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Information Systems Research in the Nonprofit Context: Challenges and Opportunities

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Abstract:

The nonprofit sector has become an important part of the U.S. economy, but Information Systems (IS) research in the sector has been limited. In this paper we attempt to motivate and organize IS research endeavors in the nonprofit context. We argue that the nonprofit sector presents not only new challenges but also numerous opportunities for IS research. We present a conceptual framework on the effectiveness of IS in nonprofits and illustrate how the framework can be used to identify the challenges and the opportunities. We also discuss how IS research in nonprofits can contribute to new understandings in IS in all organizations. Overall, we call for an increase in research efforts that will help better understand IS-related issues in the nonprofit sector.

Keywords: nonprofit, Information Systems research, challenges and opportunities

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I. INTRODUCTION

Researchers in the field of information systems (IS) have focused primarily on private, for-profit organizations. IS research in the public sector, particularly on e-Government initiatives, also abounds [Mohan et al., 1990; Sutanto et al., 2008; Teo, 2008]. IS in nonprofit organizations, however, remain under-studied, A recent message posted to the ISWolrd mailing list, arguably the most popular mailing list for IS research in academic institutions, solicited references about IS research in the nonprofit context. It generated only a rather limited set of references [Newsted, 2009]. Nevertheless, the nonprofit sector has become an important part of the U.S. economy. According to a 2007 report [Pollak and Blackwood, 2007], there are approximately 1.4 million nonprofit organizations in the United States, accounting for 5.2 percent of the gross domestic product (GDP) and 8.3 percent of wages and salaries. The nonprofit sector also outgrew the U.S. economy as a whole. From 1994 to 2004, the total revenue of nonprofit organizations increased by 61.5 percent after adjusting for inflation, compared with less than a 37 percent increase in U.S. GDP over the same period [Pollak and Blackwood, 2007].The nonprofit section becomes even more important in difficult times. When U.S. economy went into recession in 2009, overall GDP outcome decreased by 2.4 percent from the previous year, but the gross outcome of nonprofits remained stable with a small increase of 0.01 percent [BEA, 2009].

Although some studies have shown that IS deployment in nonprofits began in the 1960s [Herzlinger, 1977], the nonprofit sector generally has lagged behind in its infusion of IS [e.g., Burt and Taylor, 2000; Gordon, 1998; Hackler and Saxton, 2007; Pew Partnership for Civic Change, 2000; Te'eni and Young, 2003]. Limited budgets [Benedetto and Pirie, 1989; Dukler, 1989], lukewarm top management sponsorship [Berlinger and Te'eni, 1999; Herzlinger, 1977], insufficient training and technical support [Saidel and Cour, 2003; Schneider, 2003], and political conflicts [Thatcher et al., 2006] all have contributed to a slower pace of adoption of IS by nonprofits. In the last a few years, however, IS penetration in this sector appeared to have increased, primarily because of two factors: (1) changes in nonprofits' operational environments and (2) advances in and low cost accessibility to information technologies.

Today's nonprofits are under increasing pressures to improve their professional and managerial profiles and assume more operational accountability [Speckbacher, 2003]. They are often pressed by external stakeholders to use IS to satisfy reporting requirements for program performance evaluations. For example, in 2000, the U.S. Congress passed a directive to the Department of Housing and Urban Development (HUD) to produce an annual assessment of the extent of homeless in America. HUD, in turn, mandated that social service agencies around the nation plan and implement automated systems to serve this purpose [Gutierrez and Friedman, 2005]. Projects of this nature would be impossible without the technical advances and access that makes it easier and non-cost prohibitive for nonprofits to adopt IS [Finn et al., 2006]. Furthermore, the availability of free, reliable, and functional open source software has helped ease budget constraints [Fitzgerald and Kenny, 2004], one of the leading obstacles for many nonprofits to adopt IS.

