

The View From the Trenches: Organization, Power, and Technology at Two Nonprofit Homeless Outreach Centers

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ABSTRACT

Nonprofit social service organizations provide the backbone of social support infrastructure in the U.S. and around the world. As the ecology of information exchange moves evermore digital, nonprofit organizations with limited resources and expertise struggle to keep pace. We present a qualitative investigation of two nonprofit outreach centers providing service to the homeless in a U.S. metropolitan city. Despite similar goals shared by these organizations, apparent differences in levels of computerization, volunteerism, and organizational structure demonstrate the challenges in attempting to adopt technology systems when resources and technical expertise are highly constrained.

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INTRODUCTION

CSCW and related fields have a long history of ethnographic inquiries of real work in a variety of contexts; from for-profit office work [29, 32, 37], to the control room [16, 18], and clinical settings [15, 38], this body of research has provided insight into the complex relationship between the social construction of work and the opportunities and limitations imposed by various forms of technology.

One area that has seen less consideration in the CSCW canon is the study of private, nonprofit social service organizations. Such organizations present a unique set of needs and constraints for three important reasons; first, they are often working under very tight financial constraints that affect long-term technology planning and access to technical expertise; second, nonprofit organizations depend on volunteers to fill critical roles in day-to-day operation, creating a cooperative dynamic that differs from organizations where

all work is done by paid employees; finally, private nonprofit social service organizations find themselves in competition for grants and other public funding, thereby affecting some of the ways they might collaborate in developing and providing programs of service.

In order to explore issues of technology adoption and coordination present in private nonprofit organizations, we undertook a qualitative investigation of two homeless outreach centers in a U.S. metropolitan city. Ours is a study of contrasts—despite the similar goals of these organizations, there were apparent differences in levels of computerization, volunteerism, and organizational structure. We wished to understand how these impacted coordination both within and across centers, how the centers appropriated information and communication technologies (ICTs), and how coordination and technology impacted overall efficacy of the centers.

Changes in the Nonprofit Ecosystem

The designation “nonprofit” refers to a tax exempt standing under U.S. tax law, defined in Section 501(c)(3). Such organizations often do generate profit but those earnings may not be distributed to shareholders or individuals; rather, they are required to be reinvested into supporting the charitable services the organization provides. Nonprofit organizations play a critical role in providing services to many communities across the U.S. and the world. These organizations are privately held and range in size and reach from organizations like the Bill & Melinda Gates Foundation to the smallest community church.

While private donations to charitable organizations in the U.S. are considerable¹, the historic perception of abundant government support for social welfare has traditionally driven much of those private funds toward other charitable causes like disaster relief, health programs, and environmental protection [33, 31]. This legacy exacerbated already existing hardships for nonprofit social service as the climate of government welfare support changed in the 1980’s: the first declines in public funding for welfare programs since the Great Depression were happening while the population of individuals needing those services was growing [6, 33]. As private funds were still largely focused elsewhere, nonprofit social service organizations were faced with having to provide service to a growing population of poor and home-

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¹<http://www.un.org/partnerships/YStatisticsUSCharitableGiving.htm>

less with fewer resources and less support from government agencies [33].

These changes have had two significant effects on nonprofits in the U.S. First, the need to generate revenue has opened the door for business practices borrowed from for-profit practices. One example of this can be seen in mega-churches in the U.S. where management structures and a focus on brand and growth have transformed the way these organizations interact with their communities [39]. While mega-churches might be an extreme example, the need for nonprofit organizations to become more efficient in their operations and broader in their approach is pervasive in the U.S. [33].

A secondary effect of emulating for-profit enterprises comes via pressure to adopt technologies to achieve measures of efficiency and a more rationalized business practice. This in turn has led to many technologies and techniques studied by CSCW in for-profit work contexts making their way into the nonprofit sector, including advocacy of ICTs in support of communication and collaboration [26] and the maintenance of electronic clinical records (e.g. as advocated in [15, 30]).

Examining CSCW & the Nonprofit

With respect to technology's place in the nonprofit, Merkel et al. assert that ICTs can play an important role [26]; from aiding in volunteer recruitment, amplifying public relations and fund raising activities, to improving internal information management, the use of ICTs has great potential for nonprofit organizations. Yet despite these potential gains, ICTs are often underutilized. At the center of this underutilization lies the simple fact that nonprofit organizations are resource constrained in ways that many for-profit companies are not: budgets for technology and training are often limited, as is access to personnel with technical expertise [25, 26, 27]. As a result, the technology in place is often approaching obsolescence and is poorly suited to supporting long term organizational needs and growth. This further frustrates a positive perception of ICTs and their ability to play a useful role within nonprofit organizations [5]; e.g., in a study of Canadian volunteer organizations, less than half of the respondents viewed ICTs as having a positive impact on their service, recruitment, and management activities [14].

