

# Understanding the Types of Knowledge Representations That Meet Non-Profit Organizations' Knowledge Needs

**Dinesh Rathi**

School of Library and Information  
Studies University of Alberta  
Edmonton, Alberta  
drathi@ualberta.ca

**Lisa M. Given**

School of Information Studies &  
RIPPLE  
Charles Sturt University  
Wagga Wagga, Australia  
lgiven@csu.edu.au

**Eric Forcier**

School of Library and Information  
Studies University of Alberta  
Edmonton, Alberta  
eforcier@ualberta.ca

## ABSTRACT

The not-for-profit sector is an important area for research, since the organizations operating in this domain contribute in many ways to our society (e.g., social value and GDP). Non-profit organizations (NPOs) are highly knowledge-oriented units. Knowledge management (KM) has been researched in breadth and depth in FPOs, where it has been demonstrated that KM plays a significant role in the success of these organizations. According to the literature, KM is equally important to non-profits, and yet the sector has received comparatively scant attention in the KM literature. There is limited understanding on the knowledge needs of NPOs and thus, this paper seeks to provide insight into the NPO-KM landscape. The authors conducted multi-phase research with NPOs operating in different parts of Canada, including an online survey of Canadian charities. Through the analysis of survey results, twelve broad categories of knowledge types and their sub-categories relevant to NPOs have been identified. This paper aims to contribute generally to the growing body of KM literature (i.e., beyond dichotomous model of tacit and explicit knowledge) and more specifically to the NPO-KM space.

## Keywords

Knowledge management, types of knowledge, social media, non-profit organizations, NPOs, non-government organization, NGOs, philanthropy, charities, associations, foundations, survey, qualitative research.

## INTRODUCTION

According to the summary sheet on Non-Profit Organizations published by the Fraser Institute's Donner Canadian Foundation Awards website, the NPO domain "contributes goods and services valued at \$34.7 billion, or 4 percent of the nation's GDP [Gross Domestic Product], when the value of volunteer work is incorporated;" when

hospitals, universities and colleges are included, then it contributes "about \$61.8 billion, or 6.8 percent of the nation's GDP" (donnerawards.org, n.d. p.1). Similarly, in the United States, the NPO sector in 2005 was estimated to be at \$225.9 billion when the estimated labor value was calculated (Andreasen, 2005). Despite these figures, the NPO sector has not received much attention in the knowledge management literature. There is a need for research from multiple perspectives, such as marketing, management, financing, training and knowledge management (KM) practices. This paper reports on one study that was designed to provide insight on the KM needs of the NPO sector in Canada.

KM is defined as "the process by which an organization creates, captures, acquires, and uses knowledge to support and improve the performance of the organization" (Kinney, 1998 as cited Hurley and Green, 2005 p.1). The value of KM as a framework for understanding how organizational knowledge is identified, created, stored, and shared has long been established in the context of SMEs and large for-profit organizations (Davenport and Prusak, 2000; Baskerville and Dulipovici 2006; Prusak 2001).

Having KM systems and strategies in place can help in effective utilization of resources in an organization. For example, managing knowledge through the use and share of best practices saved Chevron (an oil company) \$2.0 billion in seven years and Texas Instruments increased their production capacity by \$1.5 billion in different manufacturing plants (O'Dell and Grayson, 1999 as cited in Goh, 2002). Pan and Scarbrough (1998) presented the case example of Buckman Laboratories, which received "tangible benefits from the management of knowledge, including dramatic improvements in customer response times and product innovation rates" (p.55).

The primary purpose of for-profit organizations is to create economic value and generate profit for the stakeholders. This purpose is in contrast to the NPOs' purpose, which is not for maximizing monetary profit value but to maximize 'social value' for the stakeholders, i.e., society (Lettieri et al., 2004, p.16). NPOs are always striving to do better and it is an interesting sector because it has over a period of time

adopted many advanced management practices, particularly in areas such as marketing (Andreasen et al. 2005) to remain relevant and to compete in both NPO and FPO domains. For example, within the NPO domain, an organization may compete for target audiences' attention, funding and even for volunteers (Gregory and Rathi, 2008). Outside of the NPO domain, an organization may compete with an FPO for government attention to a particular cause (such as genetically-modified products), even when the two organization types may have contrasting interests.