With an increasing penetration of IS in this sector [Ouellette, 1996] and with more evidence of the effectiveness of IS on the programmatic side of nonprofits [Burt and Taylor, 2000; Lee et al., 2001], we can expect to see rising and innovative uses of IS solutions [Gordon, 1998; Hackler and Saxton, 2007], which offers us great opportunities not only to advance our knowledge of IS in nonprofits but also to increase our understanding of IS in general. Contrary to the intense research in IS in the for-profit context, academic research in this sector is considerably limited. Besides, much research in this area focused on providing immediate response to practitioner needs instead of accumulative theory building [Hackler and Saxton, 2007].

In this paper, we attempt to stimulate interest and motivate efforts in IS research in the nonprofit context. We do so with the aid of a conceptual framework on IS effectiveness. We focus on IS effectiveness for two reasons. First, IS effectiveness is an important and overarching dependent variable in IS research [see Grover et al., 2008]. Second, the current demands on nonprofits to achieve greater accountability make the study of effectiveness a natural fit. As nonprofit organizations incorporate the view of IS as a vehicle for achieving greater efficiency and effectiveness [e.g., Hackler and Saxton, 2007; Salamon, 2002], this construct becomes a central issue in understanding IS-related issues. For our purposes, we define IS effectiveness as the extent to which IS assist nonprofit organizations and their workers to achieve their goals. The framework extends the cognitive fit model developed by Vessey and Galletta [1991], positing that IS effectiveness in nonprofit organizations depends on the fit among tasks, technologies, and workers, as well as the factors in the broader organizational and social environment where IS are deployed and used.

The remainder of this paper is structured as follows. Section II presents the conceptual framework. In Section III, we use it to demonstrate how the nonprofit sector presents a different context, and hence challenges, for IS research. In the following section, we illustrate how this framework can help organize research efforts in IS in nonprofits by indentifying three important and promising research topics from the framework. We conclude the paper with a discussion on how IS research in nonprofits can contribute to the IS discipline in general.

II. A CONCEPTUAL FRAMEWORK

Figure 1 depicts the proposed conceptual framework. The core of the framework, the notion of fit among workers, tasks, and technologies, is derived from the cognitive fit model developed by Vessey and Galletta [1991]. They argue that workers achieve the best task performance when their problem-solving skills fit both the task and the technologies provided to support performing the task. The proposed framework extends the cognitive fit model by taking a more comprehensive view of workers, tasks, and technologies.