The dependence on volunteerism is another key aspect in the operation of nonprofit organizations that plays an important role in the adoption of ICTs as well as in the nature of the cooperative work that takes place. Volunteers have a variety of backgrounds and expertise that complicates the introduction and maintenance of technology. Additionally, high turnover in the volunteer workforce often means knowledge is not preserved from one group of volunteers to the next, compounding the difficulties of developing a long-term view on the role of ICTs for the organization. Carroll and Farooq explicate these tensions as a problem of control over ICTs [5]; volunteers typically expect more task autonomy than paid staff [25], and the combination of conflicting motivations and highly constrained resources make it difficult to cultivate the expertise necessary to support sophisticated use of ICTs within these environments.

While it can be argued that the introduction of for-profit workplace practices and technologies may be a herald of

better times—increased efficiency and better support of collaboration and knowledge work—there remains a constant struggle for nonprofit organizations to keep pace with an increasingly digitized and interconnected information landscape.

The challenge is three fold: first, limited resources do not afford access to best of breed ICTs and stifle access to expertise; second, high turnover within the voluntary workforce raises the organizational cost of creating and preserving the knowledge necessary to make effective use of deployed ICTs; and third, as noted in the study of Canadian volunteer organizations [14], these technologies can be disruptive to the work of providing social services and can create imbalances between those who receive the benefit of new technologies versus those who must do the work of using them—a critique pointed out previously within CSCW in for-profit contexts [12, 19].

Homeless Outreach & Care-providers

Within this landscape of nonprofit and community volunteer organizations, homeless outreach and care-providers are a particular sort. They are often the last lifeline for individuals facing dire circumstances and in need of immediate and on-going aid. The services provided to the homeless population are focused on basic needs, and the centers rely heavily on volunteerism and often have strong relationships with a network of other private nonprofit organizations in the community—both as a way to source funding and material needs (temporary housing, clothing, etc.), but also as a source for their volunteer workforce.

The variety of conditions that are labeled as “homeless” gives rise to a wide range of nonprofit organizations that aim to serve various segments of the homeless community [2, 17, 40]. The services these organizations provide range from emergency housing, to job training and placement, to financial aid for rent and utilities. These service providers are a mixture of grassroots and nationally affiliated organizations committed to identifying and ministering to individuals whose needs are not being met through other sources. It is often the case that no single organization provides all the services a homeless individual may need. As homelessness is often accompanied by a number of social, physical, and psychological needs that may require attention, aid from multiple specialized organizations is necessary to gain access to healthcare, addiction treatment, employment services, and—for the growing number of single-parent females among the homeless population [2]—childcare services. This distribution of services across many organizations means, in turn, that these disparate organizations must coordinate with each other on a case-by-case basis to ensure effective delivery of services.

In contrast to the more traditional workplace venues that have been examined in CSCW, this need to coordinate *among* organizations, not just *within* them, is imperative for providing service to the homeless. While individual clients have a responsibility and a role to play, effective coordination also requires technical and managerial systems on the part of the centers to ensure equitable (and, often, legally regulated) distribution of service. This coordination,

commonly in the form of client referrals, has to reach across organizations, their individual charters, missions, and organizational structures if it is to provide real value to the client and not simply act as a “low cost way to [for service centers] to process clients” [22, pg. 132].

In a previous study, we interacted directly with the homeless to better understand how technology affects their daily lives [21]. That initial study exposed many of the known difficulties in working with this specific vulnerable community [34]. While our earlier work revealed some of the challenges the homeless face in coordinating aid across several organizations, we wanted to shift our vantage in this study to better understand how the organizations themselves manage cooperative service in providing care for the homeless community, and what role technology plays in providing that care.

CONTEXTS OF STUDY

We worked with two organizations in a major U.S. metropolitan area to gain a better understanding of how they organize themselves and provide care to the homeless community. The two centers, here referred to as *Center A* and *Center B*, focus on providing care to different segments of the homeless population. We chose to work with these two centers as a way to explore contrasts: *Center A* and *Center B* not only provide different services to a different set of clients, they also represent a diversity in approaches to organization, coordination, and technology use. In managing their services, each center had different priorities in what kinds of services were most crucial to the local homeless community and how those services should be distributed.

The staffing levels at each center were comparable: *Center A* had eleven full-time staff and a variable volunteer workforce; *Center B* had seven full-time staff, four interns, and a variable volunteer workforce. Both centers had budgets of about U.S. \$1 million a year.

Center A is best known in the community for its homeless activism and outreach and the grand-scale holiday dinner it puts on. These activities have traditionally targeted the chronically homeless—those who “spend very long periods living on the streets or in substandard housing” [17]. Since Hurricane Katrina in 2005, *Center A* has also provided additional resources to the homeless, working-poor, and displaced in the form of “life assistance” via a food pantry, and rent and utility grants.

