it is listed in “Governance” section in the model literature (Luftman, 2003). Definitions provided to facilitate understanding by non-IT savvy staff (Dwivedi, n.d., colleague of Luftman, SAMM author)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formal organizational strategic planning</td>
<td>GOV02 Q28</td>
<td>Ordinal</td>
</tr>
<tr>
<td></td>
<td>Removed reference to business, changed IT to “technology”, changed functional unit to “program”, changed partners/alliances to collaborating partner organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formal IT strategic planning</td>
<td>GOV03 Q29</td>
<td>Ordinal</td>
</tr>
<tr>
<td></td>
<td>Removed section of question that is irrelevant (seems to be an error in construction in the original instrument), changed IT to technology, removed reference to business, changed to “whole-organization” changed functional unit to “program”, changed partners/alliances to collaborating partner organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Budgetary Control</td>
<td>GOV04 Q30</td>
<td>Ordinal</td>
</tr>
<tr>
<td></td>
<td>Changed functional organization to “program”, changed IT to “technology”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investment decisions</td>
<td>GOV05 Q31</td>
<td>Ordinal</td>
</tr>
<tr>
<td></td>
<td>Changed business to “organizational”, changed IT to “technology” included “mission-achievement”,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior-level IT steering committee</td>
<td>Removed reference to business, changed partner to external collaborative partner organizations and clients.</td>
<td>GOV06 Q32</td>
<td>Ordinal</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>How projects are prioritized</td>
<td>Removed reference to business, changed “function” to lead manager(s), changed IT to “technology”, changed business function to “organizational leadership”, changed business partners/alliances to “collaborative partner organizations”</td>
<td>GOV07 Q33</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Internal stakeholders (volunteers, clients)</td>
<td>NEW, supports character of NPO variety of internal stakeholders (Cambell, McDonald, and Sethibe, 2009; Zhang, Guiterrez, and Mathieson, 2010) Proposal p. 38.</td>
<td>GOV08 Q34</td>
<td>Ordinal</td>
</tr>
<tr>
<td>External stakeholders (funders, regulatory agencies)</td>
<td>NEW, supports character of NPO variety of internal stakeholders (Cambell, McDonald, and Sethibe, 2009; Zhang, Guiterrez, and Mathieson, 2010) Proposal p. 38.</td>
<td>GOV09 Q35</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Partnership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization’s perception of IT</td>
<td>Changed business to “organization”; IT is changed to “Investment in technology personnel and services”, added “including” and “important” to partner</td>
<td>PART01 Q36</td>
<td>Ordinal</td>
</tr>
<tr>
<td>IT’s role in strategic planning</td>
<td>Changed IT to “technology, changed business to “organizational”, “organizational staff”</td>
<td>PART02 Q37</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Shared risks and rewards</td>
<td>“recognition” and “benefit” are added to reflect non-financial incentives for risk taking, innovation often found in nonprofits</td>
<td>PART03 Q38</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Managing the IT/Org. relationship</td>
<td>Changed business to “organization” and “other staff”</td>
<td>PART04 Q39</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Sponsors or champions for IT</td>
<td>Removed reference to business, changed business to “organizational leader”, changed functional unit to “program level”</td>
<td>PART05 Q40</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Collaboration within and across organizations</td>
<td>NEW to assess impact of collaboration on alignment as suggested by Clerkin and</td>
<td>PART06 Q41</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Scope and Architecture</td>
<td></td>
<td></td>
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<tr>
<td>------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Scope of technology systems</strong></td>
<td>Removed reference to business, changed to “administrative” and “organizational”.</td>
<td>SCOP01 Q42</td>
<td></td>
</tr>
<tr>
<td><strong>Standards, policies &amp; procedures</strong></td>
<td>Removed reference to business, changed functional units to “programs and departments”, changed business partners to “strategic, collaborative partner organizations/alignances”.</td>
<td>SCOP02 Q43</td>
<td></td>
</tr>
<tr>
<td><strong>Architectural integration</strong></td>
<td>Architectural integration defined, changed functional units to “departments and programs”, changed business partners to “collaborative partner organizations/alignances”.</td>
<td>SCOP03 Q44</td>
<td></td>
</tr>
<tr>
<td><strong>Architecture flexibility</strong></td>
<td>Changed business to “organization”</td>
<td>SCOP04 Q45</td>
<td></td>
</tr>
<tr>
<td><strong>Scope of internal systems</strong></td>
<td>NEW, purpose to assess sophistication and scope of existing IT for descriptive comparison purposes</td>
<td>SCOP05 Q46</td>
<td></td>
</tr>
<tr>
<td><strong>Scope of external systems</strong></td>
<td>NEW, purpose to assess sophistication and scope of existing IT for descriptive comparison purposes</td>
<td>SCOP06 Q47</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Human Resources and Skills</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership tacit knowledge of IT</strong></td>
<td>Leadership’s tacit knowledge of technology (Bassellier, Benbasat &amp; Reich 2003)</td>
<td>SKIL.01 Q48</td>
</tr>
<tr>
<td><strong>Leadership explicit knowledge of IT</strong></td>
<td>Leadership’s explicit knowledge of technology (Bassellier, Benbasat &amp; Reich 2003)</td>
<td>SKIL.02 Q49</td>
</tr>
<tr>
<td><strong>Staff tacit knowledge of IT</strong></td>
<td>Leadership’s tacit knowledge of technology (Bassellier, Benbasat &amp; Reich 2003)</td>
<td>SKIL.03 Q50</td>
</tr>
<tr>
<td><strong>Staff explicit knowledge of IT</strong></td>
<td>Leadership’s explicit knowledge of technology (Bassellier, Benbasat &amp; Reich 2003)</td>
<td>SKIL.04 Q51</td>
</tr>
<tr>
<td><strong>Learning opportunities for staff</strong></td>
<td>New item – included because there was a question about cross-function education, but not on-boarding training.</td>
<td>SKIL.05 Q52</td>
</tr>
<tr>
<td><strong>Cross-function education, training</strong></td>
<td>Removed reference to business, changed functional unit to “program or department”, added “build technology skills”, customer service changed to “direct service”, added “workshops”</td>
<td>SKIL.06 Q53</td>
</tr>
<tr>
<td>Skill</td>
<td>Original Description</td>
<td>Revised Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Career crossover opportunities</td>
<td>Removed reference to business, added “volunteers”, “job sharing”, changed functional unit to “program or department”</td>
<td>SKIL07 Q54 Ordinal</td>
</tr>
<tr>
<td>Attract and retain top talent</td>
<td>Changed business to a balance of technical/programmatic, and/or clinical skills.</td>
<td>SKIL08 Q55 Ordinal</td>
</tr>
<tr>
<td>Training/skill level of volunteers</td>
<td>New, measures the skills of volunteers to test assumptions about technology roles being held by whoever’s available. Proposal p.</td>
<td>SKIL09 Q56 Ordinal</td>
</tr>
<tr>
<td>Culture (New criterion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovative, entrepreneurial culture</td>
<td>Moved from #36 skills, changed business to organization, changed functional unit to “program or department” changed partner to “collaborative partner organizations”</td>
<td>CULT01 Q57 Ordinal</td>
</tr>
<tr>
<td>External support for risk-taking</td>
<td>New, measures the extent to which risk taking is supported by external stakeholders Proposal p. 38</td>
<td>CULT02 Q58 Ordinal</td>
</tr>
<tr>
<td>Cultural locus of power</td>
<td>Moved from #36 in Skills changed business to organization, changed functional unit to “program or department” changed partner to “collaborative partner organizations”</td>
<td>CULT03 Q59 Ordinal</td>
</tr>
<tr>
<td>Interpersonal climate</td>
<td>Moved from #41 in Skills – changed business to organization, changed business and functional unit to “program or department” changed customers and partners to “stakeholders”</td>
<td>CULT04 Q60 Ordinal</td>
</tr>
<tr>
<td>Trust &amp; Value in relationships</td>
<td>Moved from #34 in Partnership Changed business to “organization”, trust levels delineated in Grinney (2010)</td>
<td>CULT05 Q61 Ordinal</td>
</tr>
<tr>
<td>Learning organization</td>
<td>New item. Levels of learning delineated by Cheal (2008, p.4)</td>
<td>CULT06 Q62 Ordinal</td>
</tr>
<tr>
<td>Change readiness</td>
<td>Moved from #38 in Skills, changed functional unit to “program/department” and changed program/department and corporate to “across the organization” at the highest level.</td>
<td>CULT07 Q63 Ordinal</td>
</tr>
<tr>
<td>Reactions to disruption</td>
<td>Moved from #34 in Infrastructure, changed business to “organizational”,</td>
<td>CULT08 Q64 Ordinal</td>
</tr>
</tbody>
</table>
changed merger/acquisition to “new partnerships”, changed functional unit to “program/department”, changed partner to “collaborative partner organizations”

Adaptability of IT
Moved from Governance ability of IT to respond to org needs#24 Changed IT to technology, removed reference to business
Ordinal

Adaptability of organization
NEW – complements CULT06 Addresses staff resistance to change Ch. 1 p.
Ordinal

Overall Perceived Alignment
Mirrors SAMM validation study (Sledgianowski et. al, 2006), combines their labels and Heye’s (2009) descriptions. Proposal p. 21
ALIGN1 Q67

Individual Demographic Section

<table>
<thead>
<tr>
<th>Position</th>
<th>For comparison purposes in the model</th>
<th>INDIV01 Q82</th>
<th>Open-ended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>For comparison purposes in the model</td>
<td>INDIV02 Q83</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Education</td>
<td>For comparison purposes in the model</td>
<td>INDIV03 Q84</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Level of technology expertise</td>
<td>For comparison purposes in the model</td>
<td>INDIV04 Q85</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Support of alignment</td>
<td>For comparison purposes in the model</td>
<td>INDIV05 Q86</td>
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<tr>
<td>Name and Email Address</td>
<td>To confirm where to send alignment assessment results</td>
<td>INDIV06 Q87</td>
<td>Nominal</td>
</tr>
</tbody>
</table>

Nonprofit IT Alignment Maturity Model: Dependent Variables of Interest

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Variable Code</th>
<th>Measurement Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome Type</td>
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<td></td>
</tr>
<tr>
<td>Stakeholder engagement level</td>
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<td>Ordinal</td>
</tr>
<tr>
<td>Stakeholder engagement influenced by technology</td>
<td>PM2 Q69</td>
<td>Ordinal</td>
</tr>
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<td>Capacity level</td>
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<tr>
<td>Capacity-building efforts influenced by technology</td>
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</tr>
<tr>
<td>Activity level</td>
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<td>Activity influenced by technology</td>
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<td>Output level</td>
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</tr>
<tr>
<td>Outputs influenced by technology</td>
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</tr>
<tr>
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<td>---------</td>
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<tr>
<td>Short-term outcome level</td>
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<tr>
<td>Short-term outcomes influenced by technology</td>
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<tr>
<td>Intermediate outcome level</td>
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<tr>
<td>Intermediate outcomes influenced by technology</td>
<td>OUT4 Q79</td>
<td>Ordinal</td>
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<tr>
<td>Long-term outcome level</td>
<td>OUT5 Q80</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Long-term outcomes influenced by technology</td>
<td>OUT6 Q81</td>
<td>Ordinal</td>
</tr>
</tbody>
</table>
APPENDIX B

Indiana Broadband Availability Map
This Broadband Availability Map shows where broadband service is available via a combination of wireline, wireless, and combined coverage across the state of Indiana. This map was created with data from the broadband service providers. The lighter areas do not currently have broadband service, comprising approximately 8% of the area of the state.

Note: By definition, the National Telecommunication and Information Administration considers a census block to have broadband service available if any part of it has service available.

Source: http://www.indianabroadbandmap.com/#!
**ABOUT THE SIMO SURVEY**

Thank you in advance for completing the Nonprofit Strategy, IT, Mission & Outcome (SIMO) Alignment Survey. You will be asked several types of questions about your organization and how technology fits within it.

For the purpose of this survey, *technology* is defined as electronic tools, applications, and strategies designed to accomplish information- and communication-related tasks. Technology is also sometimes referred to in organizations as information technology (IT). For our purposes, these terms are interchangeable.

It should take you about 45 minutes to do this 87-item survey. Completing the survey will help ALL nonprofits learn more about how they can best use technology to meet their missions and improve the important work they do. Your responses will be kept confidential.

**SURVEY INSTRUCTIONS**

Please check the bubbles and/or boxes next to multiple choice items contained on each page of the survey that best describe your organization. On items that require a written response, please print legibly.

If you are unsure how to answer a question, please feel free to respond "I don't know". If your organization does not do something that is asked about in a question, simply answer "Do not do". All nonprofits do things differently, and the questions are designed to identify those differences.

Once you complete the survey, please return it to the project director via U.S. Mail in the enclosed envelope.

It would be best to have the person responsible for your making decisions about your organization's use of technology complete this survey. If you are not this person, please ask the appropriate person to complete the survey and return it via U.S. Mail.

If you wish to complete the survey electronically, you may do so by accessing the Survey Monkey survey using the Survey Link code that is printed in the cover letter for this survey. Once you complete the survey, you may discard this paper copy of the survey.

If you have questions about this survey or the participation process, please contact Kelly Trusty, Project Director at kelly.a.trusty@wmich.edu, 260-243-0261.

Before beginning this survey, please be sure to have the following information available:
1) Your organization's annual income from your organization's most recent IRS 990 Form
2) Your organization's mission or purpose statement
3) Current data that you use to measure your organization's performance and accomplishments.

**INFORMED CONSENT**

The next two pages of this packet contain Informed Consent information. Please read them before beginning the survey.

*By completing this survey and returning it to the Project Director via U.S. Mail, you are agreeing that you are 18 years of age, you have read the informed consent document included in this packet in which the risks and benefits of participation have been explained to you, and you agree to take part in this study.*

Please turn the page to read Informed Consent information.
Informed Consent

Western Michigan University
School of Public Affairs & Administration
Informed Consent Document

Principal Investigator: Kelly Trusty

Title of Study: THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT
ORGANIZATIONAL OUTCOMES

You are invited to participate in a research project titled “THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION
ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES”. This consent document will explain the purpose of
this research project and will go over all of the time commitments, the procedures used in the study, and the risks and
benefits of participating in this research project.

In this study, we are trying to find out if there are relationships in nonprofit organizations (NPOs) between the strategic
and organizational factors that enable and inhibit IT alignment, which is the level at which an organization uses
technology strategies and tools in ways that helps it meet its mission and goals.

You may participate in this study if you are the person who has primary responsibility for making technology decisions in
your organization. You were selected to participate in this study because you are a grantee of one of 45 Indiana
Community Foundations randomly selected for inclusion in the study. If you are not the person in charge of technology
for your organization, please forward this e-mail invitation to the individual in your coalition who meets this criterion.

This study will involve completing an 87-item paper survey you received via U.S. Mail and sending it back to the Project
Director via U.S. Mail. It should take you about 45 minutes to complete the survey, which is all that is required to
participate in the study.

If you choose to participate in this study after reading this document, you should access the survey by simply turning to
the first page of survey questions and completing all of the questions in writing, using either pen or pencil. By completing
the survey and sending it back to the Project Director via U.S. Mail, you will signify that you have read and understood
this Informed Consent document.

This study will measure four types of things: the type of strategies that are typically used by your organization, the level
at which your organization demonstrates activities and strategies that lead to IT Alignment, the extent to which your
organization achieves performance outcomes, and professional information about you and your organization.

Because the survey questions will address your perceptions of your organization, you may feel uncomfortable that a
Community Foundation or other nonprofit stakeholders will read the survey results and view your perceptions negatively.
To alleviate this concern, all survey responses will be collected, stored and analyzed confidentially by the primary
investigator. No one other than the investigator, Survey Monkey, and the individual who takes the survey will have access
to identifiable information.

People who participate in this study will help nonprofit organizations understand what it means to align technology with
their mission, they will help nonprofit technical assistance groups provide better training and technical assistance, and
they will help their organizations maximize its planning and use of technology to meet its mission.

There are no costs associated with participating in this study. There is no monetary compensation for participating in this
study. When you do complete the survey, you will be provided with a Custom Technology Alignment Maturity Report and
Technology Strategy Guide that you can use to continue your efforts to align technology with your mission.

(INFORMED CONSENT INFORMATION CONTINUES ON NEXT PAGE)
Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

Informed Consent (cont.)

The principle investigator and Survey Monkey administrators will have access to the list of individuals invited to participate in the study and collected individual survey response data. While reasonable and appropriate safeguards have been used in the creation of the web-based survey to maximize the confidentiality and security of your responses, when using information technology, it is never possible to guarantee complete privacy. Survey Monkey’s privacy statement states “we will not use the information collected from surveys in any way, shape or form.” Survey Monkey will keep electronic data stored on servers kept in a locked cage requiring biometric recognition for entry, maintain surveillance equipment on the server site and staff the site 24/7. The Survey Monkey Security Policy can be reviewed at this link: http://www.surveymonkey.com/mp/policy/security/. Paper copies and a USB drive of all data will be kept in a locked filing cabinet in the School of Public Affairs & Administration Office at Western Michigan University for 3 years following the completion of this study. The public will have access to a combined data set of anonymous survey responses, which will be the only form of data that will be used to report findings beyond the provision of your Custom Technology Alignment Maturity report. If any of the information collected is submitted for use in a publication or presentation, you will be able to review the data set and comment before it is submitted. Your name, e-mail address and organization will not be connected to any publications or presentations made by the research team.

You can choose to stop participating in the study at any time for any reason by simply discarding the paper copy of this survey. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either professionally or personally if you choose to withdraw from this study. The investigators can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact either of the co-investigators, Kelly Trusty, at (260)243-0261, kelly.a.trusty@wmich.edu; or Barbara Liggett, Dissertation Committee Chair, at 269-387-8943, barbara.a.liggett@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

Please turn to the next page to begin the SIMO Survey
Thank you for choosing to complete the SIMO Survey online. In order to track survey completion, and to prevent you from receiving reminders in the mail after you've completed the survey online, please enter the Respondent Number printed on your invitation letter in the box below:

**1. RESPONDENT NUMBER (from the top, right hand corner of your paper survey):**

[Input Field]
Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

About Your Organization

The first 9 survey items collect information about your organization. Please choose responses that most closely describe your organization and its use of technology. When asked for narrative responses, please be as detailed as possible. There is no one correct answer for any item. All responses will be kept confidential.

2. Is there a person or team in your organization whose job is dedicated to planning and managing technology?

[ ] yes, employed full-time, responsible for technology only
[ ] yes, employed full-time, responsible for multiple tasks
[ ] yes, employed part-time, responsible for technology only
[ ] yes, employed part-time, responsible for multiple tasks
[ ] yes, volunteer(s) responsible for technology ONLY
[ ] yes, volunteer(s) responsible for multiple tasks
[ ] no, there is not a person or team whose job is to manage technology
[ ] no, we use outside consultant(s) to manage technology
[ ] Don't know

If you have another technology management arrangement, please describe it here.

3. Is there a person or team in your organization whose job is dedicated to planning and managing technology, who does he/she/it report to?

[ ] Executive Director
[ ] Board President
[ ] Chief Financial Officer
[ ] Department Executive
[ ] Volunteer
[ ] Other
[ ] Don’t Know

4. If there is a person or team in your organization whose job is dedicated to planning and managing technology, who does he/she/it report to?

[ ] Executive Director
[ ] Board President
[ ] Chief Financial Officer
[ ] Department Executive
[ ] Volunteer
[ ] Other
[ ] Don’t Know
5. What is your organization’s mission statement?
   *(Your purpose statement can be substituted if you do not have a mission statement.)*

6. Please describe the population(s) you serve, in terms of socio-economic characteristics, demographics, geographic area; number served, primary services rendered, etc.
   *(Please be as detailed as possible.)*

7. In what county is your organization located?
8. What was your organization's total income during the last fiscal year?

- [ ] Less than $500,000
- [ ] $500,000 to $2.5 Million
- [ ] More than $2.5 Million
- [ ] Don't Know

9. Approximately what percentage of your organization's budget was used for technology (e.g. hardware, software applications, networking, Internet access) last year?

- [ ] Less than 1%
- [ ] 1 to 2.9%
- [ ] 3 to 4.9%
- [ ] 5 to 6.9%
- [ ] 7 to 8.9%
- [ ] More than 9%
- [ ] Don't Know

10. How would you characterize your organization's Internet access?

- [ ] The organization does not have any access to the Internet
- [ ] Employees only access the Internet at home
- [ ] We have dial-up Internet access
- [ ] We have DSL Internet access
- [ ] We have Cable Internet access
- [ ] We have T-1 Internet access
- [ ] Don't know or not applicable
11. Please read the four paragraphs below and choose the one paragraph that best describes your organization’s overall strategy and approach to work over the past five years.