NPOs are people-driven and typically serve shared public interests (Teegan et al. 2004) often with small budgets, a limited pool of skilled workers, and other restrictions (Liu, 2012; Weerawardena et al., 2010). Hence they are in constant flux and grappling with issues such as looking for funding opportunities, recruiting and managing volunteers, connecting with donors, and interacting with government. Thus NPOs, like FPOs, also need to be efficient and effective in managing their resources. One example of how this can be achieved is by adequately managing knowledge emerging from numerous sources such as staff, volunteers, board members, donors, organizational partners, members, clients, government, and user communities. A good KM system should help NPOs in managing their workflow, activities, resources and allowing them to make strong gains (like Chevron, Texas Instruments and Buckman Laboratories) through the effective use of KM systems.

One of the important aspects in developing and moving the KM domain forward from a NPO perspective is to understand their knowledge needs. In the FPO sector, researchers have conducted studies to identify the different types of knowledge needs but the NPO sector has not been studied in the same way. This research contributes to this KM-NPO domain by identifying the types of knowledge that are important for organizations in the non-profit sector. We hope that this paper will inspire other researchers to conduct research to further refine and develop a more robust knowledge need framework for the NPO sector.

## LITERATURE REVIEW

KM is a concept that has roots in the FPO sector; however, the NPO sector has not been researched from a KM perspective in the same way or in the same depth as the FPO sector. Only recently have researchers written about the importance of KM in NPOs (including public libraries) and begun the work of revealing KM's worth to the sector (e.g., Vasconcelos et al., 2005; Lemieux and Dalkir, 2006; Gregory and Rathi, 2008; Huck et al. 2011; Given et al., 2013; Forcier et al., 2013a; Forcier et al. 2013b). All types of NPOs (i.e., small, medium-sized and large size organizations) can gain from KM practices, as they are also knowledge organizations (Renshaw and Krishnaswamy, 2009) and devoted to benefiting society. The initial focus of early KM studies in NPOs was primarily on large

organizations (e.g., Enright, 2005; Gilmour and Stancliffe, 2004), so small and medium-sized NPOs are still not included in much KM research.

Knowledge is considered as one of the most important assets for both FPOs and NPOs that will help organizations to maintain their competitive edge (Goh, 2002). Knowledge "is an individual's interpretation of information based on personal experiences, skills, and competencies" (Bollinger and Smith, 2001 p.9). Davenport and Prusak (2000) define knowledge as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information." There are many sources of knowledge in an organization including databases, documents, repositories, practices, processes, norms, etc. (ibid; Grayson and O'Dell, 1998 as cited in Bollinger and Smith, 2001). Even though researchers have tried to create distinctions between information and knowledge the distinction between the two remains unclear in the majority of the KM literature. This is evident from the above definition, as well, which includes the term (contextual) information. It is unclear because "KM practices focus mainly on knowledge representations not on knowledge *per se* (Gourlay, 2000 as cited in Bouthillier and Shearer, 2002). Thus, any categorization of knowledge needs or types of knowledge focuses, primarily, on the knowledge representation aspects (i.e., signifiers) that help organizations to use and reuse knowledge for putting resources to more effective and efficient use. Clancey (1997), as cited in Gourlay (2000), suggested that knowledge representations are of internal (e.g., related to brain) and external (e.g., books, computer file, etc.) types.

In the literature, researchers have identified and created different types of knowledge at a high conceptual level. For example, one of the most famous and most discussed knowledge types includes the dichotomous model of tacit and explicit knowledge (Nonaka, 1994); here, all organizational knowledge needs were classified into these two broad categories. For example, Goh (2002) suggested that examples of explicit types of knowledge include manuals, reports, databases, etc., while examples of tacit knowledge types will include expertise and mental models.

Other examples of broad categories that are *polytomous* models (in contrast to *dichotomous* models) include: tacit, explicit and cultural by Choo (1998); personal, proprietary, public knowledge and common sense by Boisot (1998) (both cited in Bouthillier and Shearer, 2002); and, De Jong and Ferguson-Hessler (1996), citing their own work, identified four types of knowledge namely situational, conceptual, procedural and strategic (p. 106). The authors also cited Alexander and Judy (1988) who identified three types of knowledge, namely declarative, procedural and conditional (ibid). Jakubik (2007) cited Spender (1996 & 1998) who, using an ontological framework, suggested

social knowledge and individual knowledge; these were further sub-categorized as collective and objective knowledge, and automatic and conscious knowledge, respectively (p.8).