These new services, particularly the rent and utility grants where money is being provided directly to members of the community, present new challenges for *Center A*. Where the outreach, holiday dinners, and food pantry were all previously run on private donation, the financial aid programs are funded through local and state government and come with stringent requirements that have caused significant changes in how *Center A* tracks clients and handles case management. These changes were on-going at the time of our observations and as we describe in further sections, were heavily affected by the coordination practices, organizational structures, and adoption of ICTs within the center.

Center B works with different segments of the homeless population through two locations. The first location focuses on providing addiction management and counseling for home-

less individuals who qualify for disability support. The second location provides basic skills and what they call “employment readiness training” for homeless individuals who are still able to work. During this study, we spent our time observing the second location where the focus of service was on securing employment.

The work practice at *Center B* has developed around a sophisticated set of case management practices; the organizational structure, the integration of ICTs, and the development of an independent volunteer workforce have all grown to support the center’s mission of helping homeless individuals get back on their feet through employment and placement in complimentary services (such as transitional housing or addiction counseling).

The reason we chose to work with these two centers is twofold. First, by looking at two centers that serve differing but overlapping segments of the homeless and poor population, we hoped to observe elements of the community of care-providers, including inter-center coordination. While the two centers did not directly refer clients to one another, they both worked with external organizations to generate and receive referrals for individuals in need of aid. Second, the two organizations represent very different approaches to working with the homeless community. Both are conduits for public welfare programs, and as such, can be described as what Lipsky called “street-level bureaucracies” [22]. Where Lipsky dealt with public servants—those employed by the state—the employees and volunteers at these two centers took on similar roles in administering public policy, albeit as employees of a private organization.

METHODOLOGY

Our fieldwork comprised observation and unstructured interviews. Both centers were gracious in allowing us access to staff, meetings, and all aspects of day-to-day operation. The only interactions we were not allowed to observe were those between the client and the case manager. Privacy concerns were paramount, but issues of trust were also an important consideration. The director of *Center B* explained that it can take a period of weeks to build trust between the case managers and the clients and placing an unknown observer in that context would be detrimental to the efficacy of counseling, a point consistent with the additional ethical concerns present when working with the homeless [8].

This brings up a unique consideration when working with organizations of this type: the service being provided is often one of urgent necessity to the recipient. In the case of the homeless individuals coming into *Center B*, they were often recovering from addictions and possibly coming from abusive situations. Even though we were not directly interacting with the clients during this study, there was a risk of our presence disrupting the social balance struck between clients, staff, and volunteers. Being familiar with the relationship of people around you is an important part of feeling in control of life, and generating that sense of control is a significant part of what *Center B* provides. As observers, we had to explain our relationship to the center, and do our best to conduct our observations without disrupting the mission of the outreach center.

Our study was conducted over the course of six weeks, with observations comprising 25 hours at *Center A*, 28 hours at *Center B*, and 15 interviews spread across both centers. The observations covered times of high activity as well as slower times where only a few people might be present in the building. Privacy constraints meant all observations were recorded as hand-written notes. During the hours spent at the two centers, we attempted to observe all parts of the organization; where access was constrained, we followed up with case managers and staff to talk about the kinds of activities they had just completed to gain an understanding of what kinds of work made up their routines.

FINDINGS

In conducting the fieldwork at *Centers A* and *B*, we found that while several aspects of their operations were consistent with each other (and likely arise largely from the fact that both are non-profits focused generally on the problems of homelessness), these consistencies were often outweighed by the contrasts. Moreover, these contrasts serve to highlight the challenges faced by organizations working with the homeless population, and point—in a number of cases—toward the failings of current ICTs when deployed in the context of nonprofit organizations. In the discussion that follows, we present our findings from both *Center A* and *B* organized around a set of themes that emerged from our study: Organization, Roles, and Responsibilities; Volunteerism; and Data Management. We discuss the differences between these centers in how they coordinate and appropriate technology, as well as the tensions that arise from their use of ICTs in supporting coordination.

Organization, Roles, Responsibilities

The organizational structure within the workplace—work procedures, incentive structures, and the culture of the workplace—defines the contours of how open individuals will be with sharing information and cooperating toward larger organizational goals [28]. We observed two very different internal organizations, and how those differences impacted everyone from staff to volunteers and affected cooperation and division of labor. What became clear to us through our observations are the ways in which these two organizations' abilities to appropriate ICTs and develop strong support organizations played a role not only in providing service to the homeless community, but also in improving cooperative work practices between staff members, volunteers, and external centers.