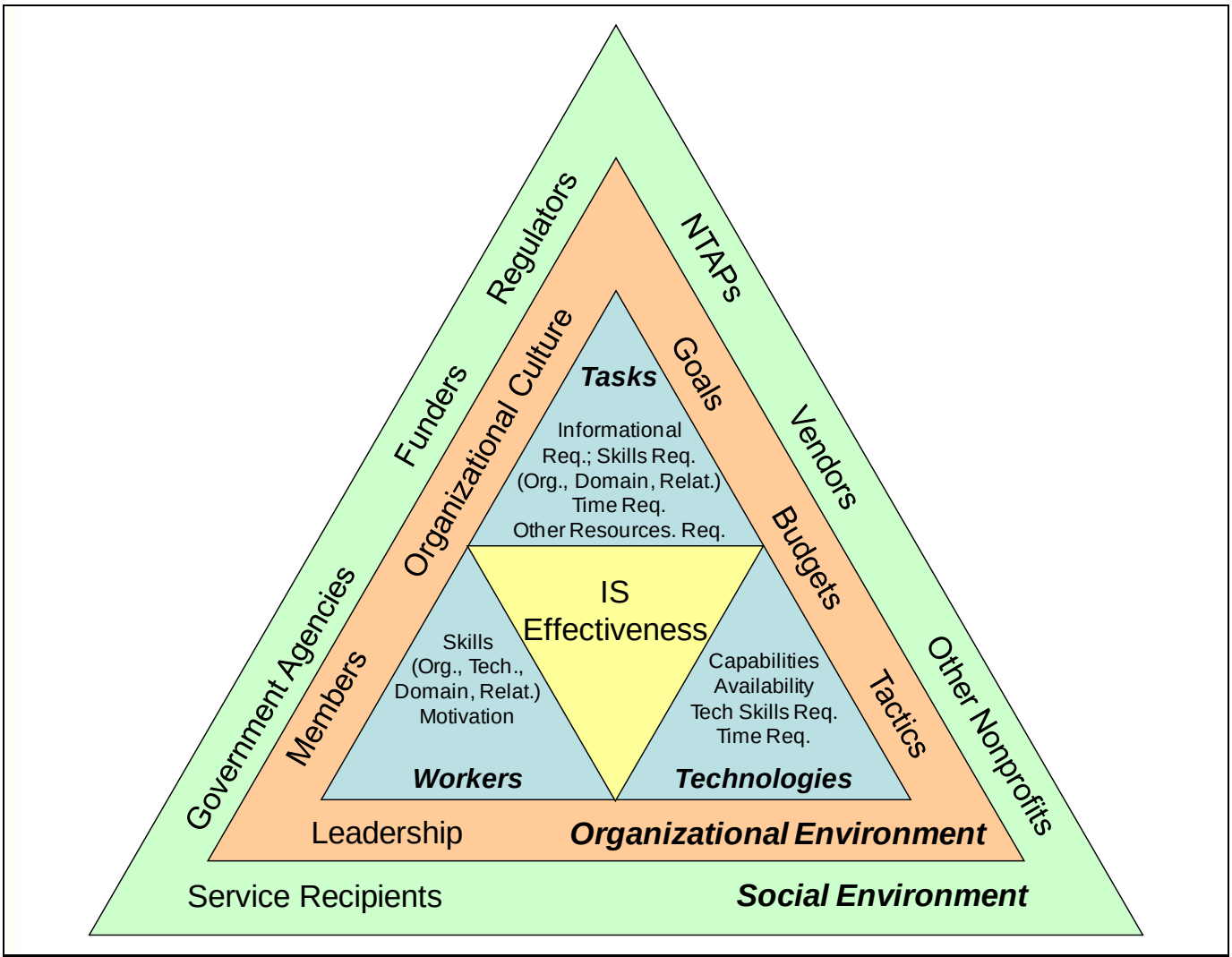

Figure 1. A Conceptual Framework for IS Effectiveness in Nonprofit Organizations

While Vessey and Galletta [1991] focused on workers' problem-solving skills, we consider as well workers' motivation to use IS, another important worker attribute widely studied in IS research [Davis et al., 1992]. After all, it is impossible to achieve effectiveness if the workers refuse to use IS [Goodhue and Thompson, 1995]. In previous research, task characteristics have been studied mostly from an informational perspective, in terms of, for example, task complexity [Zigurs and Buckland, 1998] and non-routineness [Goodhue and Thompson, 1995]. For our purpose, we take a different perspective, examining skills requirement and resource demand. While technical capabilities are certainly critical to understand the role technologies play in affecting IS effectiveness, other factors including availability, skill requirements, and resource requirements are important, too. Thus following Vessey and Galletta [1991], we propose that IS effectiveness depends on whether a nonprofit organization can support sufficiently motivated workers with the right skills to use the right technologies for the right tasks (Figure 1).

The outer layers of the framework acknowledge that the factors within the organizational and broader social environments affect IS effectiveness in nonprofits. IS research conducted in for-profit organizations has shown that IS usage influences and is influenced by organizational goals; available resources including time, budgets, and technical support; and other factors such as organizational culture and norms [DeSanctis and Poole, 1994; Orlikowski, 2000; Treviño et al., 2000]. This is particularly true in nonprofits. Researchers have identified limited budgets as one of the biggest obstacles for nonprofits to initiate IS projects [Benedetto and Pirie, 1989; Dukler, 1989]; lukewarm top management sponsorship has been shown to discourage nonprofit organizations from exploring the use of IS [Hackler and Saxton, 2007]. Nonprofits exist in their broader, and often complicated, social environments. They must deal with other involved entities such as other nonprofit groups, service recipients, funders, assistance organizations (e.g., Nonprofit Technology Assistance Providers), and regulators. How nonprofits interact with their broader environment can affect the design, deployment, and use of IS in these organizations [Thatcher et al., 2006].