- We try to maintain a secure niche in our community. We offer a limited range of programs and services and we try to protect our clients/population from other organizations that try to get them to engage. We try to protect our domain by offering high quality and superior service. We may not be at the forefront of developments in the compared to other organizations like us; we concentrate instead on doing the best job possible with the programs and services we do offer. When we innovate, we do so to improve the efficiency and effectiveness of our current services.

- We try to meet a broad range of needs in our community, and we offer new services when new needs emerge. We value innovation, want to be ‘first in’ with new programs and services even if not all of these efforts have proven to be highly effective in achieving our mission. We try to respond rapidly to early signals concerning areas of opportunity, like grants and other resources, and these responses have often led us to engage in new activities and strategies.

- We work to provide a stable, limited collection of programs and services, while at the same time we try to move out quickly to follow a carefully selected set of promising, evidence-based new strategies to reach and serve our population. We are seldom ‘first in’ with new programs or services, but by carefully monitoring the actions of other organizations with missions similar to ours, we try to be ‘second in’ with a more efficient or effective program or service.

- We don’t have a consistent focus or service niche. When other organizations provide similar services in the same area, we prefer to conserve resources and eliminate offerings, rather than attempt to defend our service area. Although we try to avoid risks associated with new programs or services, occasionally we develop new offerings to keep up with other providers. We are usually forced to respond to environmental pressures, like funding flow and irregular stakeholder support, rather than elaborating and implementing a single strategic thrust.
The next 7 survey items assess the maturity and effectiveness of communication about technology that takes place between people who manage technology and the rest of the managers and leaders in your organization. Each survey item is followed by several statements.

Choose the one statement after each item that best describes technology and your organization.

12. To what extent do technology managers understand the organization’s environment (e.g., its clients, stakeholders, processes, partners, alliances)?
   - [ ] 1-Technology managers do not understand the organization’s environment.
   - [ ] 2-Technology managers have a limited understanding of the organization’s environment.
   - [ ] 3-Technology managers have a good understanding of the organization’s environment.
   - [ ] 4-Understanding of the organization's environment by all technology managers and technology staff is encouraged and promoted by the organization’s leadership.
   - [ ] 5-Understanding of the organization’s environment is required by all technology managers and technology staff (e.g. tied to performance appraisals).
   - [ ] Don’t know or not applicable

13. To what extent do the administrative leaders (Executive Director, CEO, CFO, senior program directors) understand the technology environment (e.g., its current and potential capabilities, systems, services, processes)?
   - [ ] 1-The organization’s administrative leaders do not understand technology.
   - [ ] 2-The organization’s administrative leaders have a limited understanding of technology.
   - [ ] 3-The organization’s administrative leaders have a good understanding of technology.
   - [ ] 4-Understanding of technology by all employees and volunteers is encouraged and promoted by the board and/or CEO of the organization.
   - [ ] 5-The organization’s board and/or CEO require everyone in the organization to understand technology (e.g. tied to performance appraisals).
   - [ ] Don’t know or not applicable
14. To what extent do board members understand the technology environment (e.g., its current and potential capabilities, systems, services, processes)?

- 1-Board members do not understand technology.
- 2-Board members have a limited understanding of technology.
- 3-Board members have a good understanding of technology.
- 4-Understanding of technology by all board members is encouraged and promoted by the board president and/or executive director/CEO.
- 5-Understanding of technology is required (and is delineated in board job descriptions) of all board members.
- Don't know or not applicable

15. The following statements pertain to methods in place to promote organizational education/learning (e.g., of experiences, problems, objectives, critical success factors). Organizational learning occurs primarily through:

- 1-Ad-hoc/casual methods (employee observation, anecdote sharing, peer meetings, etc.).
- 2-Informal methods (newsletters, bulletin board notices, computer reports, group e-mail, fax, etc.).
- 3-Regular, clear methods (face-to-face training, web-based training, e-mails, department meetings, etc.) delivered by program or department managers.
- 4-Formal, unifying, bonding methods such as retreats and organization-wide training programs directed by program or department managers and the executive director/CEO.
- 5-Formal, unifying, bonding methods such as retreats and organization-wide training programs directed by program or department managers and the executive director/CEO, with feedback measures to monitor and promote effectiveness of learning.
- Don't know or not applicable

16. The style of communication between technology managers and organizational leaders (e.g., ease of access, familiarity of stakeholders) tends to be:

- 1-One-way, from the organizational leaders; formal and inflexible.
- 2-One-way, from the organizational leaders; moderately informal and moderately flexible.
- 3-Two-way; formal and inflexible.
- 4-Two-way; moderately informal and moderately flexible.
- 5-Two-way; informal and flexible.
- Don't know or not applicable.
17. The following statements pertain to the extent in which there is knowledge sharing (intellectual understanding and appreciation of the problems/opportunities, tasks, roles, objectives, priorities, goals, direction, etc.) between technology managers and organizational leaders:

- 1-Knowledge sharing is on an as-needed basis.
- 2-Knowledge sharing is somewhat structured and/or structure is beginning to be created.
- 3-There is structured sharing around key administrative and program processes.
- 4-There is formal sharing at program, administrative and board levels.
- 5-There is formal sharing at program, administrative, and board levels, and with collaborative partner organizations/alleances.
- Don’t know or not applicable.

18. The following statements pertain to the role and effectiveness of technology and organizational liaisons (a person or department that fosters collaboration between technology staff and other organization staff):

- 1-We do not use liaisons, or if we do, we do so on an as-needed basis.
- 2-We regularly use liaisons to transfer knowledge between technology and organization staff and volunteers. They are the primary contact point for interactions between technology staff and the rest of the organization. Liaisons are not usually used to facilitate relationship development.
- 3-We regularly use liaisons to transfer knowledge between technology staff and other organization staff. They occasionally facilitate relationship development.
- 4-We regularly use liaisons to facilitate the transfer of knowledge between technology staff and other organization staff. Their primary objective is to facilitate internal relationship development.
- 5-We regularly use liaisons to facilitate the transfer of knowledge between technology staff and other organization staff, volunteers and collaborative partner organizations. Their primary objective is to facilitate relationship development across the organization and its collaborative partners.
- Don’t know or not applicable.
Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

Measuring the Competency and Value of Technology

The next 9 survey items assess ways in which technology competency and value are measured in your organization. Each survey item is followed by several statements.

Choose the one statement after each item that best describes IT and your organization.

19. The following statements pertain to the metrics (indicators or measurement criteria) used to measure technology’s contribution to the achievement of the organization’s mission.

- [ ] 1-The metrics we have in place to measure technology use are primarily technical (e.g., system availability, response time).
- [ ] 2-We are equally concerned with technical and cost efficiency of technology and collect anecdotal information about both.
- [ ] 3-We formally assess technical and cost efficiency of technology using traditional financial measures.
- [ ] 4-We formally assess technical, cost efficiency, and organizational effectiveness of technology using traditional financial measures and mission-focused outcome measures.
- [ ] 5-We use a multi-dimensional approach with appropriate weights given to technical, financial, mission-focused, and human resource measures.
- [ ] Don’t know or not applicable.

20. The following statements pertain to the processes used to measure technology’s contribution to the achievement of the organization’s mission.

- [ ] 1-We have no processes, or sporadic or disorganized processes we use to gather data on technology use. We do not use the data to take action.
- [ ] 2-We have limited, informal processes in place to gather, review, and take action on technology data.
- [ ] 3-We are starting to put formal feedback processes in place to review and take action based on the results of our measures.
- [ ] 4-We have formal feedback processes in place to review and take action based on the results of our measures.
- [ ] 5-We have formal feedback processes in place to review and take action based on the results of our measures. These measures are extended to our partner organizations (e.g., funders, clients, and collaborating organizations).
- [ ] Don’t know or not applicable.
21. The following statements pertain to the use of organizational indicators to measure the value of technology toward the achievement of mission-focused outcomes, the changes in behavior, attitudes, condition, knowledge and/or skills of the people and groups that you serve, changes that are directly related to your mission or purpose.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>We do not measure the achievement of mission-focused outcomes, or do so on an ad-hoc basis.</td>
</tr>
<tr>
<td>2</td>
<td>We are concerned with output measurement, such as the number of clients served or programs implemented, at the program level only. We have limited or no formal feedback processes in place to review and take action based on the results of our measures.</td>
</tr>
<tr>
<td>3</td>
<td>We use traditional outcome measures, such changes in behaviors, attitudes, condition, knowledge or status, to assess the achievement of our mission. We are starting to have formal feedback processes in place to review and take action based on the results of our measures.</td>
</tr>
<tr>
<td>4</td>
<td>We formally measure the value of our work based on the changes our participants, groups, and communities achieve relative to the social values that are in our mission statement. We have formal feedback processes in place to review and take action based on the results of our measures and to assess contributions across programs and organizational divisions.</td>
</tr>
<tr>
<td>5</td>
<td>We use a multi-dimensional approach to measurement with appropriate weights given to stakeholder engagement, capacity, activities, outputs, and short-, intermediate-and long-term outcome indicators. We have formal feedback processes in place to review and take action based on the results of our measures. These indicators (and resulting data) are extended to our external partners (e.g., funders, clients, collaborating organizations).</td>
</tr>
<tr>
<td></td>
<td>Don't know or not applicable</td>
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</table>

22. The following statements pertain to the use of integrated technology and organizational indicators to measure technology's contribution to the achievement of mission-focused outcomes.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>We do not measure the contribution of technology to the achievement of mission-focused outcomes, or do so on an as-needed basis.</td>
</tr>
<tr>
<td>2</td>
<td>The outcome measurements for technology and the mission-focused activities of the organization are not linked. We have limited or no formal feedback processes in place to review and take action based on the results of our measures.</td>
</tr>
<tr>
<td>3</td>
<td>The outcome measurements for technology and the mission-focused activities of the organization are starting to be linked and formalized. We are also starting to have formal feedback processes in place to review and take action based on the results of our measures.</td>
</tr>
<tr>
<td>4</td>
<td>We formally link the outcome measurements of technology and the mission-focused activities of the organization. We have formal feedback processes in place to review and take action based on the results of our measures and to assess contributions across programs and departments.</td>
</tr>
<tr>
<td>5</td>
<td>We use a multi-dimensional approach with appropriate weight given to technology and mission-focused outcome measures. We have formal feedback processes in place to review and take action based on the results of our measures. These measures are extended to our external partners (e.g., funders, clients, collaborating organizations).</td>
</tr>
<tr>
<td></td>
<td>Don't know or not applicable</td>
</tr>
</tbody>
</table>
23. The following statements pertain to the use of *service level agreements* (SLAs), which are formal negotiated contracts that define the technology services being offered by the technology management staff to the rest of the organization:

- 1-We do not use SLAs or do so sporadically.
- 2-We have SLAs which are primarily technically oriented (response time, length of computer downtime, etc.), between the technology manager and specific programs.
- 3-We have SLAs which are both technically oriented and relationship-oriented (user/customer satisfaction, the technology manager’s commitment to the organization, etc.) that are between the technology manager and specific programs and also emerging across the organization.
- 4-We have SLAs which are both technically-oriented and relationship-oriented, between the technology manager and specific programs as well as organization-wide.
- 5-We have SLAs which are both technically-oriented and relationship-oriented, between the technology manager and specific programs as well as organization-wide and with our external collaborating organizations.
- Don't know or not applicable

24. The following statements pertain to *benchmarking practices*, which involve setting thresholds in desired outcomes, (i.e. 70% of eight graders will not have tried alcohol) as measuring points prior to implementing a strategy.

*Informal* benchmarking practices include brief, random interviews, literature searches, company visits, etc., while *formal* benchmarking practices include environmental scanning, structured interviews, data gathering and analysis, and determining best practices.

- 1-We seldom or never perform either informal or formal benchmarking.
- 2-We occasionally or routinely perform informal benchmarking.
- 3-We occasionally perform formal benchmarking and seldom take action based on the findings.
- 4-We routinely perform formal benchmarking and usually take action based on the findings.
- 5-We routinely perform formal benchmarking and have a regulated process in place to take action and measure changes.
- Don't know or not applicable
25. The following statements pertain to the extent of *assessment and review of technology investments*.

- □ 1-We do not formally assess and/or review technology investments.
- □ 2-We assess and/or review only after we have an organization or technology problem (i.e., failed technology project or organizational program).
- □ 3-Assessments and/or reviews of technology investments are becoming routine occurrences.
- □ 4-We routinely assess and/or review technology investments and have a formal process in place to make changes based on the results.
- □ 5-We routinely assess and/or review technology investments and have a formal process in place to make changes based on the results and measure the impact of changes. Our external collaborative partners are included in the process.
- □ Don't know or not applicable

26. The following statements pertain to the extent to which technology/organization **continuous improvement practices** (e.g., feedback loops, quality circles, quality reviews) and effectiveness measures are in place.

- □ 1-We do not have any continuous improvement practices in place.
- □ 2-We have a few continuous improvement practices in place, but no effectiveness measures are in place.
- □ 3-We have a few continuous improvement practices in place and the use of effectiveness measures is emerging.
- □ 4-We have many continuous improvement practices in place and we frequently measure their effectiveness.
- □ 5-We have well established continuous improvement practices and effectiveness measures in place.
- □ Don't know or not applicable

27. The demonstrated contribution that technology has made to the accomplishment of the organization’s mission is:

- □ 1-Very weak.
- □ 2-Somewhat weak.
- □ 3-Neither weak nor strong.
- □ 4-Somewhat strong.
- □ 5-Very strong.
- □ Don't know or not applicable
The next 9 survey items assess the governance in your organization as it relates to technology maturity and effectiveness. Each survey item is followed by several statements.

Choose the one statement after each item that best describes technology and your organization.

28. How is technology organized in your organization?

- Centralized – One person manages all the technology and tells everyone how to use it.
- Decentralized – Everyone manages their own technology.
- Matrixed – Everyone collaborates to decide on hardware, software, networks, and functions.
- Federated/Hybrid – One person or team manages hardware and maintenance, but everyone chooses software and functions of their technology.
- Don’t know or not applicable
- Other (please describe)

29. The following statements pertain to overall organizational strategic planning with participation by technology personnel.

- 1-We do no formal organizational strategic planning or, if it is done, it is done on an as-needed basis.
- 2-We do formal organizational strategic planning at the program level with little participation by technology personnel.
- 3-We do formal organizational strategic planning at the program level with some participation by technology staff. There is some inter-organizational planning.
- 4-We do formal organizational strategic planning at the program level and across the organization with shared participation of technology and other organization staff.
- 5-We do formal organizational strategic planning at the program level and across the organization with participation of all staff and our external collaborating partner organizations.
- Don’t know or not applicable.
30. The following statements pertain to **strategic technology planning** with whole-organization participation.

- 1-We do no formal strategic technology planning or, if it is done, it is done on an as-needed basis.
- 2-We do formal strategic technology planning at the program level with slight participation from the whole organization.
- 3-We do formal strategic technology planning at the program level with some participation from the whole organization. There is some inter-organizational planning.
- 4-We do formal strategic technology planning at the program level and across the organization with whole-organization participation.
- 5-We do formal strategic technology planning at the program level, across the organization, and with our external collaborating partner organizations.
- Don’t know or not applicable.

31. The following statements pertain to **technology budgeting**. Our technology expenditures and technology personnel are budgeted as a(n):

- 1-Line item or cost center, with erratic/inconsistent/irregular/changeable spending.
- 2-Line item or cost center, by program.
- 3-Line item or cost center with some projects treated as investments.
- 4-Investment toward the mission.
- 5-Income or growth center, where technology generates income, membership, or capacity for the organization.
- Don’t know or not applicable.

32. The following statements pertain to **technology investment decisions**. Our technology investment decisions are primarily based on technology's ability to:

- 1-Keep day-to-day operations running
- 2-Reduce costs.
- 3-Increase productivity and efficiency.
- 4-Increase organizational effectiveness. Technology is seen as a process driver or strategy enabler.
- 5-Create competitive advantage and increase achievement of mission-focused goals. Our collaborative partner organizations and clients see value.
- Don’t know or not applicable.
### 33. The following statements pertain to technology steering committee(s) with participation by technology managers and organizational leaders.

- 1-We do not have formal/regular technology steering committee(s).
- 2-We have a technology steering committee which meets informally on an as-needed basis.
- 3-We have a formal technology steering committee, which meets somewhat regularly and have emerging effectiveness in establishing the strategic direction of our technology use.
- 4-We have formal, regular technology steering committee meetings with demonstrated effectiveness in establishing the strategic direction of our technology use.
- 5-We have formal, regular technology committee meetings with demonstrated effectiveness in establishing the strategic direction of our technology use that involve strategic partners in sharing decision-making responsibilities.
- Don't know or not applicable

### 34. The following statements pertain to how technology projects are prioritized. Our technology project prioritization process is usually:

- 1-Based on budget and what is broken
- 2-In reaction to an organization or technology need.
- 3-Determined by the technology lead managers.
- 4-Determined by the organizational leadership.
- 5-Mutually determined by technology managers and organizational leaders, with consideration of the priorities of collaborative partner organizations when appropriate.
- Don't know or not applicable

### 35. The following statements pertain to how internal stakeholders (staff, board, volunteers, clients) are involved in technology decision-making:

- 1-No internal stakeholders (staff, board, volunteers, clients) are involved in technology decision-making
- 2-Internal stakeholders occasionally give general input into technology decisions.
- 3-Internal stakeholders regularly give general input into technology decisions.
- 4-Internal stakeholders regularly give specific, detailed input into technology decisions.
- 5-Internal stakeholders always give specific, detailed input into technology decisions.
- Don't know or not applicable
36. The following statements pertain to how external stakeholders (funders, regulatory bodies, local leaders, collaborative partner organizations) are involved in technology decision-making.

1. No external stakeholders (funders, regulatory bodies, local leaders, collaborative partner organizations) are involved in technology decision-making.

2. External stakeholders occasionally give general input into technology decisions.

3. External stakeholders regularly give general input into technology decisions.

4. External stakeholders regularly give specific, detailed input into technology decisions.

5. External stakeholders always give specific, detailed input into technology decisions.

Don't know or not applicable.
Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

Partnership and Collaboration

The next 6 survey items assess the maturity/effectiveness of the collaboration between technology staff and other staff in your organization. Each survey item is followed by several statements.

Choose the one statement after each item that best describes technology and your organization.

37. Investment in technology personnel and services is perceived by the organization as:

- A cost of doing business.
- Emerging as an asset.
- A fundamental enabler of future organizational activity.
- A fundamental driver of future organizational activity.
- Including an important partner in the organization in bringing value to the organization.
- Don’t know or not applicable

38. The following statements pertain to the role of technology in organizational strategic planning.

- Technology does not have a role.
- Technology is used to enable organizational processes.
- Technology is used to drive organizational processes.
- Technology is used to enable or drive organizational strategy.
- Technology co-adapts with other organizational staff to enable/drive strategic objectives.
- Don’t know or not applicable

39. The following statements pertain to the extent to which technology staff and other organizational staff share the risks and rewards (e.g., bonuses, recognition) associated with technology-based initiatives (i.e., a project is late and over budget because of organizational requirement changes).

- Technology staff takes all the risks and does not receive any of the rewards or benefits.
- Technology takes most of the risks with little reward.
- Sharing of risks and rewards is emerging.
- Risks and rewards are always shared.
- Risks and rewards are always shared and we have formal compensation and reward systems in place that induce all managers to take risks.
- Don’t know or not applicable
40. To what extent are there formal processes in place that focus on enhancing the partnership relationships that exist between technology staff and other organizational staff (e.g., cross-functional teams, training, risk/reward sharing):

- 1-We don't manage our relationships.
- 2-We manage our relationships on an as-needed basis.
- 3-We have defined programs to manage our relationships, but technology or other staff do not always comply with them. Conflict is seen as creative rather than disruptive.
- 4-We have defined programs to manage our relationships and all organizational staff comply with them.
- 5-We have defined programs to manage our relationships, all organizational staff comply with them, and we are continuously improving them.
- Don't know or not applicable

41. The following statements pertain to sponsors/ champions of technology initiatives:

- 1-Technology initiatives do not usually have a senior level sponsor/champion.
- 2-Technology initiatives often only have a senior level technology sponsor/champion.
- 3-Technology initiatives often have a senior level technology leader and an organizational leader as sponsors/champions at the program level.
- 4-Technology initiatives often have a senior level technology leader and an organizational leader as sponsors/champions at the corporate level.
- 5-Technology initiatives nearly always have a senior level technology leader and the executive director/CEO as the sponsors/champions.
- Don't know or not applicable

42. The following statements pertain to the organization’s level of collaboration with internal and external stakeholders.