Center A: Growing Pains

Earlier, we noted that *Center A* was in the midst of scaling their services up from primarily homeless outreach—providing food, clothing, and ministry to area homeless—to a more involved engagement aimed at preventing homelessness, which included case management and community education on topics like “financial empowerment.” During the duration of our observations, it was clear that the shift in focus had created tensions and distance between staff members trying to understand how to work under the new program.

One of the more significant challenges facing the staff at *Center A* was a lack of clarity in job responsibilities. In separate interviews, two different staff described their job re-

sponsibilities as being the same and reacted angrily when we commented on the duplication. In observations of working practice in the front office area we frequently witnessed terse exchanges between staff who were duplicating each other's work and were frustrated with the lack of clarity on whose job it was and notions of what the other staff member *should* be doing.

Where others have pointed out that apparent duplication of work can be an important part of achieving the overarching goal of the group (e.g. the duplication that takes place in air traffic control rooms [18]), the duplication we observed was the result of poor communication from management, resulting in conflicts over work, turf-wars over responsibility, and a heightened level of anxiety over job security. As a result, cooperation was less likely as staff did not know whom to ask for help, while also being reluctant to offer help for a given task. Moreover, the duplication of work and lack of coordination meant that there was a high degree of interruption for staff at *Center A*. This stands in contrast to findings in other domains where work may also have a high degree of interruption, but is generally coordinated around a well defined goal with well defined job responsibilities [3, 16].

A further breakdown in coordination came between staff in the lobby who were the first to interact with clients, and the case managers who dealt with ongoing care. Often, clients would come in with simple question regarding logistics—double checking an appointment time or looking for an aid check that might be ready for pickup. However, there was no shared repository for basic information such as the daily appointments of the case manager or other information updates the clients were in need of. The lack of coordination between the front lobby and the case managers meant that clients would often have to wait for long periods of time before a case manager was free to answer their question, or be sent away without the information they were seeking.

This point belies a greater organizational tension at *Center A* where stratification between the case managers, staff in the lobby area, and volunteers led to three different worlds of work and clear breakdowns in how work was coordinated among these levels. A significant contributor to the breakdowns between these strata was the absence of any shared artifacts to support organizational knowledge about the day's activities. In order to share information, staff members relied on face-to-face communication; but unlike email, instant messaging, or other persistent coordination mechanisms, face-to-face interactions are ephemeral and we observed frequent miscommunication as messages passed through several people (and layers in the organization) before reaching their intended recipient.

Center B: The Hum of a Well Oiled Machine

Where *Center A* had a high degree of stratification between the various roles, *Center B* was a much flatter organization. Below the director, two program managers oversaw the two major activities at the center—the job readiness and life stabilization program and the “clean-street crew” of client-volunteers who worked every morning on different clean-up projects around the city. The clean-street crew was a smaller, self-contained program with no additional staff,

while the job readiness programs included four case managers that interacted with clients and with whom the director would coordinate care.

The case managers each had specific duties within the center: running programs, providing training to clients, overseeing use of the computer lab. These responsibilities were clearly communicated to each of the case managers as was the manner in which each area of responsibility fit into the larger picture of providing assistance to the homeless individuals enrolled in the program. This clarity, both in the specific job and in the larger framework of social service, created a unity in purpose in the staff and fostered an apparent willingness to share information.

Center B also had a rotating contingent of interns from connections with graduate programs at local universities. These interns were involved in case management and were an integral part to the center's activities. Some of the staff had dedicated interns who were assigned to specific areas of the program while the rest of the interns were available as needed to float between case managers. The floating rotation was significant in providing coordinating information between the case managers, in effect bringing the work done by individual case managers into a stream of communication that was constantly circulating around the workplace via interactions with the interns. The face-to-face communication at *Center B* was not observed to be problematic in part because it was coupled with a range of technically-mediated forms of coordination (email, shared calendars, IM), and because face-to-face interactions were often more direct and not passed through several individuals to find the intended recipient of a message.

Reflections

While both centers exhibited what Rouncefield et al. called "constant interruption" [32], the differences in how those interruptions were managed between *Center A* and *Center B*, and the observed level of stress in the workplace, are in large part connected to the means of coordination present in each center. *Center A* had fairly dramatic breaks between staff with different roles and coordination strategies relied on synchronous communication and the immediate feedback it afforded. As Su and Mark, and Mark et al. note [23, 35], synchronous interruptions last longer than asynchronous interruptions and contribute to increased stress—this bears out in our observations at *Center A*. However, the stress level observed in some interactions was likely compounded because no alternatives to face-to-face communication were available.