Markus (2001) presented an interesting and alternate view to the knowledge types or knowledge representations approach. The author suggested that different types of repositories are important in managing knowledge in an organization and these repositories can be linked to the types of knowledge associated with each repository type. Similarly, Nonaka et al. (2000) proposed an alternate model of knowledge categorization. This was based on the idea of 'knowledge assets' and the authors identified experiential (e.g., skills gained through experiences), conceptual (e.g., brand equity), systemic (e.g., manual, patents), and routine (e.g., actions and practices) as the four types of knowledge assets, with each type further sub-categorized (see pg. 15-16). Pan and Scarbrough (1998) identified customer knowledge, competitive intelligence, process knowledge and product knowledge as the four broad types of knowledge that were shared in the organization.

Overall, four different views of knowledge have emerged in the literature, which Jakubik (2007) identifies as ontological, epistemological, commodity and community views of knowledge. It is important to highlight that all the different knowledge models and/or types discussed previously can be classified into one of these four views of knowledge.

The knowledge representations, or 'types', that are proposed in this paper transcend different models and views of knowledge. This paper serves as a first step to move beyond high or broad-level dichotomous and polytomous models of knowledge. It drills down into the specifics of knowledge representations (e.g., knowledge about expertise, manuals, etc.) by developing a knowledge representation model in the form of categories and sub-categories of knowledge types. These types are useful, yet generic enough to apply to different types of organizations within the NPO sector. This will allow us to better understand the NPO-KM landscape.

## RESEARCH DESIGN

This study was conducted in non-profit organizations (NPOs) in Canada in two phases. Phase 1 involved individual and small group interviews with people working in sixteen NPOs within Alberta, Canada. Interviews (of one to two hours) were semi-structured and explored KM practices and social media use in NPOs. NPOs were involved in domains such as hospitals, health organizations, food banks, shelters, student associations, advocacy groups, legal education centers, cultural foundations, and public libraries.

Phase 2 extended the research completed in Phase 1 by implementing a cross-Canada survey of NPOs regarding

their KM and social media use. NPOs were selected from the publicly accessible online registry provided by the Canada Revenue Agency (CRA) (<http://www.cra-arc.gc.ca>). The registry was used to create a mailing list of registered charities and the survey was sent to listed organizations via email, inviting them to participate in an online survey administered using SurveyMonkey. Surveyed NPOs were operating in domains such as animal welfare; social services (e.g., welfare organization); religion (e.g., missionary organization, congregations); health (e.g., hospitals and health services); culture & arts (e.g., libraries, arts promotion, museum); and community (e.g., fraternal societies, service clubs). A unique URL was generated for each invited email id to ensure that only one response was received per email invite. The online survey closed in February 2014 and over 2000 responses were received from NPOs across Canada. These responses include people who agreed to participate in the survey but may or may not have completed all questions (e.g., skipped a particular question if they did not want to answer).

The survey consisted of a number of questions and took approximately 30 - 45 minutes for respondents to complete. For this paper, we explore several questions that address the different types of knowledge and knowledge needs of NPOs. The findings discussed in this paper address answers to a particular question that sought to understand the needs of NPOs around three broad areas, or knowledge types; these types emerged from our Phase 1 interviews and were published in Given, et al (2013). Those broad areas included: a) "knowledge about our clients/community and their needs" (i.e., community-generated knowledge); b) "The expert knowledge and experience of our staff and/or volunteers" (i.e., expert knowledge); and, c) "The documented knowledge about processes and procedures essential to the operation of our organization" (i.e., procedural knowledge). The survey questions included free text (i.e., 'other') questions wherein respondents were asked to provide more information if the current set of pre-defined responses were inadequate to describe their activities. Over 200 respondents gave additional information on the types of knowledge that are important for their organizations. We analyzed these responses to understand the different knowledge needs of NPOs.

Data analysis of textual data used a grounded theory approach to identify emergent themes and patterns from the qualitative responses in the 'other' field. The use of grounded theory, particularly as defined by the work of authors such as Charmaz (2002) and Bryant & Charmaz (2010) was adopted, as this approach permits the development of emergent theoretical models through the empirical analysis of qualitative data.