- 1-Our organization generally does not practice or encourage collaboration.
- 2-Technology staff and other organizational staff collaborate among programs and internal functions occasionally.
- 3-Technology staff and other organizational staff collaborate among programs and internal functions regularly.
- 4-Technology staff and other organizational staff collaborate occasionally with each other and with other organizations.
- 5-Technology staff and other organizational staff collaborate regularly with each other and other organizations.
- Don't know or not applicable
43. The following statements pertain to your organization's scope of technology systems. Our primary systems are:

- 1-Traditional office support (e.g., accounting, word processing, data management)
- 2-Transaction-oriented (e.g., e-mail, internal webinars and electronic training, membership database), as well as some of the systems described above.
- 3-Administrative process enablers (Technology supports organizational process change, e.g., informational web site, e-commerce, electronic marketing), as well as some of the systems described above.
- 4-Administrative process drivers (Technology is a catalyst for organizational process change, e.g., social media, web-based education programs), as well as some of the systems described above.
- 5-Organization strategy enablers/drivers (Technology is a catalyst for changes in the organization’s overall strategy, e.g., online advocacy, social media community), as well as some of the systems described above.
- Don’t know or not applicable

44. The following statements pertain to the creation, use, and compliance with technology standards and policies. Our technology standards and policies are:

- 1-Non-existent or not enforced.
- 2-Defined and enforced at the department or program level but not across different programs and departments.
- 3-Defined and enforced at the department or program level with emerging coordination across programs and departments.
- 4-Defined and enforced across programs and departments.
- 5-Defined and enforced across departments, and with joint coordination among our strategic, collaborative partners/alliances.
- Don’t know or not applicable
45. The following statements pertain to the scope of architectural integration, or shared relationships between different elements of your technology systems, like computer networks, hardware, and software. The components of our technology infrastructure are:

- 1-Not well integrated.
- 2-Integrated at the program or department with emerging integration across programs or departments.
- 3-Integrated across programs or departments.
- 4-Integrated across programs or departments and our strategic collaborative partner organizations/ alliances.
- 5-Evolving with our collaborative partner organizations/alliances.
- Don't know or not applicable

46. The following statements pertain to the scope of your technology infrastructure’s flexibility to organizational and technology changes. Our technology infrastructure is viewed as:

- 1-A utility providing the basic technology services at minimum cost.
- 2-Emerging as driven by the requirements of the current organizational strategy.
- 3-Driven by the requirements of the current organizational strategy.
- 4-Emerging as a resource to enable fast response to changes in the environment or community.
- 5-A resource to enable and drive fast response to changes in the environment or community.
- Don't know or not applicable
47. **Internal** technology tools and systems are those that enable you to process information primarily within your organization. How many different types of the following external technology tools does your organization use on a regular basis:

Hard-wired network, wireless network, desktop computer, laptop computer, tablet computer, desktop printer, network printer, scanner, smart phones, internal e-mail, electronic conferencing, integrated communication applications, private-access cloud servers and web-based applications, productivity software, accounting software, collaboration software, membership database, etc.?

- 1- None
- 2- 1 to 3
- 3- 4 to 6
- 4- 7 to 9
- 5- 10 or more
- Don't know or not applicable

48. **External** technology tools and systems are those that enable you to exchange information outside of your organization. How many different types of the following external technology tools does your organization use on a regular basis?

Bulk e-mail distribution, organizational website, banner ads, online progress reporting, online grant submission, collaboration software, e-commerce, fundraising, social networking, text blasts, instant messaging, media sharing (photo, music, video), electronic meetings, blogging or microblogging, volunteer matching, etc.?

- 1- None
- 2- 1 to 3
- 3- 4 to 6
- 4- 7 to 9
- 5- 10 or more
- Don't know or not applicable
The next 9 survey items assess the maturity/effectiveness of your organization's *technology skills* and *ability to secure staff and volunteers with appropriate technology skills*. Each survey item is followed by several statements.

Choose the **one** statement after each item that best describes technology and your organization.

**49. The following statements pertain to the extent to which *organization leadership*, both the board and CEO, has *tacit knowledge* about technology, in other words, they understand how specific technology tools work.**

- 1. Leadership knows nothing about technology.
- 2. Leadership has **limited** knowledge about technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 3. Leadership has **sufficient** knowledge about technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 4. Leadership has **expertise** related to technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 5. Leadership is able to **teach others** about technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- Don't know or not applicable

**50. The following statements pertain to the extent to which *organization leadership*, both the Board and CEO, has *explicit knowledge* about technology, in other words, they have experience in using technology to manage projects and solve problems.**

- 1. Leadership does not have experience in using technology to manage projects and solve problems.
- 2. Leadership has **limited** experience in using technology to manage projects and solve problems.
- 3. Leadership has a **good deal** of experience in using technology to manage projects and solve problems.
- 4. Leadership has **extensive** experience in using technology to manage projects and solve problems.
- 5. Leadership is able to **teach others** how to use technology to manage projects and solve problems.
- Don't know or not applicable
51. The following statements pertain to the extent to which organization staff (other than the CEO/Executive Director) have tacit knowledge about technology, in other words, they understand how specific technology tools work.

- 1. All or most staff members know nothing about technology.
- 2. All or most staff members have limited knowledge about technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 3. All or most staff members have sufficient knowledge about technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 4. All or most staff members have at least one area of expertise related to technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.
- 5. All or most staff members are able to teach others about at least one area of technology, how to manage technology applications, how to develop technology systems, or how to find out more about technology.

Don't know or not applicable

52. The following statements pertain to the extent to which organization staff (other than the CEO/Executive Director) have explicit knowledge about technology, in other words, they have experience in using technology to manage projects and solve problems.

- 1. All or most staff members do not have experience in using technology to manage projects and solve problems.
- 2. All or most staff members have limited experience in using technology to manage projects and solve problems.
- 3. All or most staff members have a good deal of experience in using technology to manage projects and solve problems.
- 4. All or most staff members have extensive experience in using technology to manage projects and solve problems.
- 5. All or most staff members are able to teach others how to use technology to manage projects and solve problems.

Don't know or not applicable

53. The following statements pertain to opportunities for employees to build technology skills in order to best serve in their primary role, program, or department. The organization:

- 1. Does not provide opportunities to build technology skills necessary to do one’s primary job.
- 2. Provides informal training opportunities on an as-needed basis.
- 3. Provides specific formal training opportunities that are dependent on the program or department.
- 4. Provides formal training programs that are practiced by all programs or departments.
- 5. Ensures that opportunities to learn necessary skills and explore new technologies are formally and informally available across the organization and with collaborative partner organizations/alliances.

Don’t know or not applicable
### Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

54. The following statements pertain to opportunities for employees to **build technology skills and learn about and support services outside of their primary role, program, or department** (e.g., database managers trained in program delivery functions, program managers trained in social media implementation) using programs such as workshops, cross training and job rotation. The organization:

- 1-Does not provide opportunities to build technology skills and learn about support services outside the employee’s department or program.
- 2-Provides training opportunities that are dependent on the program or department or on an as-needed basis.
- 3-Provides formal training programs that are practiced by all programs or departments.
- 4-Provides formal training programs that are practiced by all programs or departments and across the organization.
- 5-Ensures that opportunities are formally and informally available across the organization and with collaborative partner organizations/ alliances.
- Don’t know or not applicable

55. The following statements pertain to **career crossover opportunities** among technology and other organizational personnel, including volunteers.

- 1-Job transfers and job sharing rarely or never occur.
- 2-Job transfers and job sharing occasionally occur within programs or departments.
- 3-Job transfers and job sharing regularly occur for management level positions usually at the program or department level.
- 4-Job transfers and job sharing regularly occur for all position levels and within the program or department level.
- 5-Job transfers and job sharing regularly occur for all position levels, within the program or department, and at the corporate level.
- Don’t know or not applicable

56. The following statements pertain to the organization’s ability to **attract and retain the best qualified technical professionals** who have an appropriate balance of technical, programmatic, and/or clinical skills.

- 1-There is no formal program to retain technology professionals. Recruiting demands are filled ineffectively.
- 2-Technology-area hiring is focused on technical expertise.
- 3-Technology-area hiring is focused equally on finding professionals with technical and programmatic and/or clinical expertise. Retention programs are in place.
- 4-Formal programs are in place to attract and retain the best technology professionals who have a balance of technical and programmatic and/or clinical skills.
- 5-Effective programs are in place to attract and retain the best technology professionals who have extensive technical and programmatic and/or clinical skills.
- Don’t know or not applicable
57. The following statements pertain to the organization’s ability to attract and retain volunteers who are technologically competent:

- 1-There is no formal program to recruit and retain volunteers for specific roles. We take whoever shows up and put them to work.
- 2-We only require volunteers to pass a background check.
- 3-We require a minimum set of skills (typing, filing) from all volunteers.
- 4-We have a volunteer application and screening process and try to match skills with tasks, and we provide technology training that is specific to volunteer tasks.
- 5-We recruit volunteers who have the skills and experience to do specific technology tasks, and we provide technology training so that they can expand their skills.
- Don’t know or not applicable
The next 10 survey items assess your organization’s culture, or values and behaviors that contribute to its unique social environment. Each survey item is followed by several statements. Choose the one statement after each item that best describes the culture of your organization.

58. The following statements pertain to the extent that the organization fosters an innovative, entrepreneurial environment. Entrepreneurship and innovation are:

- 1-Discouraged.
- 2-Moderately encouraged at the program or department level.
- 3-Strongly encouraged at the program or department level.
- 4-Strongly encouraged at the program or department and corporate levels.
- 5-Strongly encouraged at the program or department, corporate level, and with collaborative partner organizations/alliances.
- Don’t know or not applicable

59. The following statements pertain to the extent that external stakeholders (funders, policymakers, collaborative partners, etc.) encourage innovation:

- 1-Innovation is discouraged, and status-quo is encouraged.
- 2-Innovation is moderately encouraged by a few external stakeholders.
- 3-Innovation is moderately encouraged by a majority of external stakeholders.
- 4-Innovation is strongly encouraged by a few external stakeholders.
- 5-Innovation is strongly encouraged by a majority of external stakeholders.
- Don’t know or not applicable

60. The following statements pertain to the cultural locus of power in making decisions about technology. Our important technology decisions are made by:

- 1-Organization leaders (board/CEO) or technology leaders at the corporate level only.
- 2-Organization leaders (board/CEO) or technology leaders at corporate level with emerging program- or department-level influence.
- 3-Organization leaders at corporate and program/department levels, with emerging shared influence from technology leaders.
- 4-Organization and technology leaders across the organization with input from program and department staff.
- 5-Organization and technology leaders across the organization with input from program and department staff and collaborative partners.
- Don’t know/not applicable
### Strategy, IT, Mission and Outcome (SIMO) Alignment Survey

61. The following statements pertain to the *interpersonal climate* (e.g., confidence, respect, cooperation) that exists between technology staff and the staff of programs/departments in your organization.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is minimum interaction between technology staff and other areas of the organization.</td>
</tr>
<tr>
<td>2</td>
<td>The association is primarily an “arm’s length” transactional style of relationship.</td>
</tr>
<tr>
<td>3</td>
<td>Confidence, respect and cooperation among technology staff and other programs/departments are emerging.</td>
</tr>
<tr>
<td>4</td>
<td>Confidence, respect and cooperation among technology staff and other programs/departments are demonstrated on a regular basis.</td>
</tr>
<tr>
<td>5</td>
<td>Confidence, respect and cooperation are demonstrated on a regular basis across the organization and extended to external stakeholders.</td>
</tr>
<tr>
<td></td>
<td>Don’t know/not applicable</td>
</tr>
</tbody>
</table>

62. The following statements pertain to *perceived trust and value* between technology staff and the rest of the organization.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is a sense of conflict and mistrust between technology staff and the rest of the organization.</td>
</tr>
<tr>
<td>2</td>
<td>The association is one of neutral service provision.</td>
</tr>
<tr>
<td>3</td>
<td>Technology staff are perceived as adding value to the organization.</td>
</tr>
<tr>
<td>4</td>
<td>The association is primarily a long-term partnership style of relationship with shared understandings.</td>
</tr>
<tr>
<td>5</td>
<td>The association is one of trust, long-term partnership, and shared commitment to the organization’s mission.</td>
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<tr>
<td></td>
<td>Don’t know or not applicable</td>
</tr>
</tbody>
</table>

63. The following statements pertain to the perceptions held of *learning* in your organization.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning is not encouraged. Staff and volunteers in our organization are unwilling to learn new things.</td>
</tr>
<tr>
<td>2</td>
<td>Learning is viewed as a requirement. Leaders, staff and volunteers are willing to learn behaviors and skills they can use immediately in their roles.</td>
</tr>
<tr>
<td>3</td>
<td>Learning is viewed as adding value. Leaders, staff and volunteers ask questions, evaluate what they know and need to know, and put what they’ve learned into practice outside of their primary role.</td>
</tr>
<tr>
<td>4</td>
<td>Learning is viewed as an investment. Leaders, staff and volunteers value learning opportunities, pursue new opportunities in order to make themselves and the organization more effective.</td>
</tr>
<tr>
<td>5</td>
<td>Learning is viewed as part of the mission. Leaders, staff and volunteers view learning as a way to make the community a better place.</td>
</tr>
<tr>
<td></td>
<td>Don’t know or not applicable</td>
</tr>
</tbody>
</table>
64. The following statements pertain to your organization’s readiness for change.

- 1-We tend to resist change.
- 2-We recognize the need for change and change readiness programs are emerging.
- 3-Change readiness programs providing training and necessary skills to implement change are in place at the program/department level.
- 4-Change readiness programs are in place at program/department and organization levels.
- 5-Change readiness programs are in place across the organization and we are proactive in learning about and anticipating change.
- Don’t know or not applicable

65. The following statements pertain to the level of disruption caused by organizational and technology changes (e.g., implementation of a new technology, organizational process, new partnership). Most of the time, a change is:

- 1-Not readily transparent or planned for (very disruptive).
- 2-Transparent and planned for at the program/department level only.
- 3-Transparent and planned for at the program/department level and emerging across all remote, branch, and mobile locations.
- 4-Transparent and planned for across the entire organization.
- 5-Transparent and planned for across the organization and with our collaborative partner organizations/alliances
- Don’t know or not applicable.

66. The ability of technology staff and tools to react/respond quickly to the organization’s changing needs is:

- 1-Very weak.
- 2-Somewhat weak.
- 3-Neither weak nor strong.
- 4-Somewhat strong.
- 5-Very strong.
- Don’t know or not applicable
67. The ability of organization staff and volunteers to react/respond quickly to technology changes in the organization is:

- [ ] 1-Very weak.
- [ ] 2-Somewhat weak.
- [ ] 3-Neither weak nor strong.
- [ ] 4-Somewhat strong.
- [ ] 5-Very strong.
- [ ] Don’t know or not applicable
68. You have answered many different questions related to alignment, or coordination of technology with the goals, strategies, and processes used to meet your mission.

After answering these questions, where would you place your organization on the following scale in terms of its level of technology alignment?

| Level 1-No alignment: The organization is struggling to keep up with technology strategy and infrastructure. |
| Level 2-Beginning alignment: The organization has basic systems in place, but no plan for maintenance or growth. |
| Level 3-Establishing processes: The organization has a stable technology infrastructure, solid equipment and software, and strong policies, but technology is not used strategically to help meet the mission. |
| Level 4-Improving processes: The organization anticipates and meets technology needs, technology staff is involved in strategic planning, and technology is used to help internal and external functions. |
| Level 5-Optimal processes: A percentage of budget is dedicated to technology, existing technologies are evaluated for mission and revenue impact, and new technologies are explored for future use. |
| Don’t know or not applicable |
This section of the survey focuses on how you measure whether your organization is meeting its mission. The following 8 survey items describe different elements that are involved in the process of an organization doing its work of creating positive change in individuals, families, and communities. The elements are shown in the image below.

First you will be asked about stakeholder engagement, capacity, activities, and outputs. On the next page you will be asked about outcomes.

Please read the definitions of each element and select the response that best describes where your organization performs in terms of that element, and how you perceive technology as influencing that performance.

For each survey item, choose one response that best describes your organization’s performance.

69. **Stakeholder engagement** A **stakeholder** is any individual or group who is affected by or can affect an organization’s work. **Stakeholder engagement** is an organization’s direct actions to enlist and sustain the involvement of stakeholders in strategic planning, implementation, and measurement of the organization’s mission, goals, activities, and outcomes.

(Examples of stakeholder engagement include educating and recruiting key decision-makers to work with the organization; building collaborative relationships; hosting information-sharing, networking, or planning sessions; and communicating progress.)

Please select the response that describes the *extent to which you engage stakeholders* in the work of the organization.

- 1 – We do not engage any stakeholders in planning and implementing our programs and strategies. The staff does all the work.
- 2 – We engage internal stakeholders only, such as our board, volunteers, and clients, in planning and implementing our programs and strategies.
- 3 – We engage internal stakeholders, such as our board, volunteers, and clients, as well as external stakeholders, such as funders, other nonprofit organizations, schools, governmental agencies, and local businesses, in planning and implementing our programs and strategies.
- 4 – We engage both internal and external stakeholders, and we are continually looking for new stakeholders to help us with our work.
- We don’t measure or monitor stakeholder engagement.
- I don’t know.
70. In your efforts to engage stakeholders over the past year, to what extent have technology tools affected the efficiency, cost effectiveness, quantity, quality, and stakeholder satisfaction of your efforts?

<table>
<thead>
<tr>
<th></th>
<th>Reduced a great deal</th>
<th>Reduced somewhat</th>
<th>Did not affect</th>
<th>Helped somewhat</th>
<th>Helped a great deal</th>
<th>Do not use technology for this purpose</th>
<th>Don’t know</th>
</tr>
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<tbody>
<tr>
<td>Efficiency</td>
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<td>Cost Effectiveness</td>
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<td>Quantity</td>
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<tr>
<td>Stakeholder Satisfaction</td>
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71. **Capacity** is the collection of factors that contribute to an organization’s effectiveness. In other words, does the organization have what it needs, or sufficient capacity to do its important work?

(Examples of capacity include the level of sufficiency of an organization’s financial health, staff, volunteers, equipment, space, education and skills to do the work that needs to be done to achieve its mission.)

Please select the response that describes your organization’s **capacity to do its work**.

- 1 – We do not have the capacity to do the work that needs to be done. We are struggling to keep our organization running.
- 2 – We have low capacity to do the work that needs to be done. Much is lacking in terms of funding, staff, volunteers, equipment, space, and/or skills to accomplish day-to-day tasks.
- 3 – We have sufficient capacity to do the work that needs to be done. We have the basic resources necessary to accomplish our goals.
- 4 – We have abundant capacity to do the work that needs to be done. We have the resources necessary to accomplish our existing goals, as well as resources to invest in new opportunities.
- We don’t measure or monitor capacity.
- I don’t know.
72. In your efforts to build your organization’s capacity (e.g. raise funds, manage finances, recruit staff and volunteers, build partnerships, train staff, track client participation) over the past year, to what extent have technology tools affected the efficiency, cost effectiveness, quantity, quality, and board/staff/volunteer satisfaction of these efforts?

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73. Activities, also known as programs and/or strategies, are the actions that an organization does to intervene with clients or participants in order to help them achieve a positive change that is related to the organization’s mission.

(Examples of activities include education, training, recreation, media or advocacy campaigns, information distribution, cultural exhibits and treatment interventions.)

Please select the response that describes the extent to which you provide activities in your community that are related to your mission.

- 1 – We do not implement any activities that are related to our mission.
- 2 – We implement a few mission-related activities every year, but not as many as we should in order to achieve our goals.
- 3 – We implement sufficient mission-related activities to achieve our goals.
- 4 – We implement many mission-related activities over the course of a year, we surpass our goals, and we are planning to expand the number and/or scope of our activities.
- We don’t measure or monitor activities.
- I don’t know.
74. In your efforts to implement activities over the past year, to what extent have technology tools affected the efficiency, cost effectiveness, quantity, quality, and participant satisfaction of these efforts?

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75. Outputs are the products, goods, and services created by the organization and/or provided to participants of a program or intervention, usually reported by units of service produced.

(Examples of outputs include the number of activities produced such as workshops delivered, campaigns implemented, or exhibits installed, as well as the number of participants such as youth successfully graduating from a program, clients completing a treatment plan, community members participating in an activism event, or visitors interacting with an exhibit.)

Please select the response that describes the extent to which your organization produces outputs related to your mission.

- 1 – We do not produce any mission-related outputs.
- 2 – We produce a few outputs, but not enough to achieve our goals.
- 3– We produce sufficient outputs to achieve our goals. For example, we provide educational programs to all third grade students in the county, or attendance at our events is as high as we anticipate.
- 4 – Our outputs generally exceed our goals in terms of the number and scope of individuals or groups we serve.
- We don’t measure or monitor outputs.
- I don’t know
76. In your efforts to *generate outputs* over the past year, to what extent have technology tools affected the efficiency, cost effectiveness, quantity, quality, and participant satisfaction of these efforts?

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Outcomes Measurement

This section of the survey continues to focus on how you measure whether your organization is meeting its mission. The following 6 survey items describe different elements that are involved in the results of an organization doing its work of creating positive change in individuals, families, and communities. The elements are again shown in the image below.

On this page you will be asked about outcomes, the changes that take place in participants or communities after they are involved in an organization's activities and strategies. Referring to the diagram above, outcomes are the results of the stakeholder engagement, capacity, activities, and outputs of the organization.