Center B on the other hand used a number of recognizable office technologies to coordinate schedules, share information, and manage time between various staff members. Furthermore, clients at *Center B* were encouraged to use similar modes of communication—scheduling appointments with case managers via email, checking a shared calendar at the front desk, and generating and sending documents from the computer lab. The presence of student interns further engendered opportunistic coordination, effectively keeping organizational barriers low and fostering an atmosphere where staff and interns were overtly committed to working together to serve their homeless clientele.

These centers represent a spectrum. *Center B* was organized, and appropriated technology in ways that are similar to those of for-profit office work that has previously been studied in CSCW (e.g. [7, 24]): email, instant messaging, shared calendars, and shared document repositories were all used in support of coordinating case management and providing aid to their homeless clients. The organization at *Center B* also matched criteria recognized as fostering innovation, enabling them to more ably adopt new technologies and processes: an organic—or horizontal—organization, clear division of labor, a degree of specialization, and reasonable technical expertise [13]. In contrast, *Center A* had a very stratified organization, poor division of labor, and poor technical expertise. All of these factors help explicate why *Center A* was having some difficulty transitioning from the outreach and activism activities it was expert in toward case management; their organization structure was being taxed by growth and was poorly equipped to respond to the new demands placed on it.

Volunteerism

As noted above, volunteers play a critical role for nonprofit organizations. This was the case for both centers in our study as well. Many day to day operations were dependent on the contribution of volunteers, and staff at both centers readily acknowledged that without volunteers there would be no way for the center to provide the services it did. Yet even as volunteers were depended upon at both centers, the organization and management of the voluntary workforce was vastly different and comprised two very different kinds of volunteers.

Center A: Indentured Volunteerism

Center A had considerable physical labor needs. The main office was backed by a large warehouse that contained pallets of donated food, beverages, and clothes. Throughout the mornings on days when the food pantry was open, volunteers would work in the warehouse, moving food, packing boxes to be distributed to clients, and organizing any items that might be arriving from individual or institutional donors. Volunteers were also present in the front office doing a range of cleaning and up-keep chores. Occasionally, office management tasks like restocking forms or answering the phone were completed by volunteers, but the majority of the work involving the business of the center had to be completed by center staff as it involved private information protected by law.

The "volunteers" that were depended upon for these various physical chores invariably came from a local half-way house, and were in fact required to serve *Center A* as a condition of a criminal sentence. Briefly, in the U.S., half-way houses, sometimes called criminal deferment facilities, are residences where those convicted of lesser crimes serve out sentences that grant a work release. Individuals are permitted to leave during normal business hours to attend work and to serve the community service portion of their sentence, and must return at night or be found in violation of their parole. While associating this workforce with volunteerism is at odds with the notion of civic do-gooders out to make a productive difference, the staff at *Center A* all referred to these workers as "the volunteers."

Despite being euphemistically called volunteers, this workforce was dealt with in a very authoritarian way—one incompatible with motivating a truly volunteer workforce whose choice to donate time was not mandated by a judicial sentence. As a result, there was an exaggerated imbalance of power between the staff and the volunteers, which often played out through the micro-management of volunteers by a changing cast of staff members; any staff member could, and often would, interrupt a volunteer's current task and redirect them to something else. This inconsistency and lack of coordination between tasks and staff affected the completion of menial labor, but more importantly created a tension between staff attempting to direct a particular volunteer and the volunteers who had to endure constant requests to drop their current job and "come with me."

Where volunteerism at other nonprofit organizations has been characterized as having a high degree of autonomy [5], the volunteers at *Center A* required considerable oversight and direction by regular staff. Some of this dynamic was in part because the volunteers were compelled to work and were not volunteers by choice. However, not having a single staff member consistently in charge of the volunteers amplified the difficulties of managing the workforce and ensuring that tasks were carried out to completion.

Center B: A Community of Support

Volunteers at *Center B* also played a significant role in day to day operations and labor. In contrast to *Center A*, the volunteers were often promoted internally from clients who were currently, or had been recently enrolled in the program. After a period of time, typically 30 to 60 days, clients were allowed to volunteer at the center. Clients who elected to be volunteers were giving their time as a matter of choice, and not as a punitive measure. Moreover, due to the fact that many were alumni of the program, there was a sense of giving back to the center after having reached some measure of stability in their own lives.

The volunteer workforce could be viewed as another step along apprenticeship in the spirit of Lave and Wenger [20]. Once a client had made the role shift from recipient of care to supporting the center as a volunteer, there was an observed progression from volunteering at the periphery of *Center B* to more central roles within the volunteer workforce at *Center B*. This was a central feature that enabled the volunteer workforce to operate with little direction from staff. Furthermore, the net effect of having volunteers come from a pool of current and former clients meant that not only were the volunteers self-motivated to help, they also already possessed fairly complete knowledge of the work that needed to be done on a daily basis; from putting out breakfast in the early morning to answering phones, directing clients on the whereabouts of case managers, and generally keeping the center open amid the coming-and-going of staff between the two locations that *Center B* operated. The more senior volunteers orchestrated the work that needed to be accomplished and interacted with staff when non-routine work needed to be done.