The validity of the framework when applied to the nonprofit organizations seems plausible, but unconfirmed, and hence it is exploratory in nature. However, the framework offers a background for identifying challenges and opportunities for conducting research in this area. We demonstrate such use of the framework in two steps. First, using the framework, we explain how the nonprofits present a different context of IS research, and thus provide IS researchers with great challenges. Then, to illustrate the usefulness of the framework in helping identify promising research topics and subsequently organizing research efforts, we discuss three topics that we identified from the framework. We will show how previous IS research developed in for-profit organizations is inadequate to address IS issues in the nonprofit context.

III. NONPROFITS: A DIFFERENT CONTEXT FOR IS RESEARCH

In this section, we examine the components of the proposed framework (Figure 1) and explain how nonprofit organizations present a different context for IS research than for-profit organizations. These differences underscore the challenges of conducting IS research in nonprofits. We start with the elements in the core of the framework—workers, tasks, and technologies.

Workers, Tasks, and Technologies

Among the basic elements of the core of this framework—tasks, technologies, and workers, we address workers first due to the observable fact that workers at nonprofits differ significantly from those at for-profit organizations [Benz, 2005; Bussell and Forbes, 2002; Devaro and Brookshire, 2007]. Vessey and Galletta [1991] were primarily concerned with workers' skills. Employees in nonprofits are usually paid less than their counterparts in for-profit organizations [Ruhm and Borkoski, 2003]; the lower monetary compensation may put nonprofits at a disadvantaged position for attracting prized talents, such as skillful IS workers. Nor can nonprofits spend as freely as for-profit organizations in offering their employees on-the-job training to lift their skill levels. Compounding the issue, many nonprofit organizations, especially those providing civil and social services, rely heavily on volunteers. These organizations have much less control over volunteers' skill levels than for-profit organizations have over their paid employees'. Thus, nonprofit organizations may not always be able to ensure that their workers have necessary skills. Vessey and Galletta [1991] considered skills as being particularly pertinent to problem-solving, but to address these differences in nonprofits, skills need to be considered within a broader scope. They include:

- Technical skills—technical proficiency to interact with IS. Acceptance-related studies concerning self-efficacies to interact with computers and IS have shown the importance of technical skills for workers to embrace and use IS [Compeau and Higgins, 1995].
- Domain skills—ability to perform domain tasks in such areas as accounting, project management, counseling, or frontline service providing. Both domain skills and technical skills are important for workers to use IS effectively [Mackay and Elam, 1992].
- Political skills—familiarity with the organization and how its goals, procedures, power structures, and resources constrain how tasks can be performed [Lerouge et al., 2005].
- Relationship skills—ability to work with other people. These skills can strongly affect productivity [Goleman, 1995], especially in nonprofits where consensus building and cooperation is more necessary than in private companies [Ticher et al., 2002; Wade and Parent, 2001].

Another important worker attribute we consider is motivation to use IS [Goodhue and Thompson, 1995]. Previous research suggest that workers are motivated to use IS both extrinsically and intrinsically [Davis et al., 1992]. Extrinsic motivations are related to the expected outcome of using IS such as improved job performance and pay raise; intrinsic motivations refer to the inherent enjoyment workers experience when using IS. While both categories of motivations apparently apply in both for-profit and nonprofit sectors, the exact conceptualization and operationalization of the motivations and the extent to which they are important may be different.

Researchers comparing workforce in nonprofit and for-profit organizations have found that employees in nonprofit organizations are more ideologically driven and intrinsically motivated [e.g., Devaro and Brookshire, 2007; Mirvis and Hackett, 1983; Ruhm and Borkoski, 2003]. Despite the fact that they are usually paid less, workers at nonprofits are as satisfied with their jobs as their counterparts in for-profit organizations. It is quite possible that intrinsic motivations are more important for workers to use IS in nonprofit organizations and in for-profit organizations. To further understand these motivations, we turn to the literature on volunteering because few studies have investigated what motivates workers in nonprofits to use IS. Volunteers make up a critical part of the workforce in nonprofits, particularly those in the social sector; even paid employees in nonprofits show many characteristics similar to those of volunteers [Devaro and Brookshire, 2007]. People volunteer so they can express values like altruism, learn new things, form relationships with others, develop job related skills, protect their egos (e.g., avoid guilt), and enhance their egos (e.g., boost self image) [Clary et al., 1998]. Volunteer satisfaction depends on the match between motives and outcomes of the volunteering experience [Hynes and Nykiel, 2005]. Since altruism is a particularly common motivation [Bussell and Forbes, 2002], understandably, many volunteers do not desire to work on IS tasks that are not directly related to the nonprofits' goals. For example, someone working in a food bank might be more interested in packing food than entering data. This effect, however, may be moderated by their reasons for volunteering. Someone volunteering to improve their computer skills might be more willing to perform IS tasks than someone motivated by altruism. Thus researchers must adapt the conceptualization and operationalization of both categories of motivations to the nonprofit context to account for factors that are either unique (e.g., the issues related to ego protection or enhancement) or more prominent in nonprofits (e.g., altruism). Additionally, it is important for researchers to understand how the underlying motivations that draw workers to work for nonprofit organizations encourage or discourage workers to use IS.