Mission-focused outcomes are changes that are directly related to the social values that an organization promotes or works toward, such as self-sufficiency, safety, or health.

Please read the definitions of each element and select the response that best describes where your organization performs in terms of that element, and how you perceive technology as influencing that performance.

For each survey item, choose one response that best describes your organization's performance.
### 77. Short-term outcomes are changes in knowledge, skills, or attitudes that are most closely related to the program’s activities and outputs. These outcomes are apparent a short time (within a year) after completing an activity.

Examples of short-term outcomes include understanding the signs of bullying, overcoming triggers for wanting to smoke, or adopting a “green” perspective on shopping.

**To what extent do the individuals or groups served by your organization achieve short-term outcomes related to your mission and goals?**

- **1** – None of the individuals or groups served by my organization has achieved any short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **2** – Less than 20% of the individuals or groups served by my organization have achieved short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **3** – 21-40% of the individuals or groups served by my organization have achieved short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **4** – 41-60% of the individuals or groups served by my organization have achieved short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **5** – 61-80% of the individuals or groups served by my organization have achieved short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **6** – 81-100% of the individuals or groups served by my organization have achieved short-term, mission-focused outcomes (changes in knowledge, skills or attitudes) within a year of participation.
- **We don’t measure or monitor short-term outcomes.**
- **I don’t know.**

### 78. How much has your organization’s use of technology influenced your clients’/participants’/target groups’ achievement of short-term outcomes (changes in knowledge, skills or attitudes)?

- **1** – Not at all. Our use of technology has had no influence on changes in our clients’/participants’ knowledge, skills, or attitudes.
- **2** – A little bit. Our use of technology has had a little bit of influence on changes in our clients’/participants’/target groups’ knowledge, skills, or attitudes.
- **3** – Somewhat. Our use of technology has had some influence on changes in our clients’/participants’/target groups’ knowledge, skills, or attitudes.
- **4** – A great deal. Our use of technology has had a great deal of influence on changes in our clients’/participants’/target groups’ knowledge, skills, or attitudes.
- **5** – Exclusively. Our use of technology has been the primary reason people have engaged with us and have experienced changes in knowledge, skills, or attitudes.
- **I don’t know.**
79. **Intermediate outcomes** are changes in behavior that result from short-term outcomes. Intermediate outcomes emerge between 1 and 3 years after a person completes an activity.

(Examples of intermediate outcomes are behaviors such as solving problems peacefully, quitting smoking, or voluntarily reducing, reusing and recycling.)

**To what extent do the individuals or groups served by your organization achieve intermediate outcomes related to your mission and goals?**

- 1 – None of the individuals or groups served by my organization has achieved any intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- 2 – Less than 20% of the individuals or groups served by my organization have achieved intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- 3 – 21-40% of the clients or groups served by my organization have achieved intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- 4 – 41-60% of the individuals or groups served by my organization have achieved intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- 5 – 61-80% of the individuals or groups served by my organization have achieved intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- 6 – 81-100% of the individuals or groups served by my organization have achieved intermediate, mission-focused outcomes (changes in behavior) in the past 1-3 years.
- We don’t measure or monitor intermediate outcomes.
- I don’t know.

80. **How much has your organization’s use of technology influenced your clients’/participants’/target groups’ achievement of intermediate outcomes (changes in behavior)?**

- 1 – Not at all. Our use of technology has had no influence on changes in our clients’/participants’/target groups’ behavior.
- 2 – A little bit. Our use of technology has had a little bit of influence on changes in our clients’/participants’/target groups’ behavior.
- 3 – Somewhat. Our use of technology has had some influence on changes in our clients’/participants’/target groups’ behavior.
- 4 – A great deal. Our use of technology has had a great deal of influence on changes in our clients’/participants’/target groups’ behavior.
- 5 – Exclusively. Our use of technology has been the primary reason people have engaged with us and changed their behavior.
- I don’t know.
81. Long-term outcomes, or impacts, are fundamental changes that occur in the condition or status of individuals, groups, or communities. Long-term outcomes usually emerge 3 or more years after a group of people completes an activity, and the outcomes are usually sustained over a period of time.

(Examples of long-term outcomes are reduced annual incidence of bullying in a school corporation, reductions in tobacco-related illnesses in a community, or a company’s reduced carbon footprint.)

To what extent have the individuals, groups, or community(ies) you serve achieved long-term outcomes related to your mission and goals?

☐ 1 – None of the individuals, groups, or community(ies) served by my organization have achieved any long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ 2 – Less than 20% of the individuals, groups, or community(ies) served by my organization have achieved long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ 3 – 21-40% of the individuals, groups, or community(ies) served by my organization have achieved long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ 4 – 41-60% of the individuals, groups, or community(ies) served by my organization have achieved long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ 5 – 61-80% of the individuals, groups, or community(ies) served by my organization have achieved long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ 6 – 81-100% of the individuals, groups, or community(ies) served by my organization have achieved long-term, mission-focused outcomes (sustained changes in status or condition) over the past 3-5 years.

☐ We don’t measure or monitor long-term outcomes.

☐ I don’t know.
82. How much has your organization’s use of technology influenced your clients’/participants’/target groups’ achievement of long-term outcomes (changes in condition or status)?

- 1 – Not at all. Our use of technology has had no influence on changes in the status or condition of the clients/participants, target groups or community(ies) we serve.

- 2 – A little bit. Our use of technology has had a little bit of influence on changes in the status or condition of the clients/participants, target groups or community(ies) we serve.

- 3 – Somewhat. Our use of technology has had some influence on changes in the status or condition of the clients/participants, target groups or community(ies) we serve.

- 4 – A great deal. Our use of technology has had a great deal of influence on changes in the status or condition of the clients/participants, target groups or community(ies) we serve.

- 5 – Exclusively. Our use of technology has been the primary reason people, groups, and or community(ies) have experienced changes in their status or condition.

- I don't know.
About You

The 5 items in this section gather information about you personally. This information will be used to describe the group of people who have responded to this survey. The information you provide will only be used in an aggregated (group) fashion, and your responses will not be identifiable or able to be connected to you personally.

83. What is your position/title in the organization?

84. How long have you been involved with this organization?

- 0-2 years
- 3-5 years
- 6-8 years
- 9 or more years

85. What is your level of education?

- Less than high school diploma/GED
- High school diploma/GED
- College certificate
- Associate's degree
- Bachelor's degree
- Graduate degree

86. How would you describe your level of technology experience and expertise?

- Very little experience or skill
- Experience, but not much skill
- Experienced and skilled
- Very experienced and skilled
- Expert

87. At what level would you support your organization’s efforts to align IT with your organization's mission?

- I would not support it at all.
- I would be hesitant to support it.
- I would be supportive.
- I would be supportive and helpful.
- I would be very supportive and willing to champion the effort.
88. In order to send your Custom Technology Alignment Maturity Report and Technology Strategy Guide, I would like to know your name, the name of your organization, and preferred e-mail address. Please share them below.

If you do not wish to receive these items, you do not need to share this information.

Your name: 

Your preferred e-mail address: 

Your organization's name: 

Thank you very much for participating in the Nonprofit IT Alignment Study. The information you shared will be used to create a model that helps us understand how nonprofit organizations align technology with their overall strategies in ways that will help them better meet their mission. In several weeks, you will receive an email from me that contains an important attachment that will include:

1. Your Custom Technology Alignment Maturity Report, which will show you the areas in which your technology is aligned in mission-focused ways, and areas in which you can keep working on alignment.

2. A Technology Strategy Guide, which will suggest strategies and activities you and your organization can use to increase your level of IT/Mission Alignment.

I wish you the best in your mission-focused efforts! Again, thank you very much for contributing your time, efforts, and expertise to this study.

If you have any questions, you are welcome to contact me at 260-243-0261 or kelly.a.trusty@wmich.edu.

Sincerely,

Kelly Trusty
Project Director
APPENDIX D

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Hi Kelly. You have permission to adapt and use the Strategic Alignment Maturity Model questionnaire for an investigation of the relationships between strategy typology, IT/alignment maturity and organizational performance in the nonprofit sector. This permission follows permission granted in 2011.

Hi Kelly. You have permission to adapt and use the Strategic Alignment Maturity Model questionnaire for an investigation of the relationships between strategy typology, IT/alignment maturity and organizational performance in the nonprofit sector. This permission follows permission granted in 2011.

Dear Dr. Luftman,

I am writing to follow up on our e-mail conversation that took place in 2011 about adapting the SAMM for use in the nonprofit sector with a very important request.

In our conversation, you gave your permission for SAMM to be adapted and used for my dissertation research. Unfortunately, between then and now, I experienced computer storage failure and only have a screen capture of your last correspondence, which doesn't provide enough information that I had your permission to adapt and use SAMM. I had created screen shots of each part of our conversation and pasted one into my appendix-gathering list, intending to bring the rest of them in when I put the appendices together. The other screen shots, of the entire conversation, were lost, as was the email archive.

I completed my investigation, my dissertation is written, and I am now pulling together my
appendices. **Can you please send me an email stating that I have permission to adapt and use the Strategic Alignment Maturity Model questionnaire for an investigation of the relationships between strategy typology, IT/alignment maturity and organizational performance in the nonprofit sector? Also, in your email, please indicate that this permission follows permission granted in 2011.**

Thank you in advance for your understanding, your assistance, and for supporting this work.

I look forward to hearing from you soon.

--
Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs and Administration
kelly.a.trusty@wmich.edu
260-243-0261
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APPENDIX E

HSIRB Approval Not Required Letter
Date: January 31, 2012

To: Barbara Liggett, Principal Investigator
   Kelly Trusty, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: Approval not needed 12-01-28

This letter will serve as confirmation that your project “The Relationship between Strategy and IT/Mission Alignment on Nonprofit Organizational Outcomes” has been reviewed by the Human Subjects Institutional Review Board (HSIRB). Based on that review, the HSIRB has determined that approval is not required for you to conduct this project because the aim is to study organizational strategies and outcomes; you are not collecting personal identifiable (private) information about human subjects.

Thank you for your concerns about protecting the rights and welfare of human subjects.

A copy of your protocol and a copy of this letter will be maintained in the HSIRB files.
APPENDIX F

Grantee Invitations to Participate in SIMO Study
Dear Kelly,

I am writing to ask for your participation in a survey that I am conducting for my Ph.D. Dissertation in the School of Public Affairs and Administration at Western Michigan University. I would be very grateful if you could complete the survey by April 19.

I would like nonprofit leaders, like you, whose organizations are grantees of the Sample Community Foundation, to reflect on and share information about your organizational strategies, technology use, and organizational performance that leads to outcomes - positive changes in the individuals, groups, and communities you serve. Your organization was selected to participate because it is listed as a grantee on your local community foundation's website or in one of its publications.

Your participation adds value:
Your responses to this survey are very important and will help nonprofit organizations understand what it means to align technology with their mission. Your responses may also help nonprofits receive better technology training and technical assistance.

Benefits to you:
To thank you for your participation, you will receive a Custom Technology Alignment Report, which will provide a summary of your organization’s use of technology and how well it appears to be aligned with your mission. You will also receive a Technology Strategy Guide, which contains suggestions of cutting-edge strategies that can help Sample Organization use technology to better meet its mission. The custom report is available only to organizations like yours that are invited to participate.

Participation is voluntary & confidential:
All of your individual responses will be kept completely confidential, and only your organization will receive your Custom Technology Alignment Maturity Report summary scores. Only the researchers involved will have access to your organization’s survey.

WMU Webmail Plus
kttk8904@wmich.edu
responses and contact information.

Before you begin the survey, please read the Informed Consent document at the end of this message. By accessing the Survey Monkey survey using the link in this email, and clicking NEXT on the survey welcome screen, you are agreeing that you are over 18 years of age, you have read this informed consent document and you agree to take part in this study.

**About the survey:**
The survey should take you about 45 minutes to complete. (Like you, I am also a nonprofit professional, having spent nearly 20 years working in communities. I realize this is a significant time commitment and your time is very limited. Your insight and time will add great value to our knowledge base.) Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser).

**Survey Link:** https://www.surveymonkey.com/s.aspx?sm=UpF3X79swzmWPRDJzpzsQ_3d_3d

**Thank you!**
Thank you in advance for completing this survey. It is only with the help of nonprofit professionals like you that we can provide new knowledge to guide nonprofit organizations in using technology best practices to meet their missions.

If you have any questions or comments, please feel free to contact me at kelly.a.trusty@wmich.edu or 260-243-0261.

With Appreciation and Best Regards,

Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs & Administration

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list. https://www.surveymonkey.com/optout.aspx?sm=UpF3X79swzmWPRDJzpzsQ_3d_3d

--------------------------------------------

Western Michigan University
School of Public Affairs & Administration
Informed Consent Document

Principal Investigator: Kelly Trusty
Title of Study: THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES

You are invited to participate in a research project titled “THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES”. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project.

In this study, we are trying to find out if there are relationships in nonprofit organizations (NPOs) between the strategic and organizational factors that enable and inhibit IT alignment, which is the level at which an organization uses technology strategies and tools in ways that helps it meet its mission and goals.

You may participate in this study if you are the person who has primary responsibility for making technology decisions in your organization. You were selected to participate in this study because you are a grantee of one of 45 Indiana Community Foundations randomly selected for inclusion in the study. If you are not the person in charge of technology for your organization, please forward this e-mail invitation to the individual in your coalition who meets this criterion.

This study will take place entirely online, where you will complete a 86-item Survey Monkey survey. It should take you about 45 minutes to complete the survey, which is all that is required to participate in the study.

If you choose to participate in this study after reading this document, you should access the Survey Monkey survey using the unique link included in this email. Once you read the Welcome and directions, click NEXT to continue to the next page. By clicking NEXT, you will signify that you have read and understood this Informed Consent document.

You should use the buttons, keyboard and navigation tools on the page to complete the survey, then click NEXT at the end of the survey to submit your responses. You will be asked to close your browser after completing the survey.

This study will measure four types of things: the type of strategies that are typically used by your organization, the level at which your organization demonstrates activities and strategies that lead to IT Alignment, the extent to which your organization achieves performance outcomes, and professional information about you and your organization.

Because the survey questions will address your perceptions of your organization, you may feel uncomfortable that the Community Foundation or other nonprofit stakeholders will read the survey results and view your perceptions negatively. To alleviate this concern, all survey responses will be collected, stored and analyzed confidentially by the primary investigator. No one other than the investigator, Survey Monkey, and the individual who takes the survey...
will have access to identifiable information.

People who participate in this study will help nonprofit organizations understand what it means to align technology with their mission, they will help nonprofit technical assistance groups provide better training and technical assistance, and they will help their organizations maximize its planning and use of technology to meet its mission.

There are no costs associated with participating in this study. There is no monetary compensation for participating in this study. When you do complete the survey, you will be provided with a Custom Technology Alignment Maturity Report and Technology Strategy Guide that you can use to continue your efforts to align technology with your mission.

The principle investigator and Survey Monkey administrators will have access to the list of individuals invited via e-mail to participate in the study, and collected individual survey response data. While reasonable and appropriate safeguards have been used in the creation of the web-based survey to maximize the confidentiality and security of your responses, when using information technology, it is never possible to guarantee complete privacy. Survey Monkey’s privacy statement states “we will not use the information collected from surveys in any way, shape or form.” Survey Monkey will keep electronic data stored on servers kept in a locked cage requiring biometric recognition for entry, maintain surveillance equipment on the server site and staff the site 24/7. The Survey Monkey Security Policy can be reviewed at this link: http://www.surveymonkey.com/mp/policy/security/. Paper copies and a USB drive of all data will be kept in a locked filing cabinet in the School of Public Affairs & Administration Office at Western Michigan University for 3 years following the completion of this study. The public will have access to a combined data set of anonymous survey responses, which will be the only form of data that will be used to report findings beyond the provision of your Custom Technology Alignment Maturity report. If any of the information collected is submitted for use in a publication or presentation, you will be able to review the data set and comment before it is submitted. Your name, e-mail address and organization will not be connected to any publications or presentations made by the research team.

You can choose to stop participating in the study at any time for any reason by closing your Internet browser window or clicking “exit this survey” at the top right corner of your screen. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either professionally or personally if you choose to withdraw from this study. The investigators can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact either of the co-investigators, Kelly Trusty, at (260)243-0261, kelly.a.trusty@wmich.edu; or Barbara Liggett, Dissertation Committee Chair, at 269-387-8943, barbara.a.liggett@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.
By accessing the Survey Monkey Survey and clicking “NEXT”, you are agreeing that you are 18 years of age, you have read this informed consent document, the risks and benefits have been explained to you, and you agree to take part in this study.
April 23, 2013

[Redacted]

Dear [Redacted],

I am writing to ask for your participation in a survey that I am conducting for my Ph.D. Dissertation in the School of Public Affairs and Administration at Western Michigan University. I would be very grateful if you could complete the survey by May 5, 2013.

I would like nonprofit and community agency leaders, like you, whose organizations are grantees of the Fulton County Community Foundation, to reflect on and share information about your organizational strategies, technology use, and organizational performance that leads to outcomes - positive changes in the individuals, groups, and communities you serve. Your organization was selected to participate because it is listed as a grantee on your local community foundation's website or in one of its publications.

Your participation adds value:
Your responses to this survey are very important and will help community-serving agencies understand what it means to align technology with their mission. Your responses may also help nonprofits receive better technology training and technical assistance.

Benefits to you:
To thank you for participating, you will receive a Custom Technology Alignment Report, which will provide a summary of your organization’s responses and how well technology appears to be aligned with your mission. You will also receive a Technology Strategy Guide, which contains suggestions of cutting-edge strategies that can help Liberty Township Volunteer Fire Department use technology to better meet its mission. The report is available only to organizations like yours that are invited to participate.

Participation is voluntary & confidential:
All of your individual responses will be kept completely confidential, and only your organization will receive your Custom Technology Alignment Maturity Report summary scores. Only the researchers involved will have access to your organization’s survey responses and contact information. Before you begin the survey, please read the Informed Consent document contained on pages 2-3 of the survey packet. By completing and returning the survey, you are agreeing that you are over 18 years of age, you have read this informed consent document and you agree to take part in this study.

About the survey:
The survey should take you about 45 minutes to complete. (Like you, I am also a nonprofit professional, having spent nearly 20 years working in communities. I realize this is a significant time commitment and your time is very limited. Your insight and time will add great value to our knowledge base.) You may either complete the paper copy of the survey and send it back to me in the

2970 W 340 N, Angola, IN 46703
KELLY.A.TRUSTY@WMICH.EDU
260-243-0261

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enclosed, pre-addressed envelope, OR you may complete the survey online using the link below.

Survey Link: https://www.surveymonkey.com/s/SIMOsurvey  Respondent Number: [ ]

Thank you!
Thank you in advance for completing this survey. It is only with the help of nonprofit professionals like you that we can provide new knowledge to guide nonprofit organizations in using technology best practices to meet their missions. If you have any questions or comments, please feel free to contact me at kelly.a.trusty@wmich.edu or 260-243-0261.

With Appreciation and Best Regards,

Kelly Trusty
APPENDIX G

Project Introduction E-Mail to Community Foundation Directors
Please help with nonprofit Ph.D. dissertation research, which may help your grantees better harness the power of technology. Time sensitive task.

Dear xxxxxxx:

I am writing to ask for your help in gathering information about the ways nonprofit organizations (NPOs) use technology to achieve their missions, which is the focus of my doctoral dissertation.

I wish to involve grantee organizations of 48 randomly-selected Indiana Community Foundations (approx. 3,300 organizations) in an online survey that will measure the alignment of their technology use with their missions and their outcomes. I would be very appreciative if you could help connect me with your grantees.

I would like you to provide me with a list of your current (2010-2012) grantees’ contact information, then I would like you to let your grantees know, via a bulk e-mail, that a technology survey will be sent to them in the near future. I believe if your grantees hear from you first, it will legitimize the project and encourage them to participate. A few days later, I will personally send each of them the survey link and more information about the project. Your list will not be distributed, and it will be kept completely confidential.

When your grantees complete the survey, they will each receive a custom technology alignment report of their own data, as well as a resource guide that provides strategies for effectively aligning technology in ways that will help them better meet their missions. This report is only available to NPOs that complete the survey. It is my way of saying thank you for providing information for my study.

I have attached information about the study, as well as a sample “pre-notice” message, to this email. It would be terrific if you or your Grants/Program Director could review the information, then do two things:

1. Send me an Excel or Microsoft Word list of your 2010-2012 grantee organizations, including CEO name, e-mail address and phone number by next Tuesday, October 9.

2. Send an email message to your grantees by next Wednesday, October 10, using the attached sample language (feel free to customize), and copy me on your message, kelly.a.trusty@wmich.edu.

If you have questions about this request or need more information, please feel free to email
or call me at 260-243-0261. If you cannot help at this time, please let me know that, as well.