Reflections

The differences between the two kinds of volunteers present at the two centers were dramatic. The authoritarian relation-

ship between staff and volunteers and the choice of coordinating activities was certainly influenced by the fact that staff at *Center A* were managing a volunteer workforce of individuals serving criminal sentences. Not only were these individuals watched over carefully, their presence had implications for how the center managed records with private information and where and how it made technology available. However, with no means of enabling self-organization, volunteers had no alternative to being micro-managed by staff. This close management and the extremely high rate of turnover within the volunteer workforce directly impacted the development of expertise in accomplishing much of the manual labor necessary for the day-to-day operations as well as the organizational memory of *Center A*.

On the other hand, the self-organization of volunteers at *Center B* enabled effective organizational memory and a self-sustaining culture of volunteerism within the center. This had effects on the overall relationship of staff and volunteers at the center and the ways in which various methods of coordination were employed. Face-to-face communication was still frequent when coordinating with volunteers, but digital forms of coordination were also used and even encouraged (e.g. through requests for email correspondence). This came in part because the center provided ready access to ICTs for staff, volunteers, and clients.

Data Management

Data management at the two centers consumed a considerable amount of time each day. From accounting for volunteer hours, to managing client information and tracking services provided, both centers employed multiple, redundant methods for tracking data. A large portion of the redundancy we observed was the result of having to use one mandated system for state-wide accountability of services provided to the homeless, and one or more ad-hoc systems for internal tracking, report generation, and coordination activities.

Center A: Making Do

The data management practices at *Center A* were centered around two main activities: accounting for the hours of the "volunteer" workforce and updating records for the clients receiving services. To keep track of volunteer hours, a log book in the front office was used for volunteers to sign in and sign out. At the end of each day the volunteer coordinator would make sure the books were symmetrical (all those who signed in had signed out) and would note the number of hours next to each name. At week's end, totals were generated and communicated back to the half-way house.

At the time of our observations, *Center A* was in the process of creating an Excel spreadsheet (referred to by the staff as a *atabase*) to simplify tracking of volunteers, as the current method was imprecise and paper-heavy. The move to create the database had one of the front office staff going through a large back-log of volunteer data and entering it into Excel, while on-going accounting of volunteer hours continued on the paper-based system (adding to the back-log of data that needed to be entered).

While the director of *Center A* had a strong desire to move to a computer based system to track volunteers, the staff continued to use the paper-based system. Their preference for

the paper-based system was based on the fact that it was sufficiently ambiguous, enabling negotiation between the staff and the volunteers when problems or inconsistencies arose in the accounting of hours; e.g. in several instances, a volunteer would have forgotten to sign-in or out and would need to negotiate with the staff in order to get credit for hours worked.

Where the electronic tracking of volunteer hours would simplify some of the work to account and report hours to the half-way house, it was perceived as undermining the social negotiation between volunteers and staff. Given the dynamic of the organization at *Center A*, the ability for volunteers to negotiate with staff over hours was a rare instance where the authoritarian boundary between staff and volunteer would soften. The staff often gave the benefit of the doubt to the volunteer, providing an opportunity to do the right thing, to act honestly, the tacit agreement being that if the volunteer prevaricated they would not be asked back and would need to find another way of fulfilling their community service sentence. This dynamic and constructive relationship with the volunteers was a key social mechanic in keeping the volunteer workforce motivated.

The second set of data management practices, and by far the most important to *Center A*'s activities, was in support of managing case-files for clients. The most central system in this practice is a community support application called Pathways, the use of which is mandated by State funding agencies. Pathways is a case management web application that was developed specifically for aiding homeless outreach centers in their provision of service. Client information is entered into the system along with case management notes, a history of aid received, current address or shelter, as well as information about immediate family and cohabiters. Some of the information in Pathways is protected; for instance access to case management notes was restricted on an organization by organization basis (preventing two organizations from sharing case management notes via Pathways), but access to aid history, including the kind of aid and the amount of any financial aid is visible across organizations.

The most consistent reaction to Pathways was an apathy toward the system. There were two points of frustration: first, the connection to the Pathways web application was slow. During peak hours when clients would come to *Center A* for the food pantry, case managers only had about 20 minutes per client to enter information into Pathways and conduct a short needs assessment and counseling session. Due to their slow connection to Pathways, the case managers reported frustration that they spent most of their time in data entry and not in interacting with the client in a more productive manner. This was compounded by the need to enter duplicate information in *other* systems, as the Pathways system, while being mandated by funding organizations at the city and state level, did not generate the demographic reports also required by those same funding bodies.