Task is the next fit element in the proposed framework. Few studies have compared tasks in nonprofits with those in for-profit organizations, but it might be less different from its counterpart in the for-profit context than worker element that we discussed above. For our purpose, we define IS tasks by the skills entailed, the information required, and the resources demanded by an incumbent (e.g., time and budget). After all, effectiveness depends, in part, on what the task requires [Vessey, 1991; Vessey and Galletta, 1991]:

- Information—different tasks require different information presented in different format. For example, to generate form letters to members, a worker needs a member list in an appropriate format.
- Skills—different tasks require different skills.
- Resources—some tasks require resources such as time, supplies, or special equipment.

The final component in the core of the framework is technology. We consider the technology attributes to include not only the capabilities of the technology but also other factors such as availability and the skills and resources required to use the technology [Taylor and Todd, 1995]. These attributes are important factors that nonprofit organizations must consider when weighing their options. For example, the development in open source software [OSS, Katherine, and Gosain, 2006; Von Krogh and Von Hippel, 2006] has made OSS capable of supporting a wide range of tasks. The low acquisition cost has made OSS more available than proprietary software. However, the high skills and resource requirements can limit the use of OSS in nonprofits [Fitzgerald and Kenny, 2004].

Following Vessey and Galletta [1991], we propose that IS effectiveness depends on whether a nonprofit organization can support sufficiently motivated workers with the right skills to use the right technologies for the right tasks (Figure 1). While this is also true in for-profit organizations, these components take on different characteristics in the nonprofit context, and need to be conceptualized and operationalized differently.

The Organizational and Social Environments

As with for-profit organizations, IS in nonprofits function in certain organizational and social environment. The environmental factors can play important roles affecting how effectively IS are used. Table 1 summarizes some important environmental differences between the nonprofit and the private sectors. These differences exist both within and beyond organizational boundaries. The private sector is the early adopter of IS; businesses have long viewed information as an important economic resource. Effective IS can help businesses produce and deliver information that is essential for business decision making [Kroenke, 2008, chapter 3], and thus bring greater efficiency and competitive advantage to businesses [Porter and Millar, 1985; Siau, 2003]. In the private sector, IS have been embedded in organizational business processes for many years. While earlier IS were considered a great facilitator for organizations to improve their operation efficiencies, they have been increasingly viewed as a strategic weapon that can drive the development and advancement of business strategies [Henderson and Venkatraman, 1999]. IS projects can involve a large number of diverse stakeholders from different departments across organizations and thus incur conflicts between different local cultures and departmental views [Orlikowski and Gash, 1994]. The stakeholders are, nevertheless, rather homogenous in the sense that they are employed by the same organization and ultimately are driven by the same organizational goals and strategies. Moreover, IS projects are

governed by well-known managerial standards that are understood by most stakeholders and are built to comply with idiosyncratic principles governing prevailing corporate culture and guidelines [Miller and Hobbs, 2005; Olsson, 2008]. Funding for IS projects in private businesses usually occurs through internal capital allocations and is justified in terms of economic returns on investment [Brynjolfsson and Hitt, 1996]. To ensure successful IS developments and deployments, project management techniques [e.g., Fuller et al., 2008] are widely adopted and systematically practiced, although results do vary.