We created a text file for the extracted data on knowledge types submitted by respondents, which was used to code categories and sub-categories. The categories were

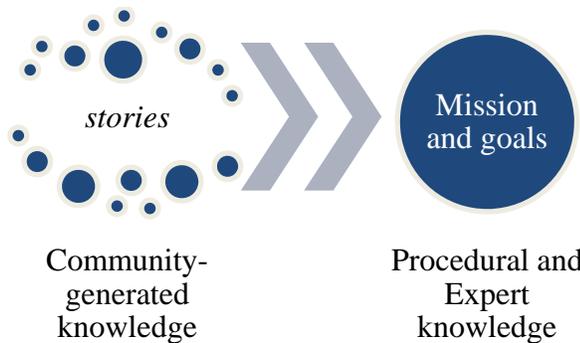
developed by the co-authors in a two-step process. First, we developed labels of types of knowledge at a very broad level; second, we reviewed and consolidated the categories, generating additional sub-categories. This process resulted in 12 broad-level knowledge types among NPOs, as well as a list of sub-types.

Identifying and creating categories of different types of knowledge essential to these organizations will help NPOs, not to mention other researchers, to develop a better and deeper understanding of the knowledge needs of the not-for-profit sector. The findings (including labels of categories and sub-categories, with examples) are discussed in the following section. The current paper reflects our ongoing engagement with this area of research, expanding on earlier work in the study of the knowledge needs of NPOs.

**FINDINGS & DISCUSSION**

In the first phase of this study, 16 exploratory interviews with small and medium-sized NPOs in Alberta, Canada suggested a broad classification of knowledge types indicative of a cyclical process for the generation and sharing of organizational knowledge (Given et al., 2013; Forcier et al., 2013b). Findings from these interviews proposed three distinct classes of organizational knowledge:

- *Procedural knowledge* (knowledge related to policies, procedures and administration);
- *Expert knowledge* (expertise and experience of the knowledge community within which the organization participates); and,
- *Community-generated knowledge* (the stories that emerge from the community).



**Figure 1:** Organizational Knowledge Generation Process [Source: Given et al., 2013].

In an earlier discussion about the role of storytelling in the knowledge management of NPOs, the process demonstrated that "community-generated knowledge informs the mission and goals of the NPO, which in turn generates procedural and expert knowledge. Expert knowledge is used to produce products, programs or services for (the betterment

of) the community, which ultimately drives the community to generate new knowledge valuable to the organization: i.e., 'success stories.'" (Given, Rathi and Forcier, 2013, p.8; Figure 1)



**Figure 2:** Word cloud showing 27 key words and phrases used by survey respondents

In the second phase of the study, we wanted to further explore these notions of distinct organizational knowledge types and of a knowledge generation process, in order to address the unique KM needs of NPOs, directly. The online survey asked respondents to rate the importance of procedural, expert and community-generated knowledge to the operation of their organization. Respondents were also invited to provide additional categories important for their organization that were not specifically addressed in the current formulation. It is from these 'other' categories supplied by survey respondents (see Figure 2, a word cloud representing thematic keywords from these responses) that we generated the following 12 knowledge types. Once these types were described with examples from the survey responses, the analysis revisited the process proposed in our earlier work and examined how these new findings converged in developing our understanding of NPOs' KM needs. Examples of responses in the sections that follow have been numbered by respondent, for reference purposes, in the order that they are discussed.

**1. Knowledge about Community**

'Community' as a concept appears deceptively simple. In our research on NPOs, it has been used strictly to define the *group (or groups) of people* that share a) an *interest* in a mission or cause, as well as b) a *discourse* related to the achievement of said mission. The example of 'success stories' represents "community-generated knowledge" that emerges through the network of interactions within such a community, and proves valuable to an NPO in promoting and achieving organizational goals (Given et al. 2013). In this sense, a community can comprise all members, clients, customers, donors, volunteers, staff, expert consultants, partners (individuals, other agencies) and stakeholders of an

organization, a characterization that—notably—surpasses operational (i.e., internal/external) boundaries.

Interestingly, respondents rightly identified a number of instances where community-related information did not neatly fit the category of "community-generated knowledge". For instance, Respondent 1 wrote "knowledge of affiliations and possible affiliations", which emphasizes the need for strategic partnerships and linkages between agencies to ensure the success of the organization. For NPOs, such "possible affiliations" will rely on information about agencies or individuals outside the organization that are not necessarily members of the public or existing stakeholders in the organization. Knowledge of these affiliations are not "generated" by the community, necessarily; yet, as potential partners or associates, they remain *of* the community.