So that you know a bit about me, I have lived and worked throughout Indiana as an executive director, grant writer, program director, volunteer, evaluator, and outside consultant for the past two decades. Being in the sector as a fellow practitioner, I know your time is valuable, and I truly appreciate your willingness to invest in this project.

Thank you in advance for your help, which will help our entire sector learn and grow.

With Best Regards,

Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs and Administration
Student Address: 2970 W 340 N, Angola, IN 46703
SPAA School Address: 220 E Walwood Hall, Kalamazoo, MI 49008-5440
Phone: 260-243-0261
October 1, 2012

Dear Community Foundation Grantee:

I am writing to share an exciting opportunity with you, one in which you can learn more about how to align technology with your work in ways that will help you meet your organizational mission.

This opportunity comes in the form of a study being done by a researcher from the School of Public Affairs and Administration at Western Michigan University. The investigator, Kelly Trusty, is part of our Indiana nonprofit community – she has lived and served in West Central and Northeast Indiana for nearly 20 years.

As you help the nonprofit sector understand technology/mission alignment with your responses to a Survey Monkey survey, you will also receive a valuable benefit. Once you complete the survey, you will be sent a customized report of the level at which your organization’s technology is aligned with its mission, as well as a resource guide of strategies that can help you use technology even more effectively than you already do. There are no strings attached. Your participation is completely voluntary.

I think all of us in the nonprofit sector struggle with the balance between doing our important work in communities and finding ways to make technology work for us. This project is valuable to us because it can help organizations get better at doing both: using technology and meeting our mission.

In a few days, you will be receiving an email invitation from Kelly Trusty to take the survey. I hope you will find time in your busy schedule to help the nonprofit sector grow in its ability to harness the power of technology.

Thank you in advance for your participation, and keep up the GOOD WORK!
Sincerely,
The President or CEO
The Community Foundation
Western Michigan University  
School of Public Affairs and Administration  
Doctoral Dissertation Overview  
Kelly A. Trusty, Ph. D. Candidate belief

THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT  
AND NONPROFIT ORGANIZATIONAL OUTCOMES

The Problem Statement: A variety of technology tools are available for organizations to use to increase their efficiency and effectiveness. Businesses seem to adopt and implement these tools seamlessly, in ways that promote success. A relatively large percentage of nonprofit organizations, particularly small ones, struggle with aligning the potential power of technology with their mission-focused efforts. Some NPOs see technology as simply a back-room tool, while others are either distracted or overwhelmed by the constant emergence of new technology and fail to harness it effectively. How can we help NPOs better use technology to achieve their goals and meet their missions?

The Research Question: Can a theoretical model and practitioner tool be created to measure IT alignment in nonprofits and help them mature in their alignment of organizational strategy, technology use, focus on mission, and achievement of outcomes?

The Investigation: Grantees of Indiana Community Foundations will be asked to complete a 45-minute online survey that is based on the proposed Nonprofit Strategy, IT, Mission, and Outcome Alignment Model. This model is an adaptation of several models that have been established and used in the business sector to measure organizations' IT alignment and facilitate increased alignment in order to achieve greater outcomes. We often hear, "nonprofits should run like a business", but analysis of existing models shows that NPOs are characteristically different from businesses, therefore such a model and survey assessment instrument should reflect these differences in character.

Organizations that have a current grantee relationship will their local Community Foundation will be selected to take the online survey. Of the 94 Community Foundations in Indiana, 45 will be randomly selected and asked to provide contact information for their current grantees so that I can invite them to take the survey.

Value of the Work: This investigation will result in a validated theoretical model that explains how organizations’ strategy type and a variety of identified organizational factors contribute to the alignment of technology with an organization’s mission. A practitioner tool based on the model will be made available to nonprofits and technical assistance providers to assess IT/mission alignment and prescribe strategies nonprofit organizations can use to increase their IT/mission alignment and organizational outcomes.

Benefit to Participating Agencies: Every nonprofit organization that completes the survey will receive a custom report of their IT/Mission alignment levels and a Technology Strategy resource guide they can use to increase their level of alignment.

About the Investigator: Kelly Trusty is an Assistant Professor of Leadership and Nonprofit Organizational Studies at Trine University in Angola, Indiana. Her research and teaching agenda is supported by nearly two decades of executive management and consultation with nonprofit, educational, and governmental organizations in the areas of strategic planning and sustainability.

Primary Investigator Contact Information: Kelly Trusty, Kelly.a.trusty@wmich.edu; 260-243-0261
Figure 2: The Nonprofit Strategy, IT, Mission and Outcome (SIMO) Alignment Model


The Relationships Between Strategy, IT/Mission Alignment
and Nonprofit Organizational Outcomes Study

Role of Community Foundations

Community Foundations have a unique relationship with their grantees in which they can communicate easily with them and share opportunities for growth and improvement.

The investigation hopes to capitalize on this relationship in order to add value and new knowledge to the nonprofit sector by engaging Community Foundation CEOs in two ways:

1) Having CEOs providing Advance Notice via e-mail to their grantees of the opportunity to learn about IT/Mission Alignment, share information about their organizations, and receive a Custom Report of IT/Mission Alignment.

2) Allowing the Investigator access to the contact list of all current (2011 or later) Community Foundation grantees in order to invite them to take the survey.

The Investigator is dedicated to the utmost quality in implementing this research study:

- Conducting research in an ethical and forthright manner
- Maintaining confidentiality of all participants and participant data
- Minimizing disruption during data collection
- Providing value and new knowledge to the nonprofit community
- Strengthening the capacity of nonprofit organizations

This investigation has been approved by the Human Subjects Institutional Review Board and School of Public Affairs and Administration of Western Michigan University. Community Foundations are welcome to contact Barbara Liggett, the Dissertation Committee Chair for this project with questions, comments, or concerns, Barbara.liggett@wmich.edu; 269-387-8943. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.
Dear Community Foundation Grantee:

I am writing to share an exciting opportunity with you, one in which you can learn more about how to align technology with your work in ways that will help you meet your organizational mission.

This opportunity comes in the form of a study being done by a researcher from the School of Public Affairs and Administration at Western Michigan University. The investigator, Kelly Trusty, is part of our Indiana nonprofit community – she has lived and served in West Central and Northeast Indiana for nearly 20 years.

As you help the nonprofit sector understand technology/mission alignment with your responses to a Survey Monkey survey, you will also receive a valuable benefit. Once you complete the survey, you will be sent a customized report of the level at which your organization’s technology is aligned with its mission, as well as a resource guide of strategies that can help you use technology even more effectively than you already do. There are no strings attached. Your participation is completely voluntary.

I think all of us in the nonprofit sector struggle with the balance between doing our important work in communities and finding ways to make technology work for us. This project is valuable to us because it can help organizations get better at doing both: using technology and meeting our mission.

In a few days, you will be receiving an email invitation from Kelly Trusty to take the survey. I hope you will find time in your busy schedule to help the nonprofit sector grow in its ability to harness the power of technology.

Thank you in advance for your participation, and keep up the GOOD WORK!

Sincerely,

The President, CEO or Program Director
The Community Foundation
Dear Kelly,

I am writing to ask for your participation in a survey that I am conducting for my Ph.D. Dissertation in School of Public Affairs and Administration at Western Michigan University.

I would like nonprofit professionals, like you, whose organizations are grantees of the _________ Community Foundation, to reflect on and share information about your organizational strategies, technology use, and organizational performance that leads to outcomes - positive changes in the individuals, groups, and communities you serve.

Your participation adds value:
Your responses to this survey are very important and will help nonprofit organizations understand what it means to align technology with their mission. Your responses will help nonprofits receive better technology training and technical assistance, and your responses can help your own organization maximize its planning and use of technology to meet its mission.

(Pending Endorsement from a key benefactor to all Indiana Community Foundations will be inserted here)

Benefits to you:
To thank you for your participation, you will receive a Custom Technology Alignment Report, which will provide a summary of your organization’s use of technology and how well it appears to be aligned with your mission. You will also receive a Technology Strategy Guide, which contains suggestions of cutting-edge strategies that can help you use technology to better meet your mission. The custom report is available only to organizations like yours that are invited to participate.

Participation is voluntary & confidential:
All of your individual responses will be kept completely confidential, and only your organization will receive your Custom Technology Alignment Maturity Report summary scores. Only the researchers involved will have access to your organization’s survey responses and contact information.

Before you begin the survey, please open and read the Informed Consent document attached to this email. By accessing the Survey Monkey survey using the link in this email, and clicking NEXT on the survey welcome screen, you are agreeing that you are over 18 years of age, you have read this informed consent document, the risks and benefits have been explained to you, and you agree to take part in this study.

About the survey:
The survey should take you about 45 minutes to complete. Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser).

Survey Link: https://www.surveymonkey.com/s.aspx?sm=YSV5C_2bvGyYrM9R_2f4kQywG3A_3d_3d
Thank you!
Thank you in advance for completing this survey. It is only with the help of nonprofit professionals like you that we can provide new knowledge to guide nonprofit organizations in using technology best practices to meet their missions.

Should you have any questions or comments, please feel free to contact me at kelly.a.trusty@wmich.edu or 260-243-0261, or my co-investigator, Barbara Liggett, at barbara.liggett@wmich.edu, 369-387-8943.

Most Sincerely,
Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs & Administration

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.
https://www.surveymonkey.com/optout.aspx?sm=YSV5C_2bvGYrM9R_2f4kQYwG3A_3d_3d

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Western Michigan University
School of Public Affairs & Administration
Informed Consent Document

Principal Investigator: Kelly Trusty

Title of Study: THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES

You are invited to participate in a research project titled “THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES”. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project.

In this study, we are trying to find out if there are relationships in nonprofit organizations (NPOs) between the strategic and organizational factors that enable and inhibit IT alignment, which is the level at which an organization uses technology strategies and tools in ways that helps it meet its mission and goals.

You may participate in this study if you are the person who has primary responsibility for making technology decisions in your organization. You were selected to participate in this study because you are a grantee of one of 45 Indiana Community Foundations randomly selected for inclusion in the study. If you are not the person in charge of technology for your organization, please forward this e-mail invitation to the individual in your coalition who meets this criterion.

This study will take place entirely online, where you will complete a 86-item Survey Monkey survey. It should take you about 45 minutes to complete the survey, which is all that is required to participate in the study.

If you choose to participate in this study after reading this document, you should access the Survey Monkey
survey using the unique link included in this email. Once you read the Welcome and directions, click NEXT to continue to the next page. By clicking NEXT, you will signify that you have read and understood this Informed Consent document.

You should use the buttons, keyboard and navigation tools on the page to complete the survey, then click NEXT at the end of the survey to submit your responses. You will be asked to close your browser after completing the survey.

This study will measure four types of things: the type of strategies that are typically used by your organization, the level at which your organization demonstrates activities and strategies that lead to IT Alignment, the extent to which your organization achieves performance outcomes, and professional information about you and your organization.

Because the survey questions will address your perceptions of your organization, you may feel uncomfortable that the Community Foundation or other nonprofit stakeholders will read the survey results and view your perceptions negatively. To alleviate this concern, all survey responses will be collected, stored and analyzed confidentially by the primary investigator. No one other than the investigator, Survey Monkey, and the individual who takes the survey will have access to identifiable information.

People who participate in this study will help nonprofit organizations understand what it means to align technology with their mission, they will help nonprofit technical assistance groups provide better training and technical assistance, and they will help their organizations maximize its planning and use of technology to meet its mission.

There are no costs associated with participating in this study. There is no monetary compensation for participating in this study. When you do complete the survey, you will be provided with a Custom Technology Alignment Maturity Report and Technology Strategy Guide that you can use to continue your efforts to align technology with your mission.

The principle investigator and Survey Monkey administrators will have access to the list of individuals invited via e-mail to participate in the study, and collected individual survey response data. While reasonable and appropriate safeguards have been used in the creation of the web-based survey to maximize the confidentiality and security of your responses, when using information technology, it is never possible to guarantee complete privacy. Survey Monkey’s privacy statement states “we will not use the information collected from surveys in any way, shape or form.” Survey Monkey will keep electronic data stored on servers kept in a locked cage requiring biometric recognition for entry, maintain surveillance equipment on the server site and staff the site 24/7. The Survey Monkey Security Policy can be reviewed at this link: http://www.surveymonkey.com/mp/policy/security/. Paper copies and a USB drive of all data will be kept in a locked filing cabinet in the School of Public Affairs & Administration Office at Western Michigan University for 3 years following the completion of this study. The public will have access to a combined data set of anonymous survey responses, which will be the only form of data that will be used to report findings beyond the provision of your Custom Technology Alignment Maturity report. If any of the information collected is submitted for use in a publication or presentation, you will be able to review the data set and comment before it is submitted. Your name, e-mail address and organization will not be connected to any publications or presentations made by the research team.

You can choose to stop participating in the study at any time for any reason by closing your Internet browser window or clicking “exit this survey” at the top right corner of your screen. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either professionally or personally if you choose to withdraw from this study. The investigators can also decide to stop your participation in the study without your consent.
Should you have any questions prior to or during the study, you can contact either of the co-investigators, Kelly Trusty, at (260)243-0261, kelly.a.trusty@wmich.edu; or Barbara Liggett, Dissertation Committee Chair, at 269-387-8943, barbara.a.liggett@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

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By accessing the Survey Monkey Survey and clicking “NEXT”, you are agreeing that you are 18 years of age, you have read this informed consent document, the risks and benefits have been explained to you, and you agree to take part in this study.
SIMO Survey for Distribution

Please See Appendix C
APPENDIX H

Grantee Pre-Notice Correspondence
EXAMPLE OF PRENOTICE E-MAIL
FOR COMMUNITY FOUNDATION CEOs TO SEND TO GRANTEEES

It would be best if this notice came from your CEO or Board President
(You are welcome to copy and paste the text below into your email message.)

October 1, 2012

Dear Community Foundation Grantee:

I am writing to share an exciting opportunity with you, one in which you can learn more about how to align technology with your work in ways that will help you meet your organizational mission.

This opportunity comes in the form of a study being done by a researcher from the School of Public Affairs and Administration at Western Michigan University. The investigator, Kelly Trusty, is part of our Indiana nonprofit community – she has lived and served in West Central and Northeast Indiana for nearly 20 years.

As you help the nonprofit sector understand technology/mission alignment with your responses to a Survey Monkey survey, you will also receive a valuable benefit. Once you complete the survey, you will be sent a customized report of the level at which your organization’s technology is aligned with its mission, as well as a resource guide of strategies that can help you use technology even more effectively than you already do. There are no strings attached. Your participation is completely voluntary.

I think all of us in the nonprofit sector struggle with the balance between doing our important work in communities and finding ways to make technology work for us. This project is valuable to us because it can help organizations get better at doing both: using technology and meeting our mission.

In a few days, you will be receiving an email invitation from Kelly Trusty to take the survey. I hope you will find time in your busy schedule to help the nonprofit sector grow in its ability to harness the power of technology.

Thank you in advance for your participation, and keep up the GOOD WORK!
Sincerely,
The President or CEO
The Community Foundation
April 10, 2013

Name
Organization
Address
City, State Zip

Dear:

I am writing to ask for your help with an important study being conducted to understand the ways nonprofit organizations choose and use technology to meet their missions. This research is the foundation of my doctoral dissertation in Public Affairs and Administration, which I am pursuing through Western Michigan University. The results will help all Indiana nonprofits learn how to better use technology to achieve positive outcomes.

You have been selected to participate in this study because your organization, , was listed on the Foundation’s website or in its electronic publications as having received a grant from the Foundation. In the next few days you will receive a request to participate in this project by answering questions about your organization, its use of technology, and its achievement of outcomes.

I would like to do everything I can to make it easy and advantageous for you to participate in this project. First, I am writing in advance because many people like to know ahead of time that they will be asked to fill out a questionnaire. Second, I will provide you with paper copy of the questionnaire AND a link to an electronic version so you can choose to complete it either way. Third, after you complete the survey, I will use your answers to create a custom technology alignment report and tech manual for your organization. I will send that to you via email as a thank you for participating.

I hope you will take 30-45 minutes of your valuable time to help me. Most of all, I hope that the questionnaire will be a positive opportunity for you to think about your organization and how it uses technology.

Best Regards,

Kelly A. Trusty
Ph.D. Candidate
APPENDIX I

Grantee Reminders to Participate in SIMO Study
Dear Kelly,

A few weeks ago you received a request to complete a Nonprofit Technology Survey. Your responses to this survey are important and will help all Indiana nonprofit organizations grow in their effective use of technology. I hope you will find time to complete it. I have included the original request below, but I will also provide the survey link for you again here so it is easy for you to access:


Please click the link to go to the survey website or copy and paste the link into your browser.

Your response is very valuable to nonprofits, as well as to you, because you will receive a Custom Technology Alignment Report that will provide you with new ideas of how to use technology to meet your mission.

Thank you in advance for investing your time to complete the survey at your earliest convenience. I hope to complete data collection by May 4.

Sincerely,

Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs & Administration

-----------Original Message-----------
Dear Kelly,

I am writing to ask for your participation in a survey that I am conducting for my Ph.D. Dissertation in School of Public Affairs and Administration at Western Michigan University. I would be very grateful if you could complete the survey by Friday, October 13.

I would like nonprofit professionals, like you, whose organizations are grantees of the Sample Community Foundation, to reflect on and share information about your organizational strategies, technology use, and organizational performance that leads to outcomes - positive changes in the individuals, groups, and communities you serve.

Your participation adds value:
Your responses to this survey are very important and will help nonprofit organizations understand what it means to align technology with their mission. Your responses may also help nonprofits receive better technology training and technical assistance.

Benefits to you:
To thank you for your participation, you will receive a Custom Technology Alignment Report, which will provide a summary of your organization’s use of technology and how well it appears to be aligned with your mission. You will also receive a Technology Strategy Guide, which contains suggestions of cutting-edge strategies that can help Sample Organization use technology to better meet its mission. The custom report is available only to organizations like yours that are invited to participate.

Participation is voluntary & confidential:
All of your individual responses will be kept completely confidential, and only your organization will receive your Custom Technology Alignment Maturity Report summary scores. Only the researchers involved will have access to your organization’s survey responses and contact information.

Before you begin the survey, please read the Informed Consent document at the end of this message. By accessing the Survey Monkey survey using the link in this email, and clicking NEXT on the survey welcome screen, you are agreeing that you are over 18 years of age, you have read this informed consent document and you agree to take part in this study.

About the survey:
The survey should take you about 45 minutes to complete. Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser).


Thank you!
Thank you in advance for completing this survey. It is only with the help of nonprofit professionals like you that we can provide new knowledge to guide nonprofit organizations in
using technology best practices to meet their missions.

If you have any questions or comments, please feel free to contact me at kelly.a.trusty@wmich.edu or 260-243-0261.

With Appreciation and Best Regards,

Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs & Administration

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list. https://www.surveymonkey.com/optout.aspx?sm=UpF3X79swzmWPRDjzpzdQ_3d_3d

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Western Michigan University
School of Public Affairs & Administration
Informed Consent Document

Principal Investigator: Kelly Trusty

Title of Study: THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES

You are invited to participate in a research project titled “THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES”. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project.

In this study, we are trying to find out if there are relationships in nonprofit organizations (NPOs) between the strategic and organizational factors that enable and inhibit IT alignment, which is the level at which an organization uses technology strategies and tools in ways that helps it meet its mission and goals.

You may participate in this study if you are the person who has primary responsibility for making technology decisions in your organization. You were selected to participate in this study because you are a grantee of one of 45 Indiana Community Foundations randomly selected for inclusion in the study. If you are not the person in charge of technology for your organization, please forward this e-mail invitation to the individual in your coalition who
meets this criterion.

This study will take place entirely online, where you will complete an 86-item Survey Monkey survey. It should take you about 45 minutes to complete the survey, which is all that is required to participate in the study.

If you choose to participate in this study after reading this document, you should access the Survey Monkey survey using the unique link included in this email. Once you read the Welcome and directions, click NEXT to continue to the next page. By clicking NEXT, you will signify that you have read and understood this Informed Consent document.

You should use the buttons, keyboard and navigation tools on the page to complete the survey, then click NEXT at the end of the survey to submit your responses. You will be asked to close your browser after completing the survey.

This study will measure four types of things: the type of strategies that are typically used by your organization, the level at which your organization demonstrates activities and strategies that lead to IT Alignment, the extent to which your organization achieves performance outcomes, and professional information about you and your organization.

Because the survey questions will address your perceptions of your organization, you may feel uncomfortable that the Community Foundation or other nonprofit stakeholders will read the survey results and view your perceptions negatively. To alleviate this concern, all survey responses will be collected, stored and analyzed confidentially by the primary investigator. No one other than the investigator, Survey Monkey, and the individual who takes the survey will have access to identifiable information.

People who participate in this study will help nonprofit organizations understand what it means to align technology with their mission, they will help nonprofit technical assistance groups provide better training and technical assistance, and they will help their organizations maximize its planning and use of technology to meet its mission.