Table 1: Contrasting IS Research Contexts: Organizational and Social Factors

Criterion	For-Profit Organizations	Nonprofit Organizations
Adoption of IS	Early	Late
View of Information	Information is an economic resource that should be shared	Information helps accomplish core missions; information needs to be protected
Goals for use of information	Efficiencies, competitive advantage	Compliance, affecting public policy, serving a greater good
IS project stakeholders	Mostly internal, rather homogeneous	Both internal and external, rather heterogeneous
Sources of funds	Mostly internal, capital allocation	Mostly external, grants
Economics of IS	Cost and benefit/return on investment analysis	Resources diverted from providing the services
Driving force	Project management	Ideology
View of IS	Strategic weapon for competitive advantages	Burden

In contrast, organizations in the nonprofit sector are generally slow to adopt IS [Burt and Taylor, 2000]. Many only recently have begun to integrate IS into their daily activities [Burt and Taylor, 2000; Hackler and Saxton, 2007; Pew Partnership for Civic Change, 2000]. Many factors have contributed to the slow acceptance of IS by nonprofits, but one fundamental reason may be that nonprofit organizations view information, and its role within organizations differently than for-profit organizations. In general, like for-profit organizations, nonprofits acknowledge that information plays an essential role in accomplishing their core social mission. They use information in various ways, such as to comply with regulations, to affect public policies, to secure grants, and all in all, to serve a greater good [Salamon, 2002]. However, focusing on a core social mission leads many nonprofit organizations, especially those providing social services to the disadvantaged, to be more concerned about protecting information than sharing it, as it is both technically challenging and financially expensive to effectively prevent IS security breaches that can compromise information security and privacy. Consequently, many nonprofits consider IS a risk to protecting the most vulnerable instead of an effective tool for better serving them [see Berlinger and Te'eni, 1999, for an example].

Many nonprofit organizations rely on external grants to operate and to fund IS projects. These grants may come from federal and state government programs, national and local foundations, fundraising activities, member donations, and membership fees. Increasingly, fund providers are requiring nonprofit organizations to meet certain reporting requirements to secure grants. While these requirements help drive IS adoption, many nonprofits, particularly smaller ones with limited budgets, view investing in IS to meet these requirements as diverting valuable resources away from the organizations' core functions of providing services and hence an inconvenience that interferes with their social mission [Benedetto and Pirie, 1989; Dukler, 1989].

It is also more difficult for nonprofit organizations to initiate and manage IS projects because they involve numerous, heterogeneous stakeholders [Thatcher et al., 2006], including many typically not found in for-profit organizations: funders, regulators, volunteers, assistance organizations (e.g., Nonprofit Technology Assistance Providers), and service recipients. These stakeholders belong to different organizations with a variety of priorities. Their views and communication dynamics often collide, presenting enormous challenges to IS project management. Previous research has suggested that project management skills that are effective for IS projects in for-profit organizations may not be as effective in nonprofits [Gutierrez and Friedman, 2005]. Instead, in nonprofits, IS projects are more driven by ideology deeply rooted in the organizations' core mission [Ross et al., 2009]. Hence unlike for-profit organizations, which consider IS a strategic tool that can generate competitive advantage, many nonprofit organizations view IS as an undesired or unaffordable burden [Berlinger and Te'eni, 1999]. Such views of IS significantly hinder IS penetration into nonprofit organizations.

The differences between the for-profit and the nonprofit contexts discussed above clearly show that nonprofit organizations present a different context, and hence challenges, for IS researchers. Decades of IS research in for-profit organizations has led to much understanding on how companies can use IS effectively to achieve business goals. How this knowledge can be applied to nonprofit organizations remains to be seen. While we may be tempted to treat nonprofit organizations as special cases of organizations of smaller size and/or with limited budgets and view IS in nonprofits as suboptimal instances of IS in for-profit organizations, doing so would make us oblivious to the complexities inherent in IS issues in nonprofits and the rich research opportunities in this context.

One way to discover such opportunities is by examining the components of the framework and analyzing how they interact with each other. To illustrate such use of the framework, in the next section we offer three example topics that we identified from the proposed framework.