Second, case managers were frustrated that they did not have a better way to collaborate with external centers through Pathways. The case managers at *Center A* depended on support from external organizations as they constructed financial aid for their clients. A condition of the rent and utility

assistance grants was that the money provided be enough to completely pay for a service—either a months rent, or the entirety of overdue charges with a utility company. A case manager would regularly need to coordinate smaller dollar amounts contributed by several organizations, however there was no central clearinghouse, via Pathways or otherwise, that helped the case manager identify organizations with available resources. The only mechanism available was a sheet of paper with phone numbers which the case manager would call, one after the next, in an attempt to secure funding.

Center B: Computer Supported & Working

The case managers at *Center B* were also not pleased about having to use Pathways, though issues expressed at *Center A* like poor responsiveness and the inability to generate appropriate reports were not corroborated at *Center B*—in fact, the staff member in charge of Pathways at *Center B* noted that Pathways could be customized to the needs of the particular organization. However, just as with *Center A*, some data at *Center B* was duplicated in order to be better used for coordination within the center.

A common cause for duplicating data management was to more easily facilitate organizing work across several disparate systems. As part of the job readiness services that *Center B* provided, clients were enrolled in a voicemail program that provided a phone number and voicemail account. The program was run nationwide and the case manager in charge of enrolling clients had to duplicate work across three systems: Pathways, as part of the normal course of client enrollment; the national voicemail program; and her own set of documents that she had developed to simplify managing aggregate data on current clients.

Regarding the use of Pathways at *Center B*, the most significant issue we observed was the poor affordances it provided for helping case managers coordinate across centers. Despite being built specifically as a software platform to support coordination, Pathways had what appeared to be arbitrary barriers frustrating that coordination. For example, the list of local organizations in Pathways was done by three letter codes that appeared randomly assigned. There was no obvious connection—mnemonic or otherwise—to be made between the codes in the system and the organizations themselves. This led to one case manager keeping a list of local centers and their three letter codes taped to his monitor so that he could follow up with specific centers if questions arose about a particular client's history of care.

A second point to be made about the use of Pathways at *Center B* was the way case managers used the client history. Where our expectation was that a client's case history would be used to help the case manager tailor aid in a constructive manner, the case managers more readily described using this information as a way to identify—and curtail—potential abuse of services. For example, if a client's Pathways history was particularly long, the case manager might deny or limit the client's access to further services.

Reflections

Despite the relatively apathetic response case managers at both centers had to Pathways, the system played an impor-

tant role in how they worked with their homeless clients. Both centers relied on Pathways to reconstruct the context of care for a given client. Having access to a history of received aid helped indicate if the client was chronically homeless, or if the current situation was new or infrequent. While the ability to construct this kind of context for a client was important, the limitations on being able to view case management notes or information about service at other centers meant that Pathways played only a peripheral role in the effort to coordinate care with external organizations.

Further, where some aspects of Pathways are analogous to medical records and might be assumed to enable informed longitudinal care, the use of Pathways at the centers was more akin to a credit score indicating potential for abuse and whether an individual was likely to successfully complete the program or attempt to take advantage of the system. Seen in this light, the Pathways system provided utility in managing administrative risk for the centers more so than it helped scaffold care for the homeless. This points both to the complex social issues present when working with the homeless population, and demonstrates how ICTs and systems designed to support cooperation can also become tools of enforcement.

Pathways' primary role in both centers could best be described as one of accountability. Both at the level of the outreach center and at various government levels, data in Pathways were used to track the appropriate provision of social services. As both centers acted as conduits for public funds, they were obligated to meet the varied data collection requirements set out by those grants. Different public grants had different, but often overlapping sets of requirements. In provisioning service to their clients, both centers collected data based on the *union* of all sets of these requirements, rather than *selectively* collecting only the data required by the specific grant that supported a particular service.

The consequences of this broad data collection have implications for both the homeless client and the case manager. By collecting more personal information than is strictly necessary, there are privacy ramifications for the homeless clients as the personal history recorded in Pathways is beyond the control of the homeless individual. This creates an additional imbalance of power for the homeless when information about them is incorrect or misrepresented—especially in light of Pathways' records being used punitively. For the case managers, the practice of adhering to all requirements at all times, rather than just those necessary for a given service, impinged on their discretionary freedom. The constraints on discretion created by the accounting aspects of Pathways were pointed to in *Center A* as leading to a degradation of service. This perception, at least at the case manager level, highlights Lipsky's prescient observation that "accountability is virtually impossible to achieve among lower-level workers who exercise high degrees of discretion... the results may not simply be ineffective but may also lead to an erosion of service quality" [22, pg. 159].