There are no costs associated with participating in this study. There is no monetary compensation for participating in this study. When you do complete the survey, you will be provided with a Custom Technology Alignment Maturity Report and Technology Strategy Guide that you can use to continue your efforts to align technology with your mission.

The principle investigator and Survey Monkey administrators will have access to the list of individuals invited via e-mail to participate in the study, and collected individual survey response data. While reasonable and appropriate safeguards have been used in the creation of the web-based survey to maximize the confidentiality and security of your responses, when using information technology, it is never possible to guarantee complete privacy. Survey Monkey’s privacy statement states “we will not use the information collected from surveys in any way, shape or form.” Survey Monkey will keep electronic data stored on servers kept in a locked cage requiring biometric recognition for entry, maintain surveillance.
equipment on the server site and staff the site 24/7. The Survey Monkey Security Policy can be reviewed at this link: http://www.surveymonkey.com/mp/policy/security/. Paper copies and a USB drive of all data will be kept in a locked filing cabinet in the School of Public Affairs & Administration Office at Western Michigan University for 3 years following the completion of this study. The public will have access to a combined data set of anonymous survey responses, which will be the only form of data that will be used to report findings beyond the provision of your Custom Technology Alignment Maturity report. If any of the information collected is submitted for use in a publication or presentation, you will be able to review the data set and comment before it is submitted. Your name, e-mail address and organization will not be connected to any publications or presentations made by the research team.

You can choose to stop participating in the study at any time for any reason by closing your Internet browser window or clicking “exit this survey” at the top right corner of your screen. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either professionally or personally if you choose to withdraw from this study. The investigators can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact either of the co-investigators, Kelly Trusty, at(260)243-0261, kelly.a.trusty@wmich.edu; or Barbara Liggett, Dissertation Committee Chair, at 269-387-8943, barbara.a.liggett@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

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By accessing the Survey Monkey Survey and clicking “NEXT”, you are agreeing that you are 18 years of age, you have read this informed consent document, the risks and benefits have been explained to you, and you agree to take part in this study.
Nonprofit Technology Survey - One Last Chance to Receive your Custom Technology Report

From: kelly.a.trusty@wmich.edu via surveymonkey.com
<Sender: survey-noreply@smo.surveymonkey.com>
Subject: Nonprofit Technology Survey - One Last Chance to Receive your Custom Technology Report
To: kelly a trusty <kelly.a.trusty@wmich.edu>
Reply To: kelly a trusty <kelly.a.trusty@wmich.edu>

Dear Kelly,

Several weeks ago you received a request to complete a Nonprofit Technology Survey. If you are still interested in participating in the survey and receiving your Custom Technology Alignment Report, there is still time to do so! You are welcome and encouraged to access the survey using this link:


Please click the link to go to the survey website or copy and paste the link into your browser.

If there is person in your organization who would be a more appropriate respondent, please send me their name and email address. Please do not forward this email to them - it is uniquely linked to your email address. Your response to this survey is important and will help all Indiana nonprofit organizations grow in their effective use of technology.

Thank you in advance for investing your time to complete the survey by the end of next week (May 17).

Sincerely,

Kelly Trusty
Ph.D. Candidate
Western Michigan University
School of Public Affairs & Administration
Please note: If you do not wish to receive further emails related to this survey, please click the link below, and you will be automatically removed from our mailing list.

----------------Original Message---------------

Dear Kelly,

I am writing to ask for your participation in a survey that I am conducting for my Ph.D. Dissertation in School of Public Affairs and Administration at Western Michigan University. I would be very grateful if you could complete the survey by April 10.

I would like nonprofit professionals, like you, whose organizations are grantees of the Sample Community Foundation, to reflect on and share information about your organizational strategies, technology use, and organizational performance that leads to outcomes - positive changes in the individuals, groups, and communities you serve.

Your participation adds value:
Your responses to this survey are very important and will help nonprofit organizations understand what it means to align technology with their mission. Your responses may also help nonprofits receive better technology training and technical assistance.

Benefits to you:
To thank you for your participation, you will receive a Custom Technology Alignment Report, which will provide a summary of your organization’s use of technology and how well it appears to be aligned with your mission. You will also receive a Technology Strategy Guide, which contains suggestions of cutting-edge strategies that can help Sample Organization use technology to better meet its mission. The custom report is available only to organizations like yours that are invited to participate.

Participation is voluntary & confidential:
All of your individual responses will be kept completely confidential, and only your organization will receive your Custom Technology Alignment Maturity Report summary scores. Only the researchers involved will have access to your organization’s survey responses and contact information.

Before you begin the survey, please read the Informed Consent document at the end of this message. By accessing the Survey Monkey survey using the link in this email, and clicking NEXT on the survey welcome screen, you are agreeing that you are over 18 years of age, you have read this informed consent document and you agree to take part in this study.

About the survey:
The survey should take you about 45 minutes to complete. Please click on the link below to go to the survey website (or copy and paste the survey link into your Internet browser).
**Survey Link:** https://www.surveymonkey.com/s.aspx?sm=UpF3X79swzmWPRDJzpzsQ_3d_3d

**Thank you!**
Thank you in advance for completing this survey. It is only with the help of nonprofit professionals like you that we can provide new knowledge to guide nonprofit organizations in using technology best practices to meet their missions.

If you have any questions or comments, please feel free to contact me at kelly.a.trusty@wmich.edu or 260-243-0261.

With Appreciation and Best Regards,

Kelly Trusty  
Ph.D. Candidate  
Western Michigan University  
School of Public Affairs & Administration

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list. https://www.surveymonkey.com/optout.aspx?sm=UpF3X79swzmWPRDJzpzsQ_3d_3d

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Western Michigan University  
School of Public Affairs & Administration  
Informed Consent Document

Principal Investigator: Kelly Trusty

**Title of Study:** THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES

You are invited to participate in a research project titled “THE RELATIONSHIP BETWEEN STRATEGY, IT/MISSION ALIGNMENT, AND NONPROFIT ORGANIZATIONAL OUTCOMES”. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project.

In this study, we are trying to find out if there are relationships in nonprofit organizations (NPOs) between the strategic and organizational factors that enable and inhibit IT alignment, which is the level at which an organization uses technology strategies and tools in ways that
helps it meet its mission and goals.

You may participate in this study if you are the person who has primary responsibility for making technology decisions in your organization. You were selected to participate in this study because you are a grantee of one of 45 Indiana Community Foundations randomly selected for inclusion in the study. If you are not the person in charge of technology for your organization, please forward this e-mail invitation to the individual in your coalition who meets this criterion.

This study will take place entirely online, where you will complete a 86-item Survey Monkey survey. It should take you about 45 minutes to complete the survey, which is all that is required to participate in the study.

If you choose to participate in this study after reading this document, you should access the Survey Monkey survey using the unique link included in this email. Once you read the Welcome and directions, click NEXT to continue to the next page. By clicking NEXT, you will signify that you have read and understood this Informed Consent document.

You should use the buttons, keyboard and navigation tools on the page to complete the survey, then click NEXT at the end of the survey to submit your responses. You will be asked to close your browser after completing the survey.

This study will measure four types of things: the type of strategies that are typically used by your organization, the level at which your organization demonstrates activities and strategies that lead to IT Alignment, the extent to which your organization achieves performance outcomes, and professional information about you and your organization.

Because the survey questions will address your perceptions of your organization, you may feel uncomfortable that the Community Foundation or other nonprofit stakeholders will read the survey results and view your perceptions negatively. To alleviate this concern, all survey responses will be collected, stored and analyzed confidentially by the primary investigator. No one other than the investigator, Survey Monkey, and the individual who takes the survey will have access to identifiable information.

People who participate in this study will help nonprofit organizations understand what it means to align technology with their mission, they will help nonprofit technical assistance groups provide better training and technical assistance, and they will help their organizations maximize its planning and use of technology to meet its mission.

There are no costs associated with participating in this study. There is no monetary compensation for participating in this study. When you do complete the survey, you will be provided with a Custom Technology Alignment Maturity Report and Technology Strategy Guide that you can use to continue your efforts to align technology with your mission.

The principle investigator and Survey Monkey administrators will have access to the list of
individuals invited via e-mail to participate in the study, and collected individual survey
response data. While reasonable and appropriate safeguards have been used in the creation
of the web-based survey to maximize the confidentiality and security of your responses,
when using information technology, it is never possible to guarantee complete privacy.
Survey Monkey’s privacy statement states “we will not use the information collected from
surveys in any way, shape or form.” Survey Monkey will keep electronic data stored on
servers kept in a locked cage requiring biometric recognition for entry, maintain surveillance
equipment on the server site and staff the site 24/7. The Survey Monkey Security Policy can
be reviewed at this link: http://www.surveymonkey.com/mp/policy/security/. Paper copies
and a USB drive of all data will be kept in a locked filing cabinet in the School of Public
Affairs & Administration Office at Western Michigan University for 3 years following the
completion of this study. The public will have access to a combined data set of anonymous
survey responses, which will be the only form of data that will be used to report findings
beyond the provision of your Custom Technology Alignment Maturity report. If any of the
information collected is submitted for use in a publication or presentation, you will be able to
review the data set and comment before it is submitted. Your name, e-mail address and
organization will not be connected to any publications or presentations made by the research
team.

You can choose to stop participating in the study at any time for any reason by closing your
Internet browser window or clicking “exit this survey” at the top right corner of your screen.
You will not suffer any prejudice or penalty by your decision to stop your participation. You
will experience NO consequences either professionally or personally if you choose to
withdraw from this study. The investigators can also decide to stop your participation in the
study without your consent.

Should you have any questions prior to or during the study, you can contact either of the
co-investigators, Kelly Trusty, at (260)243-0261, kelly.a.trusty@wmich.edu; or Barbara
Liggett, Dissertation Committee Chair, at 269-387-8943, barbara.a.liggett@wmich.edu. You
may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or
the Vice President for Research at 269-387-8298 if questions arise during the course of the
study.

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By accessing the Survey Monkey Survey and clicking “NEXT”, you are agreeing that you are
18 years of age, you have read this informed consent document, the risks and benefits have
been explained to you, and you agree to take part in this study.
POSTAL MAIL REMINDER POSTCARD TO PARTICIPATE IN SIMO STUDY

Dear <<First Name>>:

A few weeks ago you should have received a request in the mail to complete a Nonprofit Technology Mission/Alignment survey. During this busy, beautiful time of year, I know you may not have had time to complete it. It would be terrific if you could find the time to complete it in the near future, preferably this week. You may still complete the paper copy I sent, or you may complete the survey online.

Here is the link to the online version of the survey:

https://www.surveymonkey.com/s/SIMOsurvey

If using the online survey, please enter your Respondent Number: <<xxxx>>

Thank you for your help with this project, which has the potential to help all nonprofit organizations improve in their use of technology.

Sincerely,

Kelly Trusty
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APPENDIX J

Sample Custom Alignment Maturity Report and Technology Guide
The SIMO Project: Investigating links between Strategy, Technology Alignment, Mission & Outcomes

To help nonprofit organizations accomplish their good work, better

Technology/Mission Alignment Maturity Survey Summary Report and SIMO Toolbox

for

Sample Organization
Sample County, Indiana

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“The goal of technology/mission alignment is to use technology to support and enhance the work that you do to meet your mission. In other words, alignment will help you select and implement technology to achieve your mission and to avoid the trap of implementing the latest technology because it’s shiny, or because someone told you to.”


Managing Technology to Meet Your Mission

1
WHAT IS SIMO?

SIMO represents a model created to explain the relationships found in nonprofit organizations between the organizations’ overall strategy typology, their level of information technology (IT) alignment maturity (also called technology alignment maturity), their mission, and their outcomes or performance indicators. While the model took shape as I worked toward my Ph.D. in Public Administration, its essence has been building for the twenty years I have been working in and with nonprofit organizations.

As the director of a grassroots coalition, I was asked by funders and community stakeholders, and I asked myself constantly, “How do we know if we are making a difference?” All shapes and sizes of organizations I’ve consulted with since then hear that very same question as I help them create strategic plans and programs to meet community needs. By learning about outcome-driven programming, we’ve all found that we can answer confidently if we begin with the end in mind—the positive changes we hope will manifest in the individuals, families, and communities we serve. In other words, we are likely to make a difference if we start and end with our mission.

Twenty years is a long time, long enough to experience the transition from pen and paper tallies of attendance to scanning participants’ bar codes; from folding hundreds of newsletters to reaching thousands instantly with e-mails, blogs and tweets. During the past two decades, I have been involved in many conversations about how hard it is for nonprofit groups to keep up with technology. The cost, the learning curve and the distraction are challenges, but the challenges are balanced by the potential to reach greater numbers of folks, with more information, in real time, while saving tremendous effort that staff and volunteers can focus elsewhere. Each of these ponderables points directly back to the question asked above, with a technology twist:

Does technology really help us achieve our mission? How do we know?

This is the question that fuels the SIMO investigation. Intuitively, we might all answer, “Well, of course it does!” However, until now no one has looked at the SIMO relationships really closely to find key information that can help nonprofit organizations align technology with their overall strategy and their mission in order to achieve greater outcomes. That’s what I am looking for, that key information, so I can share it with you and your colleagues so that you can do your good work, better. This process has only been possible with your involvement, and I thank you very, very much for being a part of this important work.

—Kelly Trusty
About the SIMO Survey

The Nonprofit Strategy, IT/Mission Alignment Maturity, Mission and Outcome (SIMO) survey was conducted to learn about the ways in which nonprofit organizations (NPOs) use technology to do the important work they do in communities. Previous research suggests that when business entities align their adoption and use of technology tools with their strategic business goals, they tend to achieve greater economic gains, efficiency, and organizational effectiveness. Until now, no method existed to determine whether NPOs align technology with their missions and, if so, whether alignment efforts results in the achievement of greater outcomes and benefits to the organizations themselves, their constituents, and the communities they serve. Accordingly, this survey was developed as a preliminary step in identifying a method to measure alignment in NPOs. The survey consisted of an 87-item, web-based questionnaire.

About the Survey Participants

Representatives from organizations that received grants from Indiana Community Foundations between 2010 and 2012 participated in this survey. A total of 1,806 organizations, 87% of which were nonprofit organizations and 13% were public agencies, were invited to complete the SIMO questionnaire. Of those invited, 244 (14.3%) responded to the invitation.

The organizations serve primarily metropolitan areas (63%), with 25% serving non-metro areas and 12% serving rural areas. The organizations pursue a variety of missions, most of which meet human service needs (43%), followed by education (21%), public and social benefit (12%) and arts, culture and humanities (11%).

A majority of the organizations (77%) have 20 or fewer employees; most (82%) have 20 or fewer board members, and 52% engage at least 21 volunteers. Over half are considered “small nonprofits” with annual budgets of less than $500K (54%), and a majority spend 3% or less of their annual budget on technology (81%). Most (78%) have Internet access of DSL-level or greater.

Of all of the organizational representatives that responded, 48% could be considered the “leader” of the organization, while the remainder are other administrators and program staff. Just over half of respondents have been involved with their organizations for 6 years or longer, and just under half have been involved for five years or less. Most characterize their level of technology expertise and experience as “experienced and skilled” (52%), while 21% say they have experience, but not much skill, and 9% are very experienced and skilled or experts.
About the Survey Participants (cont.)

When asked about the overall strategy type their organization generally uses to plan and make decisions, a majority reported using either Prospector or Analyzer strategies.

- Prospects, 36% of respondents, look for ways to solve emerging needs and be the first on the block to implement new programs or activities.

- Analyzers, 37% of respondents, have a stable strategic environment. They are conservative in their approach to seeking out and solving new problems. They use environmental scanning to identify needs and structured planning to determine their approach to them.

- Defenders, reported as the predominant strategy type by 22% of respondents, focus on improving efficiency in their existing domain—they focus on strengthening their existing programs.

- Reactors, 5% of respondents, tend to respond in a disorganized way to outside pressures rather than proactively adapting to their environment. They seem to always be “putting out fires” rather than planning ahead.

Key Findings

- In more than half of the organizations (61%), there is not a paid staff member whose job it is to make decisions about or manage technology, and of those organizations that have a paid staff member in that role, only 24% of those staff members focus solely on managing technology. Further, of 25% of responding organizations, no one is in charge of technology.

- According to the Technology/Mission Alignment Maturity scales, altogether respondents rated their overall Technology/Mission Alignment Maturity at 2.66 on a 5-point scale. When asked to estimate their level of Technology/Mission Alignment Maturity, average respondent rating was 2.88, which suggests that organizations feel they are slightly more mature in their level of Technology/Mission alignment practices than they actually are.

- Overall, the respondent organizations’ most mature Technology/Mission alignment criterion is Organizational Culture and their least mature area of Technology/Mission alignment practice is Governance Effectiveness.
This chart shows average Technology/Mission alignment maturity scores for all respondents:

**Respondents' Average Technology/Mission Alignment Maturity**

**Criteria Scores**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Effectiveness</td>
<td>2.82</td>
</tr>
<tr>
<td>Measuring Technology Competency and Value</td>
<td>2.44</td>
</tr>
<tr>
<td>Technology Governance Effectiveness</td>
<td>2.17</td>
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<tr>
<td>Partnership and Collaboration</td>
<td>2.66</td>
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<tr>
<td>Technology Infrastructure Scope &amp; Architecture</td>
<td>2.92</td>
</tr>
<tr>
<td>Human Resources and Skills</td>
<td>2.35</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>3.26</td>
</tr>
</tbody>
</table>

When considering day-to-day organizational performance relative to stakeholder engagement, capacity, activities and outputs, respondents as a group rated performance above average (2.98 on a 4-point scale).

When considering their organizational performance relative to their achievement of outcomes, in other words, how they impact their clients and communities, respondents as a group rated their performance at slightly above average (4.33 on a 1-6 scale).

Respondents as a group tend to measure their day-to-day organizational performance (94%), but just over half of respondents (55%) measure their outcomes, or positive, sustained changes they have contributed to in their target population.

Overall, respondents feel the use of technology has a great deal of influence on their day-to-day organizational performance (rated 4.08 on a 5-point scale), but its influence on the achievement of outcomes was rated considerably lower (2.46). This finding suggests that while technology is useful in getting work done, it isn’t perceived as something that contributes to long-term change.

According to the SIMO model as it was tested with estimated data, strategy typology influences the relationship between technology/mission alignment and organizational outcomes in different ways, depending on the specific strategy typology an organization generally uses. Defenders, Prospectors and Analyzers tend to balance their efforts between technology/mission alignment practices, while Reactors tend to focus on just a few of the seven.

Again, using estimated data to test the SIMO model, organizational culture maturity appears to be one area of technology/mission alignment maturity that is common to all strategy typologies in terms of the weight of its influence on organizational performance.
Your organization’s reported strategy typology is: Analyzer

Strategy Typology is derived from work by Miles and Snow⁴, who describe four distinct types of strategic behaviors that are exhibited in most organizations when they respond to needs and problems. These behaviors occur in a cycle of adaptations that is dependent upon structures and processes that exist within the organization. The configuration of staff, board and volunteers, the organizational hierarchy (i.e. chain of command), the formality of policies and procedures, and the way decisions are made are all structures and processes that influence an organization’s strategic actions. More simply,

structure + process = strategy

The strategic actions translate to stable patterns of behavior over time, thus becoming part of an organization’s character. The choice to align technology with an organization’s mission is an example of a strategic action, and how the organization goes about the alignment process often demonstrates its strategy typology.

For example, a community arts organization may have been the first to align a few technology tools with their mission, such as using online fundraising for a mission-focused program or creating and maintaining a facebook page so it can communicate more efficiently with volunteers and patrons. In order to use those processes, the organization would need to have a decision-making structure, i.e. a committee comprised of a board member, the executive director, the program manager and the volunteer that manages all the technology, that supports this type of innovation and can create and implement a strategic plan to make those things happen. An organization like this would likely be classified as having a “prospector” strategy typology, provided these are the kinds of structures and processes it uses regularly.

The four strategy types are described on the next page as they have been demonstrated in nonprofit organizations⁵. As you read the descriptions and compare them to your reported strategy typology, ask yourself, “Is our strategy typology helping us achieve mission-focused outcomes?” The answer to this question may become clear when you examine your SIMO Profile on page 35.
The Four Strategy Typologies in the Nonprofit Sector

**Defenders** have a narrow focus, a set service area, or they serve a specific client or need. They are the experts in their sector and generally do not seek out new problems to solve or partners with which to collaborate. They often have formal policies and procedures to guide their work. Their approach to decision-making is generally stable, fueled by staff ideas and approved and monitored by the board. Strategy choices focus on increasing efficiency and effectiveness of the services they provide and, to a limited extent, pursuing innovations that will help improve service delivery. Defenders can be characterized as either the go-to organization for best practices if their services result in consistent, reliable, high-quality, mission-focused outcomes, or they might be the ‘old dog’ in a community that does what has always been done with little regard for environmental pressures or changes. Defenders view their mission as a strict boundary for service provision.