IV. THREE EXAMPLE TOPICS FOR IS RESEARCH IN NONPROFITS

We identify here three topics that present immediate challenges to IS research. They are, in the order from the outer layer to the inner layer of the conceptual framework:

1. Within the social environment: to better understand the mechanisms for accommodating conflicting multi-stakeholder, multi-institution IS initiatives.
2. Within the organizational environment: to effectively incorporate alternative approaches to information systems implementation that fit the nonprofit context.
3. Regarding the workers: to understand the attitude of individuals who work in the frontline of nonprofits toward using IS.

First, nonprofit organizations typically operate in complicated social environments, partly because of their reliance on external funds and partly due to their social mission. To the extent that IS projects in the nonprofit sector often involve different forms of compromise between multiple stakeholders with diverse interests, the deployment and use of IS are by nature highly dynamic and political. Some stakeholders are in common with for-profit organizations, such as vendors, developers, and users, while others are unique to the nonprofit context: NTAPs, funding providers, and service recipients (see the outer layer of Figure 1). Some play much more important roles in the nonprofit sector than in the for-profit: policy makers, regulators, and government agencies. As a result of the diversity of stakeholders and their different and often conflicting agendas, IS development and deployment processes in nonprofits can be more complex than those in the for-profit sector. As IS research in for-profit organizations has been primarily concerned with “the ongoing relations among information technology, individuals, and organizations” [Orlikowski and Baroudi, 1991, p. 6], research of IS in nonprofits must further expand the scope to include the larger and often paradoxical social context in which IS are developed, deployed, and used. IS research in the for-profit sector has led to the application of structuration theory [e.g., Orlikowski, 2000] and the development of adaptive structuration theory [AST, DeSanctis and Poole, 1994]. These theories suggest that the design features of a system alone cannot prescribe employees’ use of IS. Rather, the organizational environment in which IS are used and the employees’ own interpretations of the system play important roles in shaping how employees interact with IS. However, as Thatcher, Brower, and Mason [2006] observed, these theoretical perspectives may still be inadequate when applied to the nonprofit context, because they do not take into consideration influences from the even more complicated institutional environment surrounding nonprofit organizations.

Second, regarding IS development within nonprofit organizations, software engineering and project management techniques that are effective in for-profit organizations may prove insufficient with nonprofits. Due to the large number of stakeholders involved, IS projects in nonprofits are based more on cooperative processes that must incorporate fragmented and often conflicting views and perspectives than those in private or public organizations. Participative approaches based on representative or consensus-building models may be more effective than techniques based on rapid or agile implementation. The key to success is not to manage the projects *per se*, but to manage the expectations of the project by different stakeholders at different stages of the project lifecycle so that the stakeholders come to better understand realistic objectives within the enormous requirements and constraints surrounding IS initiatives [Gutierrez and Friedman, 2005]. System deployment methodologies that feature such large-scale participative approaches or consensus building, however, have not been well-developed and have not been documented as being effectively used in the nonprofit sector.

Finally, with IS’s increasing penetration into the nonprofit sector, it is important to study how receptive the workers are to using the systems. This stream of research is well documented in for-profit contexts [Venkatesh et al., 2003]. Users in the private sector are motivated, first and foremost, by the potential productivity or job performance gains resulting from system usage [e.g., Davis et al., 1989; Mathieson, 1991; Venkatesh et al., 2003]. In nonprofits, however, the workforce is more driven by an ideology to serve beneficiaries or to address a given mission [Benz, 2005]. Many workers are intrinsically motivated, driven by altruism. They are more interested in working on tasks

that are directly related to the core missions of the nonprofit organizations than in working with IS [Mathieson, 2006]. Researchers have found that an overemphasis on administrative efficiency, coupled with concerns about the use of information, has resulted in negative user attitudes toward IS [Berlinger and Te'eni, 1999]. Thus existing models for explaining and predicting technology acceptance may need to be expanded. Examples of research to incorporate end users' altruistic motivations for IS acceptance are scarce [Zhang and Gutierrez, 2007] and more research effort is needed to expand our understanding in this area.