As for the observed duplication of data present at both centers, the reasons for doing so differed: in one case, duplication was made necessary because Pathways was incapable of generating the necessary reports; in the other case, oppor-

tunistic duplication was employed to simplify frequent tasks of coordination. These differences speak to the relative integration of ICTs across these two organizations, where staff at *Center A* had not been able to successfully customize Pathways and were forced to keep duplicate records to meet external mandates, the staff at *Center B* had the support they needed and duplicated work as a matter of opportunistically facilitating internal coordination.

DISCUSSION

The unique topography of these two nonprofit organizations suggest areas of relevance to the CSCW community; specifically, there is a need for coordination technologies to help organizations such as these grow and manage their activities, especially in climates where government support of social services is on the decline. The challenge here is in how to bring these technologies into environments without professional IT management, and in a way that supports rather than disrupts the ability for these organizations to be responsive and connected to their communities. Technically sophisticated organizations, such as *Center B*, were able to adopt a range of coordination technologies without issue; however, the challenges observed at *Center A* point to the difficulty of integrating technologies such as shared calendars or document repositories into organizations with limited IT resources and expertise.

While the work process at the two centers varied considerably, they both had to develop strategies for coping with relatively high turnover and with motivating and working with a large volunteer workforce. One of the strengths of the organization at *Center B* was its culture of apprenticeship that spanned client, volunteers, interns, and new staff. The cooperative atmosphere encourage coordination and developed a high-functioning organizational memory. Yet despite these strengths, developing expertise and stability in certain job roles remained a challenge for *Center B*—so much so that the IT manager expressed a wish for a more regimented workflow system to help enforce procedure and policy across generations of staff and volunteers.

This need is reminiscent of highly-formalized workflow systems like the Coordinator [9]. While these systems were once the topic of considerable debate in the CSCW community [36, 41], our findings suggest that there may yet be a role for such systems as a means to mitigate the organizational cost of unskilled workers and high turnover at nonprofit organizations. Capturing work practice in a formal system could be conceived in a way that fits within an existing practice of situated learning and helps capture organizational knowledge from one generation of staff and volunteers to the next.

That said, there is clearly a balance that needs to be struck between enabling the capture of an evolving set of best practices and mandating the use of a particular system. In particular, the diversity present in non-profit organizations means that mandated, one-size-fits-all systems—at least in the form embodied by Pathways—may be insufficient at best and at worst compromise the discretionary powers of case managers or move those powers into the hands of far-removed systems designers [4]. Where others have pointed to the

need for ambiguity in systems that support communication and reflection [1, 10], we would strongly advocate for ambiguity as necessary for systems supporting the nonprofit; both as a way to support volunteer autonomy and control over technology in use, and through information systems that track clients, enabling identity management without subverting an equitable distribution of resources [11].

Furthermore, better cross center integration in support of decision making would benefit case managers trying to weigh degrees of need and urgency against limited resources. While Pathways was used by both centers to keep track of case management notes, those notes were only available to internal staff and could not be read by staff at cooperating centers. The only globally shared information was the record of received aid, and in terms of providing care to the homeless clients is akin to a medical doctor only seeing a list of medications prescribed without being able to consult the diagnosis that lead to those prescriptions. Moreover, both centers noted this history as useful for enforcement—a punitive utility rather than a constructive one.

Some of the limitations on information sharing are no doubt in place to protect individuals who are the targets of abuse and to deal with the fact that not all outreach organizations operate aboveboard; however, the absence of a good set of shared data, and clearer guidelines and practice in entering case notes, did not help the two centers we observed in collaborating with external agencies.

CONCLUSION

The study presented here suggests a number of challenges facing U.S. nonprofit organizations. While nonprofit social support organizations have similar and overlapping organizational needs, they are as diverse as the clients they serve. We have highlighted some of the contrasts in the way two such centers self-organize and make use of technology in service to their clients. In considering a continuum of practice, nonprofit organizations that are able to develop better integration of ICTs and develop a strong community of practice that encompasses both paid and volunteer workforces are better positioned to provide coordinated care to some of the most vulnerable members of society. Yet the fact that most ICTs are designed for the more traditional for-profit workplace can frustrate nonprofit organizations by failing to accommodate the specific needs that arise from constrained access to technical skill and regular turnover in both paid and volunteer workers.

Furthermore, the context of cooperation within the nonprofit outreach center is complicated by organizational structure and power imbalances across the full gambit of individuals involved in the center—ranging from management, staff, volunteers, to those served by the center. There is an opportunity here to build systems designed specifically with these constraints in mind, and with better support for coordination across various organizations. While we observed the use of a system intended to fill that role, it was clear from our findings that many of the lessons learned in developing technologies that support human communication and cooperation have not been put to use in developing support systems for the nonprofit sector.

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