**Prospectors** are always looking for new ways to meet emerging needs. Accordingly, they are always in search of the latest technology and processes to create novel solutions. Prospectors are risk takers and often give up efficiency and overall superiority in exchange for their position as first on the block. They continually scan the community for opportunities to serve and respond quickly to funding and program development opportunities. These organizations invest resources and establish extensive partnerships to create, test, and offer new approaches. Board members, staff and volunteers are dynamic in their roles, champions and innovators are celebrated, committees are active, and service areas, policies and procedures are redefined as needed to meet emerging needs. Prospectors consider their mission a ‘jumping off point’ from which they should innovate and expand to meet a variety of needs.

**Analyzers** exist in two domains: one that is stable and requires routine processes, formalized structures, and efficient technology; and one that readily adapts to changes in the community. The stable base often consists of a well-developed, yet dynamic strategic plan, which provides fuel for controlled innovation. Analyzers engage in ongoing needs assessment to keep their finger on the pulse of their community of stakeholders. When they find opportunities to solve new problems, they do so with conservative, yet progressive technology, structure and process choices. Staff and volunteers are often specialized, and decisions are data-driven. Analyzers use their mission to drive a set of limited, stable services yet they remain open to promising practices that might enable them to better meet community needs.

**Reactors** do not tend to maintain a specific niche or present innovative approaches. Rather, these organizations respond to environmental demands by looking at what other organizations are doing, filling gaps and eliminating duplicative services. Environmental pressures tend to force disorganized choices in terms of who to serve, what to provide, what tools to use, and how to structure and process the work. Conserving resources and avoiding risk are often the focus, and the mission is flexible enough to adapt to a variety of needs and opportunities.
Your Overall Technology/Mission Alignment Maturity Score:
The estimated Technology/Mission Alignment Maturity Score you reported: 3.07

Your Individual Technology/Mission Alignment Maturity Criteria Scores
(5-point scale)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>Communication Effectiveness</td>
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</tr>
<tr>
<td>Measuring Technology Competency and Value</td>
<td>3.22</td>
</tr>
<tr>
<td>Technology Governance Effectiveness</td>
<td>3.11</td>
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<tr>
<td>Partnership and Collaboration</td>
<td>3.83</td>
</tr>
<tr>
<td>Technology Infrastructure Scope &amp; Architecture</td>
<td>3.33</td>
</tr>
<tr>
<td>Human Resources and Skills</td>
<td>3.44</td>
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<tr>
<td>Organizational Culture</td>
<td>4.29</td>
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</table>

Technology/mission alignment is characterized by five levels. The levels are not places where an organization lands and stays. Rather, an organization’s current technology/mission alignment level provides insight into areas in which technology already enables the organization to better meet its mission, and areas in which it can improve internal processes, its management and use of technology, and, consequently, achievement of its mission.

- **Level 1—Chaotic:** Organizations at Level 1 typically do not have a technology plan, use and management of technology is unpredictable, tech tools are used for simple, back-room functions, there is no tech support available, and funding is limited or nonexistent.
- **Level 2—Reactive:** Organizations at Level 2 are essentially in fire-fighting mode. Funding and maintenance of technology is based on immediate needs and breakdowns. Inventory is tracked, software and hardware are distributed across the organization, and technology is used for administrative and planning functions.
- **Level 3—Proactive:** Organizations at Level 3 plan and predict technology processes and problem-solving steps. Software and hardware usage and needs are analyzed. Technology processes are defined, and funding is based on planned replacement. Technology is used for administrative and program-related functions.
- **Level 4—Service:** Technology is considered a necessity. Technology training and capacity-building are planned and managed. All technology is integrated and automated. The role of the technology director/team is defined. Technology funding is based on planned replacement and timely upgrades.
- **Level 5—Value:** The organization sees technology as part of the overall organizational strategy. The technology director/team collaborates with other staff to improve program and service delivery. The help desk or “tech guy” goes beyond fixing to facilitating growth. Program outcomes depend upon technology. Technology training is an integral part of employees’ and volunteers’ preparation to serve. Funding for technology is a percentage of the overall organizational budget.
The Technology/Mission Alignment Maturity Criteria

The SIMO study, adapted from the Strategic Alignment Maturity Model (SAMM) with permission of its creator², used seven criteria, each a collection of organizational actions, processes or behaviors that may contribute to a nonprofit organization’s alignment maturity, to measure what technology/mission alignment maturity looks like in the nonprofit sector. SAMM has six criteria; the seventh criteria was added to SAMM and a number of terms were adapted in consideration of the character of the nonprofit sector in order to create SIMO. The premise of both models is that if an organization does not demonstrate one of the actions or demonstrates it at a low level, then the maturity level of that criterion goes down. If the organization demonstrates or uses that action or process at a high level, the maturity level of that criterion goes up. These are the criteria:

- **Communication effectiveness**—Actions that help leaders and staff effectively exchange ideas and share a clear understanding of what it takes to ensure that everyone is focused on meeting the mission and using technology in ways that align with the mission.

- **Measuring the competency and value of technology**—Data collection and evaluation processes that create a balanced view of the value of technology in terms of its contribution to the organization’s mission, and strategies for using rewards and penalties for achieving or missing objectives.

- **Technology governance**—Strategies that ensure that the appropriate leaders and decision-makers take the time to formally discuss and review priorities and allocation of technology resources, and that decision-making authority for technology changes is clearly defined.

- **Partnerships and collaboration**—The extent to which departments and people work together in the organization, as well as how the organization works with external partners and stakeholders.

- **Technology infrastructure scope and architecture**—The extent to which the organization uses technology in ways that are appropriate in structure and scope, understandable, flexible, customizable and innovative.

- **Human resources and skills**—The ways in which the organization recruits, trains and supports employees and volunteers so they are capable of using technology tools in ways that will help them increase effectiveness and efficiency in their day-to-day work.

- **Organizational culture**—The values and priorities demonstrated in an organization, such as innovation, locus of power in technology decision-making, the interpersonal climate, the level of trust among stakeholders, and how the organization deals with technology change.
Changing your level of Technology/Mission Alignment Maturity

Once an organization knows where it stands in terms of technology/mission alignment, it’s time to decide if the current level is the right level. For some organizations, having dependable tools for administrative tasks is all that’s needed to meet the mission. But for others, those that know there are certain populations not being reached, or opportunities being missed, taking it to the next level might be in order. How does an organization move to the next level? Five basic steps are suggested by Heye¹ and described below.

1. **Know where you are** — This report suggests your overall level of alignment, as well as your level of alignment in seven different categories, which is detailed in the next several sections. In order to change overall alignment, it is necessary to choose the categories that are most critical and able to be changed.

2. **Define your destination** — An ongoing conversation among an organization’s board, administrative leadership and technology leaders focusing on the five levels is the next step. The key question for all is, “How can we improve in each of these areas in order to better use technology to meet our mission? Which level seems like an appropriate goal for the next year, or two, or three?

3. **Build buy-in** — One person cannot improve technology/mission alignment by himself or herself. While a champion or sponsor helps facilitate change, it is important to discuss goals for improvement with the board, executive leadership, program managers, and direct service staff, as well as external stakeholders (funders, network partners, oversight groups) so everyone understands the goals of the change, as well as contributes their perspective and ideas.

4. **Make it happen** — Once the organization agrees that a concerted effort is needed to increase technology/mission alignment, it’s time to make a plan. Establish short and long-term goals for change relative to the criteria you’ve chosen to focus on. Identify the specific steps that need to be taken to increase the factors you’ve agreed on. Then, identify the resources (time, money, staff) necessary to do the work. Make a workplan that identifies the individuals responsible for each step toward the goal. Identify how you will measure changes in day-to-day operations AND outcomes to see if the changes have helped you get closer to meeting your mission. Be sure to identify who will measure changes over time to see if the changes have made a difference. Be flexible, be transparent, share information, keep communicating, and stay focused.

5. **Repeat** — Increasing technology/mission alignment is a process. Once you improve your technology infrastructure, for example, and see positive changes in your day-to-day operations or your outcomes, you may decide it’s time to focus on skills or technology governance. The same process should be followed, and always, always someone should be measuring results to ensure the change has added value to the organization.
YOUR TECHNOLOGY/MISSION ALIGNMENT MATURITY (cont.)

Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing Technology/Mission Alignment Maturity:


YOUR TECHNOLOGY/MISSION ALIGNMENT—Communication Effectiveness

Communication Effectiveness describes the level at which your organization leaders and technology staff exchange ideas, knowledge and information. Effective communication between these two groups helps the whole organization understand the connection between your mission, goals, strategies and activities, and technology tools that can facilitate them.

Your Communication Effectiveness Maturity Criterion Score: 3.29

Your Communication Effectiveness Maturity Factor Scores
(5-point scale)

<table>
<thead>
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<th>Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology staff understanding of NPOs</td>
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</tr>
<tr>
<td>Leadership’s understanding of technology</td>
<td>4</td>
</tr>
<tr>
<td>Board’s understanding of technology</td>
<td>2</td>
</tr>
<tr>
<td>Communication methods</td>
<td>5</td>
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<tr>
<td>Communication style</td>
<td>3</td>
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<td>Knowledge sharing</td>
<td>2</td>
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<tr>
<td>Liaisons</td>
<td>4</td>
</tr>
</tbody>
</table>

As you completed the SiMO questionnaire, you were asked to consider several aspects of your organization’s communication styles and strategies. The list below corresponds to the items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to communication?”

- How much does the technology department or the “tech guy/gal” know about our organization, its mission, programs, clients, and general operations?
- How much does our CEO/Executive Director/Program Director know about the technology we use, or the technology we could use to support our programs and services?
- How much does our Board know and understand about the technology we use, or the technology we could use to support our programs and services?
- Is our communication style between leaders and technology folks one-way or two-way? Is it flexible or inflexible? Is it formal or informal? How could it be more effective?
- How much knowledge and information is shared between leaders, staff, volunteers, and other stakeholders? Could more be shared, or could it be shared more effectively?
- Do we use liaisons between technology staff and other staff to help transfer knowledge and processes across the organization?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing *Communication Effectiveness Maturity*:


- **Five ways to improve internal communications at your nonprofit** (July 4, 2011) [online article]. By Sondi Bruner. Online at Charity Village website: [https://charityvillage.com/Content.aspx?topic=five_ways_to_improve_internal_communications_at_your_nonprofit](https://charityvillage.com/Content.aspx?topic=five_ways_to_improve_internal_communications_at_your_nonprofit)


- **Workplaces that Work: Interpersonal Communication**. (2013) [online article]. Online at the hrCouncil.ca website: [http://hrCouncil.ca/hr-toolkit/workplaces-interpersonal.cfm](http://hrCouncil.ca/hr-toolkit/workplaces-interpersonal.cfm)
**YOUR TECHNOLOGY/MISSION ALIGNMENT—Measuring technology’s value**

Measuring technology’s competency and value entails creating and using a well-thought out variety of metrics or criteria for determining whether technology is helping the organization meet its mission. Organizations with a high level of measurement maturity engage a wide range of stakeholders in formulating good “how do we know” questions that connect their use of technology with their goals, strategies, and activities, then using those questions to collect data, review the data, and make strategic decisions based on the data.

**Your Competency & Value Measurement Maturity Criterion Score: 3.22**

**Your Competency & Value Measurement Maturity Factor Scores**
(on a 5-point scale)

- Technology measures: 5
- Using technology measurement data: 4
- Outcome measures: 3
- Integrated tech/outcome measures: 2
- Service level agreements: 1
- Benchmarking practices: 5
- Assessing technology investments: 4
- Continuous improvement practices: 3
- Perceived contribution of technology: 2

The figure below illustrates the measurement process:

For example, if an art museum invests in building and maintaining an interactive website for kids, how will the board and staff know if the website actually “fosters the understanding of works of art” (National Gallery of Art, 2012)? A good question to begin with is, “How do we know if the kids’ website is building youth understanding of works of art?” Drilling down with additional questions gets to core data that can be used for decision-making:

- How many people visit the website each month? How many clicks do they make? Which web features are most accessed?
- How many families who visit the museum indicate on a survey that they visited the site?
- How many teachers gather information from the site?
YOUR TECHNOLOGY/MISSION ALIGNMENT—Measuring technology’s value (cont.)

When you completed the SIMO questionnaire, you were asked to consider several aspects of how your organization measures the competency and value of technology as it relates to the organization’s mission. The list below corresponds to the measurement items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to measuring technology’s competency and value?”

- What metrics, or measurements do we use to measure technology’s contribution to the achievement of our organizational mission? Are we measuring technology use? Are we measuring day-to-day processes and outputs? Are we measuring outcomes, the changes we’ve contributed to in the lives of our clients, participants, and community? Are the metrics easy to use and easy to understand?
- What processes do we use to measure technology’s contribution to the mission? Are the processes formal or informal? Is a specific person in charge of measuring? How often do we use measurement processes? Do we use the information we get to make improvements or decisions?
- Do we set benchmarks? In other words, do we establish specific levels of outcomes we want to achieve? How do we measure whether we’ve achieved those benchmarks?
- Do we assess and review the return on our technology investments? In other words, can we determine whether technology tools and strategies are adding value to our work?
- Do we engage in continuous improvement practices by looking at the measurement data we collect, determining what needs to change, then making changes to our strategies to improve outcomes?
- Can we accurately describe the extent of the contribution that technology has made to the accomplishment of our mission?
YOUR TECHNOLOGY/MISSION ALIGNMENT—Measuring technology’s value (cont.)

Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing **Technology Measurement Maturity**:

- **DIY Nonprofit Technology: 4 Steps for Measuring Return on Investment (ROI) on Your Next Tech Project.** (November 24, 2012) [online article] by Tanya Lee. Online on the Nonprofit Technology Network (NTEN) website: [http://www.nten.org/blog/2012/10/24/diy-nonprofit-technology-4-steps-for-measuring-roi-on-your-next-tech-project](http://www.nten.org/blog/2012/10/24/diy-nonprofit-technology-4-steps-for-measuring-roi-on-your-next-tech-project)


- **Webinar: Creating a Data-Informed Culture: Taking Control of Your Programs and Progress with the 7 Steps of Measurement.** Sponsored and presented by Nonprofit Technology Network (NTEN). Webinar are recorded and available on-demand, fee required. Online at the Nonprofit Technology Network (NTEN) website: [http://www.nten.org/events/webinar/2012/10/30/measuring-the-networked-nonprofit](http://www.nten.org/events/webinar/2012/10/30/measuring-the-networked-nonprofit)
Governance effectiveness involves making decisions about technology and processes in order to set priorities and allocate resources toward technology tools and strategies. According to Renz (2004), governance in the nonprofit world is “the process of providing strategic leadership...[which] entails setting direction, making strategy and policy decisions, overseeing and monitoring performance of the organization, and ensuring overall accountability”6. In most cases, nonprofit governance is the function of the Board, but it often involves participation by senior staff and external stakeholders such as funders and regulatory or accrediting agencies.

Your Governance Effectiveness Maturity Criterion Score: 3.11
Your Governance Effectiveness Maturity Factor Scores
(5-point scale)

<table>
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<th>Factor</th>
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<tr>
<td>Organization of technology</td>
<td>1</td>
</tr>
<tr>
<td>Organizational strategic planning</td>
<td>5</td>
</tr>
<tr>
<td>Technology strategic planning</td>
<td>4</td>
</tr>
<tr>
<td>Technology budgeting</td>
<td>3</td>
</tr>
<tr>
<td>Technology investment decisions</td>
<td>2</td>
</tr>
<tr>
<td>Technology steering committee</td>
<td>1</td>
</tr>
<tr>
<td>Prioritizing technology</td>
<td>5</td>
</tr>
<tr>
<td>Internal stakeholder involvement</td>
<td>4</td>
</tr>
<tr>
<td>External stakeholder involvement</td>
<td>3</td>
</tr>
</tbody>
</table>

The SIMO questionnaire also asked you to consider several aspects of your organization’s governance practices. The list below corresponds to governance items on the survey, and suggests questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to governance?”

- How do we organize technology? Is there central planning, or does everyone do their own thing?
- Does the organization engage in overall strategic planning? To what extent are technology staff, other staff, and other stakeholders involved in the planning and decision-making process?
- Do we engage in strategic technology planning, specifically considering how technology can contribute strategically to our mission? Do we have a technology steering committee?
- How do we prioritize and budget for technology? Is it a planned, strategic expense we incorporate into planning and budgeting to help us increase achievement of mission-focused goals?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing Governance Effectiveness Maturity:


**YOUR TECHNOLOGY/MISSION ALIGNMENT—Partnership & Collaboration**

**Partnership and Collaboration** describes the relationships and interaction between technology staff, the rest of the organization, and stakeholders. In many nonprofit organizations, particularly smaller ones, there is no “tech guy/gal” or IT department. In such cases, partnership and collaboration requires all staff and volunteers to work together to understand and implement technology tools in ways that are best suited to mission-focused strategies and activities. If, for example, one or two board or staff members are very tech savvy and want the rest of the organization to get on board with a new technology tool or strategy, the organization must work through the learning process so that everyone understands the purpose and value of the technology being proposed.

**Your Partnership & Collaboration Criterion Score: 3.83**

**Your Partnership & Collaboration Maturity Factor Scores**

<table>
<thead>
<tr>
<th>Perception of technology investment</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of technology in strategic planning</td>
<td>4</td>
</tr>
<tr>
<td>Shared risks and rewards</td>
<td>3</td>
</tr>
<tr>
<td>Relationship management</td>
<td>5</td>
</tr>
<tr>
<td>Technology champions</td>
<td>1</td>
</tr>
<tr>
<td>Collaboration with stakeholders</td>
<td>5</td>
</tr>
</tbody>
</table>

As you completed the SIMO questionnaire, you were asked to consider several aspects of your organization’s partnership and collaboration practices. The list below corresponds to the partnership and collaboration items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to partnership & collaboration?”

- To what extent are technology staff & services considered as adding value to the organization?
- To what extent does technology have a role in overall organizational strategic planning?
- To what extent do organizational staff work together to implement technology innovations, and to what extent do they get rewarded for their efforts?
- What kinds of processes are in place to enhance partnerships and collaboration that increase the use of technology?
- Are there “champions” or lead individuals that encourage the organization to incorporate technology into its initiatives? Are they supported and encouraged?
- To what extent does the organization collaborate with stakeholders on technology initiatives?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing *Partnership & Collaboration Maturity*:


YOUR TECHNOLOGY/MISSION ALIGNMENT—Technology Scope & Architecture

Technology infrastructure scope and architecture describes the extent to which technology is installed and used across the organization and in collaboration with other organizations. In some organizations, the scope of technology includes a few technology tools, primarily for “back office” tasks like copying and basic office management, while in others a wide variety are used to enable business processes and strategies, provide solutions, and add value to the work an organization does toward its mission. Architecture describes the ways in which networking is used to coordinate and consolidate technology tasks, increase efficiency, and maximize the impact of technology on the organization’s work. Some organizations have a few stand-alone computers, while others have all of their technology networked to a main server or applications and storage are cloud based. The range of configurations is endless.

Your Technology Infrastructure Scope & Architecture Maturity Score: 3.33

Your Technology Infrastructure & Scope Maturity Factor Scores

- Technology scope: 5
- Technology standards and policies: 4
- Technology integration: 3
- Technology flexibility: 2
- Internal technology tools: 1
- External technology tools: 5

As you completed the SIMO questionnaire, you were asked to consider several aspects of your organization’s technology infrastructure scope and architecture. The list below corresponds to the scope and architecture items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to its technology infrastructure scope and architecture?”

- How do we use our technology? For traditional office tasks, or to enable or drive processes, or do we use technology to drive strategy?
- Do we have technology standards and policies? Do we use and enforce them?
- How well is our technology infrastructure integrated? Does everything stand alone, or is technology coordinated across programs and departments throughout the organization?
- How flexible is our technology in adapting to changes in organization and community needs?
- What internal technology tools do we use? What external technology tools do we use? Does our scope of technology meet our needs? Do we need more? Are we overwhelmed?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing *Technology Scope & Architecture Maturity*:


- **DONATED SOFTWARE—TechSoup** partners with dozens of software and hardware providers to connect nonprofits with the tools they need, Visit the techsoup.org product donations web page for more information: [http://www.techsoup.org/get-product-donations/product-catalog](http://www.techsoup.org/get-product-donations/product-catalog)


YOUR TECHNOLOGY/MISSION ALIGNMENT—Human Resources & Skills

Human resources and skills describes the human capital considerations for the organization, including the extent to which staff and leadership have the knowledge necessary to integrate technology into their mission-focused work, whether training is provided, and the strategies used for bringing on personnel and volunteers who have appropriate technology talent and skills. This criteria addresses whether individuals are “on their own” with technology, or if the organization provides appropriate opportunities to learn and grow technology skills through job-specific training and cross-training. Also this criteria assesses whether the the organization is able to attract and retain the right people, both staff and volunteers to be “on the bus” in terms of their ability to use technology in ways that will help the organization meet its mission. More than just assessing whether the organization has a “tech guy/gal”, this criterion also measures the technology knowledge and learning climate in the organization.