V. DISCUSSION AND CONCLUSION

While nonprofits present challenges to IS researchers, they also offer great opportunities. Conducting IS research in nonprofits can make significant contributions in multiple ways. First, research efforts in this context can help explore new theories that are rooted within the nonprofit context. Theories based on such factors as volunteerism (vs. market-rate compensation), use of subsidies (vs. corporate investments), and mission driven operations (vs. market driven operations) are not only intellectually interesting but also practically and socially useful. IS have long been identified as an important tool for for-profit organizations to gain competitive advantage [Porter and Millar, 1985]. IS research in the for-profit sector has greatly enhanced businesses' ability to compete. Improved research on IS issues in the nonprofit context should help nonprofits better understand and use information technologies to serve their constituents. Such research is especially important today, when nonprofits are facing increasing pressures to be more accountable, must compete with each other for limited funds, and must achieve greater organizational efficiencies and effectiveness to provide more services with less. Examples of research in this aspect include Lee, Chen, and Zhang [2001], which showed that nonprofit organizations can successfully use the Internet to improve their fund-raising efforts.

Second, to the extent that the nonprofit sector presents a different research context for IS research, it offers a great opportunity to examine whether existing theories derived from research in other sectors can be applied to the nonprofit world. By studying nonprofits and comparing and contrasting findings with those from other sectors, researchers can better understand the interactions between IS and organizational contexts, and advance IS theories in general. One such example is Zhang and Gutierrez [2007]. Taking advantage of the knowledge accumulated in IS acceptance research, these authors applied the decomposed Theory of Planned Behavior [dTPB, Taylor and Todd, 1995] to investigate the user acceptance of an IS. A comparison between IS acceptance in the nonprofit context and that in the private context led the authors to propose that for the decomposed TPB to work in the nonprofit context, users' altruistic perceptions must be considered.

Finally, IS research in nonprofit organizations can directly contribute to overall IS research. In fact, businesses can learn much from nonprofit organizations [Drucker, 1989]. Over the last a few years both researchers and practitioners have recognized the value of developing synergies between these sectors [Dees, 1998; Kanter, 1999; Rackham et al., 1996; Sagawa and Segal, 2000]. For example, social entrepreneurship [Mort et al., 2003] essentially brings necessary elements from the for-profit sector to exert positive changes in the context of social agendas pursued by nonprofit organizations [Thompson et al., 2000; Waddock and Post, 1991]. It is through these synergies that IS research in nonprofits can make a significant contribution to studying IS issues in other contexts as well. One promising example is Open Source Software (OSS) research, which can benefit from the nonprofit context in at least two ways. First, because of its low acquisition cost, OSS is especially appealing to nonprofit organizations, some of which are pioneering OSS adoption [e.g., Fitzgerald and Kenny, 2004]. These endeavors can make nonprofits a fruitful research context for studying the acceptance and diffusion of OSS within and beyond nonprofit organizations. Second, there are many similarities between OSS movements and nonprofit organizations. Much OSS research concerning why people contribute to OSS identified that OSS developers are driven by ideology- or value-based intrinsic motivations [e.g., Markus et al., 2000], the same motivations driving the employees and volunteers in nonprofits. Many OSS efforts are benefiting from support from commercial organizations [Roberts et al., 2006], a trend also evolving in nonprofit organizations. Some OSS efforts are even organized as nonprofit organizations [e.g., Ubuntu, Hill, 2007]. It is conceivable that OSS research can benefit from the synergy with research in nonprofits: the nonprofit sector's emphasis on altruism, cooperation, and ideology may further advance our understanding of why and how people contribute to developing and deploying OSS.

In summary, we hope that this article helps stimulate more research interest in IS in nonprofits, and the proposed framework on IS effectiveness in nonprofits can help motivate and organize research efforts in this important area. The sector has grown into an important part of the U.S. economy, and IS are penetrating into nonprofit organizations. To the extent that the nonprofit sector represents an important, different, and challenging research context for IS researchers, it provides great research opportunities too. We believe more research efforts in IS in nonprofits can help nonprofit organizations better understand and utilize IS and contribute to the research tradition in the IS field overall as well.

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