Your Human Resources & Skills Criterion Score: 3.44

Your Human Resources & Skills Maturity Factor Scores
(5-point scale)

- Leadership tacit knowledge: 4
- Leadership explicit knowledge: 3
- Staff tacit knowledge: 2
- Staff explicit knowledge: 1
- Skill-building opportunities: 5
- Cross-training opportunities: 4
- Job sharing opportunities: 3
- Attracting high quality tech. staff: 5
- Attracting tech. savvy volunteers: 4

In the SIMO questionnaire, you were asked to consider several aspects of your organization’s human resources and skills. The list below corresponds to these items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to human resources and skills?”

- To what extent to leaders and staff know how technology tools work, and to what extent can they use technology to manage projects and solve problems?
- What opportunities, both formal and informal, do staff and volunteers have to attend training and build their technology skills?
- How well does the organization do in attracting and retaining the most qualified and skilled employees that have a balance of programmatic and technical skills?
- How well does the organization do in attracting and retaining volunteers who are technologically competent?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing Human Resources & Skills Maturity:


- **Be Smart When Buying Nonprofit HR Technology** (2013, May 15) [online article]. By Mac. Online at the Nonprofit HR website: http://www_nonprofithr.com/be-smart-when-buying-nonprofit-hr-technology/


- **Nonprofit Technology Network (NTEN)** provides webinars, face-to-face and conference training, as well as a Nonprofit Leadership Academy eight week training for beginning techies through technology masters. Visit the NTEN website Learn and Event pulldowns, http://www.nten.org

- **Microsoft Digital Literacy Curriculum** (2013). Online technology training tools available at Microsoft Digital Literacy website: http://www.microsoft.com/about/corporatecitizenship/citizenship/giving/programs/up/digitalliteracy/default.mspx


- **Tech Soup** provides and promotes technology learning events and webinars on topics that are relevant to nonprofit organizations. Visit the Events and Webinars web page and sign up for alerts of upcoming events, http://www.techsoup.org/community/events-webinars

Organizational culture is the unique pattern of shared values, priorities, assumptions, processes and behaviors that contribute to an organization’s social, interpersonal and strategic environment. This pattern can impact the ways and extent to which organizations approach and achieve their goals and their mission. In the context of SIMO, organizational culture considers the ways in which an organization views innovation and entrepreneurship, how power is used relative to technology decision-making, the interpersonal climate of the organization, the level at which people in the organization trust and value each other, as well as how the organization deals with change and disruption. Culture can influence how people in the organization think about and use technology.

Your Organizational Culture Criterion Score: 4.29
Your Organizational Culture Maturity Factor Scores
(5-point scale)

- Innovation - internal support: 3
- Innovation - external support: 2
- Locus of decision-making power: 4
- Interpersonal climate: 3
- Perceived trust: 4
- Perceptions of learning: 2
- Readiness for change: 4
- Disruption caused by change: 1
- Ability of technology to respond to change: 5
- Ability of staff to respond to change: 3

The SIMO questionnaire asked you to consider several aspects of your organization’s culture. The list below corresponds to the organizational culture items on the survey, and suggests the questions you may have asked yourself as you completed this section. As you review your scores and the questions below, you might ask yourself, “If my organization wanted to change this rating, what could it do differently in regard to its culture?”

- To what extent is our organization innovative and entrepreneurial?
- To what extent do our external stakeholders (funders, policy-makers, collaborative partners) encourage innovation?
- What is the “locus of power” in our organization relative to technology decision-making? Does someone at the top make all the decisions, or are the people who actually use technology day-to-day involved in the process?
- How do the technology staff interact with other employees and volunteers — at arm’s length, or is there confidence, trust, respect and cooperation among them?
- How is learning viewed in the organization? Is it part of everyday life, welcomed, tolerated, discouraged or dreaded?
- How does the organization react to change? Is it ready when change comes? Does change disrupt the organization? Can the organization and its technology readily adapt to change?
Strategy, IT/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing **Organizational Culture Maturity**:  


- **NTEN: Change (A Quarterly Journal for Nonprofit Leaders)**. Library of journal issues is available at the NTEN website with an online (free) subscription, [http://www.nnten.org/nntenchange](http://www.nnten.org/nntenchange)


- **Why Designing Your Nonprofit Culture is Do or Die** (n.d.) [blog] By Mark Koenig. Online at the Nonprofit Hub website, [http://www.nonprofithub.org/featured/designing-your-nonprofit-culture/](http://www.nonprofithub.org/featured/designing-your-nonprofit-culture/)
Organizational performance in the nonprofit sector answers the questions, “Are we achieving our goals?” and “Are we meeting our mission?” According to Penna, nonprofit organizations engage stakeholders; build their capacity; combine resources, products and services to offer activities (i.e. programs, interventions, campaigns); and as people participate in the activities, organizations are said to deliver outputs, e.g. the number of graduates, people who have viewed a campaign or performance, bowls of soup served, or beds filled. Technology can help engage stakeholders, build organizational capacity, create and deliver activities, and increase outputs, as you may have read about in the many resources listed in the SIMO Toolboxes presented in this report.

These measures are important because they tell organizations whether their day-to-day work is engaging the people in their communities and helping them move in a positive direction, one that aligns with organizations’ missions. The measures don’t, however, let an organization know whether the people and communities being served have actually experienced sustained benefit or positive change. Outcomes, again defined by Penna, are the direct, intended benefits or positive changes an organization’s efforts have on the stakeholders its programs and other activities serve, changes that make a significant, measurable difference in a situation or create something new that wasn’t there before. In other words, a nonprofit’s work should, over time, result in people being better off than they were before, in a way that is consistent with and defined by the organization’s mission and goals. When outcomes are sustained over time and they become observable in a whole community or population, they are considered impacts. Nonprofit organizations should strive to achieve outcomes — positive changes, and they should always try to sustain their work long enough and well enough to achieve impacts.

Outcomes should be observable, and they primarily fall into one of five categories represented by the acronym BACKS, developed by Penna:

- **Behavior** — Those things we see people do. In terms of outcomes, behaviors manifest as a change from a negative to a positive behavior, or a decrease of negative and/or an increase in positive behavior, such as smoking (negative) or attending cultural events regularly (positive). Behaviors can be measured by observing, testing, surveying, or looking at data from agencies that typically see these behaviors.

- **Attitude** — The way a person thinks about an issue that influence the choices he/she makes. Supporting recycling and green practices, or believing in the value of a healthy lifestyle are examples of attitudes that can be changed through the work of nonprofits. Attitudes can be measured through activities like surveys, interviews, focus groups and reviews of mass media and social media.

- **Condition** — The state of someone’s life relative to established criteria. Poverty, for example, is a condition. Someone’s poverty condition can be measured by finding out their annual income and level of food insecurity. A common way social service agencies measure condition is with five established levels—in crisis, vulnerable, stable, safe, and thriving. Neonatal service providers, another example, use the APGAR score.
BACKS Definitions (cont.)

- Knowledge—The extent to which a person has and can use information about a social or behavioral topic or issue. An example is artistic knowledge, which can be measured through interviews, surveys, or even creating new art of a certain genre, all outcomes that would be very desirable to an art museum or school. An environmental group might strive to build knowledge of the benefits of reducing, reusing and recycling which they hope will translate to someone actively choosing and sustaining those behaviors.

- Status—The extent to which a person fits an existing social category or label because they have the characteristics of that category. Employed is a status, as are endangered, CHINS, bullied and college graduate. The fit of the label determines the status, and status can, as an initial step, be measured by counting labels as found in agency data.

One of the major findings of the SIMO study was that most of the survey respondents (94%) reported that their organizations measure day-to-day organizational performance through collection of data on stakeholder engagement, capacity, activities and/or outputs. In order to measure how well their organization is performing day-to-day, and in order to maintain accountability, they keep track of who does what, who delivers what, and how clients and participants respond. That is important, and it helps organizations determine whether things are running smoothly and what needs to be fixed in organizational processes in order to keep things that way. However, that data does not tell organizations whether the social value they are striving to achieve, their mission, is being fulfilled. The data just cannot communicate that information.

When asked if they measure outcomes, 45% of organizations, nearly half, reported that they do not. In other words, they have no way to say whether their important work has resulted in any sustained benefit or positive changes in their constituencies. While it is commendable that over half of organizations do measure outcomes, the percentage needs to be higher. Why?

- To determine whether an organization is truly contributing to positive change.
- To change course if efforts are not resulting in sustained positive change.
- To report to funders their return on their investment, or what positive changes they contributed to.
- To celebrate when efforts are creating change and to share evidence of best practices.
- For the purposes of the SIMO study, to determine whether technology has any influence on the extent to which organizations achieve their missions and how that influence can be strengthened.

Next, we’ll look at how the relationship between performance and technology was assessed.
When you were asked about organizational performance in the SIMO questionnaire, you were asked two types of questions — “extent” and “influence of technology” questions.

- Extent questions measured your perceived performance relative to your established organizational goals and objectives:
  - The extent to which your organization performs its day-to-day work of engaging stakeholders, building its capacity, implementing activities and delivering outputs on a 4-point scale, with 3 points reflecting achievement of goals and 4 points indicating that goals are surpassed; and
  - The extent to which your organization achieves short-, intermediate– and long-term outcomes on a 6-point scale, with 6 points indicating 100% of clients or participants demonstrated expected outcomes.

- Influence of technology questions measured the level at which you feel technology influences your day-to-day performance and achievement of outcomes:
  - Day-to-day performance is often assessed in terms of efficiency, cost effectiveness, quantity, quality, and satisfaction\textsuperscript{10}. Accordingly, you assessed the level at which you feel technology influences day-to-day performance in each of those areas on a 5-point scale, with 1 indicating that technology reduced performance, 3 indicating that technology did not affect performance, and 5 indicating it helped a great deal.
  - Achievement of outcomes is assessed in terms of positive change. Measuring outcomes, at a basic level, entails measuring the extent to which change has taken place. You were asked to report whether you feel technology contributes to these types of changes for individuals and communities served by your organization using a different 5-point scale, where 1 equated to no influence, and 5 indicated that technology was the exclusive influence on the achievement of outcomes.

The logic model\textsuperscript{11} below illustrates the rationale for asking different questions for day-to-day performance and outcome achievement. In order to achieve outcomes, it is important to plan and measure day-to-day work. If an organization doesn’t achieve sufficient stakeholder engagement, if it doesn’t have the capacity to do its work (resources, staff, etc.), it doesn’t implement activities effectively, and it doesn’t produce sufficient outputs, it is not likely to achieve outcomes\textsuperscript{12}. Considering performance in this two-stage model allows organizations to troubleshoot along the way, and, for the purposes of SIMO, it allows organizations to consider how and where to integrate technology in order to get to outcomes. The next section will summarize how you reported organizational performance.
The charts below show how you rated the extent of your performance, with 1 indicating that you feel you experience no or low organizational performance, and 4 indicating day-to-day performance in which goals are generally exceeded; and in terms of outcomes, they are generally achieved by 80% or more of participants:

**Extent of day-to-day performance relative to organizational goals (4-point scale)**

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Activities</th>
<th>Capacity</th>
<th>Stakeholder engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Perceived extent to which outcomes are achieved (6-point scale)**

<table>
<thead>
<tr>
<th>Short-term</th>
<th>Intermediate</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

The following charts illustrate the level at which you feel technology influences the day-to-day performance of your organization in terms of efficiency, cost-effectiveness, quantity, quality, and satisfaction, with 1 indicating that technology reduces performance a great deal, 3 indicating no influence and 5 indicating that technology helps performance a great deal:

**Influence of Technology on Stakeholder Engagement (5-point scale)**

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Cost-effectiveness</th>
<th>Quantity</th>
<th>Quality</th>
<th>Stakeholder satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Influence of Technology on Organizational Capacity (5-point scale)**

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Cost-effectiveness</th>
<th>Quantity</th>
<th>Quality</th>
<th>Board/staff satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Influence of Technology on Activities/Strategies (5-point scale)**

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Cost-effectiveness</th>
<th>Quantity</th>
<th>Quality</th>
<th>Client/participant satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Influence of Technology on Outputs Produced (5-point scale)**

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Cost-effectiveness</th>
<th>Quantity</th>
<th>Quality</th>
<th>Organizational goals met</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

439
The final chart below illustrates the levels at which you reported that technology influences your organization’s achievement of short-term, intermediate and long-term outcomes. Recall that the on the scale for this measure, 1 designates no influence, 3 designates some influence and 5 indicates that you feel technology was the exclusive influence on whether intended outcomes were achieved.

In summary, the SIMO questionnaire measured your strategy typology, your organization’s level of certain factors that lead to technology/mission alignment maturity, and it measured the extent of your organization’s day-to-day performance and achievement of outcomes, and it measured the perceived influence of technology on your organization’s performance, all as you reported them. Together this information produces a Strategy/Information Technology (IT)/Mission/Outcome (SIIO) alignment profile. Following a “Getting to Outcomes™” toolbox that provides how-to information about strategic planning activities that help organizations get to outcomes, the next section presents results of the tests of the SIMO model and your SIMO profile.
Strategy, Technology/Mission Alignment/Outcome (SIMO) TOOLBOX

For more information on increasing Achievement of Outcomes:

“Getting to Outcomes™ (GTO)” is a phrase coined by Wandersman, Imm, Chinman and Kaftarian’s to describe a recommended process of planning, evaluation and accountability steps nonprofit organizations can take to build assurance that their day-to-day efforts will result in measurable, mission-focused changes in the populations they serve. The following resources describe the process which, along with technology/mission alignment strategies, can help organizations do the important work they do with more long-term impact.


- **Getting to Outcomes™: 10 Steps for Achieving Results-Based Accountability** (2007) [technical report]. This is an abbreviated version of the Rand Corporation manual for implementing GTO. Available on the RAND Corporation website: [http://www.rand.org/pubs/technical_reports/TR101z2.html](http://www.rand.org/pubs/technical_reports/TR101z2.html)

Additional Information on Logic Modeling and Performance Evaluation:


- **Evaluation** University of Wisconsin resource website: [http://www.uwex.edu/ces/pdande/evaluation/](http://www.uwex.edu/ces/pdande/evaluation/). Includes a free online course on “Enhancing Program Performance with Logic Models” and logic model worksheets.
The purpose of the SIMO study was to determine whether there are relationships between strategy typology, technology/mission alignment maturity and organizational performance. Due to data constraints (not everyone who started the survey completed it), validity and reliability of the SIMO model were not able to be confirmed, so this report will not tell you unequivocally that “This is your profile—if your organization uses ‘X’ strategy typology and ‘Y’ technology/mission alignment strategies, you will get ‘Z’ level of performance.” The data that was collected was used to estimate a full data set using statistical procedures that allowed for an exploratory level of data analysis, which did allow a first look at some potential relationships. The SIMO model is shown below.

The overall hypothesis for this study was that there are relationships between the three elements of the model, which are shown by the arrows in the diagram. While there was not a relationship identified between strategy typology and organizational performance, or strategy typology and technology/mission alignment maturity (shown in the model as IT Alignment maturity), there was unique influence of each strategy typology (prospector, analyzer, defender and reactor) on the relationship between technology/mission alignment maturity and organizational performance (shown by the dotted line). You may be asking, what in the world does THAT mean? It means that according to patterns that emerged when data was run through the model, different strategy types use different alignment practices, that result in different levels of organizational performance. The patterns are described on the next page. Following descriptions of the patterns, you will find your SIMO profile, which you can use to consider how your organization might prioritize making any changes to its strategy typology or technology/mission alignment practices in order to get to outcomes.
### Patterns that Emerged From the SIMO Model

<table>
<thead>
<tr>
<th>Strategy Type</th>
<th>Patterns</th>
</tr>
</thead>
</table>
| **Prospector** | • The Prospector strategy typology appears to contribute to the second strongest relationship between technology/mission alignment and organizational performance (.529 path coefficient).  
• Day-to-day performance appears to be more strongly influenced by technology/mission alignment maturity than is outcome achievement.  
• The specific technology/mission alignment maturity criteria that appear to contribute most to organizational performance are human resources and skills (26%) and organizational culture (27%), while communication contributes least (13%).  
• The range of weights across the seven criteria is .13, which suggests that Prospects tend to balance efforts across the different technology/mission alignment practices more so than Analysts or Reactors. |
| **Analyzer** | • The Analyzer strategy typology appears to contribute to the third strongest relationship between technology/mission alignment and organizational performance (.501 path coefficient).  
• Day-to-day performance appears to be more strongly influenced by technology/mission alignment maturity than is outcome achievement.  
• The specific technology/mission alignment maturity criteria that appear to contribute most to organizational performance are technology infrastructure scope and architecture (33%) and organizational culture (30%), while communication contributes the least (14%).  
• The range of weights across the seven criteria is .18, which indicates that Analyzers tend to balance efforts across the different technology/mission alignment practices more so than Analysts or Reactors. |
| **Defender** | • The Defender strategy typology appears to contribute to the strongest relationship between technology/mission alignment and organizational performance (.547 path coefficient).  
• Day-to-day performance appears to be more strongly influenced by technology/mission alignment maturity than is outcome achievement (likely due to low incidence of outcome measurement).  
• The specific technology/mission alignment maturity criteria that appear to have the strongest relationship to organizational performance are technology infrastructure scope and architecture (28%) and organizational culture (27%), while communication contributes least (19%).  
• The range of weights across the seven criteria is .10, which indicates that Defenders tend to balance efforts across the different technology/mission alignment practices more so than Prospects, Analysts or Reactors. |
| **Reactor** | • The Reactor strategy typology appears to contribute to the weakest relationship between technology/mission alignment and organizational performance (.454 path coefficient).  
• Day-to-day performance appears to be more strongly influenced by technology/mission alignment maturity than is outcome achievement.  
• The specific technology/mission alignment maturity criteria that appear to have the strongest relationship to organizational performance are technology infrastructure scope and architecture (43%) and organizational culture (52%), while communication contributes the least (.2%).  
• The range of weights across the seven criteria is .55, which suggests that Reactors tend to focus on some technology/mission alignment practices at the expense of others. |
YOUR ORGANIZATION’S SIMO PROFILE

SIMO (Strategy, IT/Mission Alignment/Outcomes) PROFILE FOR Sample Organization

Your strategy typology: Analyzer
(From the choices Prospector, Analyzer, Defender and Reactor)

Your overall technology/mission alignment maturity score: 3.07
(Average of all 7 technology/mission alignment maturity criterion scores shown below)

Your estimated technology/mission alignment maturity score: 4.00
(How you rated your organization overall after answering all the questions)

Your technology/mission alignment maturity criterion scores
(1-5 scale, 5 is highest)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Effectiveness</td>
<td>3.29</td>
</tr>
<tr>
<td>Measuring Technology’s Competency and Value</td>
<td>3.22</td>
</tr>
<tr>
<td>Technology Governance Effectiveness</td>
<td>3.11</td>
</tr>
<tr>
<td>Partnership and Collaboration</td>
<td>3.83</td>
</tr>
<tr>
<td>Technology Infrastructure Scope and Architecture</td>
<td>3.33</td>
</tr>
<tr>
<td>Human Resources and Skills</td>
<td>3.44</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Your reported organizational performance
(Questionnaire answer choice based on the average of all of your responses in the category)

Extent to which you achieve day-to-day performance goals
Achieve goals

Extent to which you achieve outcomes
41-60% of target population achieves outcomes

Technology’s influence on day-to-day performance
Technology does not affect performance

Technology’s influence on achievement of outcomes
Technology influences outcomes somewhat
REFERENCES


THANK YOU!

For the time you spent participating in the SIMO study, and for the interest you took in the results, thank you! Your contribution to this work is appreciated very much. Best wishes for success in your efforts to create positive changes in your community. If you have questions or would like more information, please contact the author:
Kelly Trusty, nearly Ph.D.
kelly.a.trusty@wmich.edu
APPENDIX K

Missing Value Analysis (MVA) Output Data
### Missing Values

#### Overall Summary of Missing Values

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<th>Variables</th>
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#### Variable Summary

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a. Maximum number of variables shown: 121
b. Minimum percentage of missing values for variable to be included: 1.0%
APPENDIX L

Multiple Imputation (MI) Results Summary
Table X

Results of Multiple Imputation

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APPENDIX M

Correlations Among Variables Not Contained Within the SIMO Model
### Correlations Among Variables Not Contained Within the SIMO Model

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**Bold** **p < 0.01 level (two-tailed) across all three data sets
**Bold **p < 0.05 level (two-tailed) in pooled, imputed data set
**Bold **p < 0.05 level (two-tailed) across all three data sets
* *p < 0.05 level (two-tailed) in pooled, imputed data set
APPENDIX N

Correlations Among Technology/Mission Alignment Maturity Criteria and Organizational Performance Measures
Correlations Among Technology/Mission Alignment Maturity Criteria and Organizational Performance Measures

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** **p <0.01 level (two-tailed)
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