Another respondent noted the value of "community awareness/perception of our organization and its beliefs (i.e. that relate to public behaviour-change etc.)" (Respondent 2). This example *does* connect directly with the concept of "community-generated knowledge" as previously developed, since the collection of stories and other feedback from members, clients, customers, donors and volunteers maps how the organization is perceived by its stakeholders. In this sense it is knowledge that is clearly 'generated'—created—by the community. However, this emphasis on "awareness" of public perceptions and behavioral change points to the need for the organization to manage and adjust its image to match the needs of the community. Community, thus, is fluid and shifting, and the needs of the organization reflect the needs of the community (or communities) with which it associates.

"It is important to note," wrote one respondent, "that we are defining multiple communities, only one of which is geographically local." (Respondent 3) This example further emphasizes the complexity of arriving at an understanding of community in the context of organizational knowledge by indicating that the NPO is involved with not one but multiple communities.

These examples and others revealed that the process we observed emerging from interviews in the earlier phase of the study had not been fully articulated; it presumed a separation between "community" and "the organization", when in reality "the organization" represents merely a focal point and systematizing presence within a community or set of communities. It is the goal of the NPO to help define and shape these communities, and to be defined by and shaped, in turn, by the communities' other members; but, it cannot be extricated from these structures.

Therefore, as a fundamental type of knowledge essential to the NPO, 'knowledge about community' represents the needs of acquiring, disseminating and generating knowledge about the communities it belongs to and serves.

## 2. Knowledge on Trends and Current Events

Trends represent a tendency towards a particular approach/practice/attitude/technology/product in industry and popular culture. Trends, in addition to the headlines of the day that mark key events in a particular community, domain, industry or country, are forms of knowledge that impact the operations of NPOs, both day-to-day and long-term. A scientific breakthrough might, for instance, impact how charities might advocate for research into a particular disease; the adoption of a particular form of social media by other organizations and members of the public might drive an NPO to develop a new media strategy and adopt it as well to improve outreach to such organizations and members (e.g., trends on the use of specific social networking tools like WhatsApp in India); shifts in local and global economies and investments might significantly affect the funding and resources available to an NPO; emergence of new issues both at national and international level (e.g., climate change); etc. The need to acquire knowledge of such trends, especially in as timely a fashion as possible, was repeatedly emphasized by survey respondents. For example:

- "The national and international trends in our area of work. These aren't necessarily 'clients'" (Respondent 4);
- "Trends occurring at both Federal and Provincial Gov't levels regarding our clientele. (new programs, new funding, changes to existing programs, etc.)" (Respondent 5);
- "Knowledge about events happening on a national and international level. Knowledge about changes happening at a political level. Knowledge about our community partners. Knowledge about trends in the non-profit world" (Respondent 6); and,
- "[S]cientific research findings, knowledge about global activities outside our own community" (Respondent 7).

These examples demonstrate how trends play an important part in the management of NPOs. As a type of knowledge, knowledge on trends and current events might span all three categories: procedural, expert and community-generated. Trends may be procedural as data documented over time; they may represent expert insight in interpreting the significance of tendencies within a sector or society; and, they may be community-generated, as the buzz that surrounds popular tools and technologies reaches the NPO through its connections within the community.

## 3. Knowledge on Policies and Legislation

It is very important for NPOs to know the "law and policy that apply" (Respondent 8) to their area of operations, whether that is as a charity accepting donations of money or goods, as an advocate lobbying for a particular population or cause, or as a provider of treatment, housing, education or public services within their communities.

For instance, it is essential for a charity to possess "knowledge about what our type of organization is allowed to do with its funds raised. Also with what our designated donee is doing with [the funds]" (Respondent 9); "Current changes in laws regarding school and school procedures in regards to support where children with disabilities are concerned" (Respondent 10); and, "Knowledge of applicable legislation and laws governing the organization" (Respondent 11). Without such knowledge of relevant local, provincial and federal laws and public policies, the NPO will be unable to succeed in achieving its goals. This type of knowledge is documented and explicit; it represents primarily procedural knowledge, although organizations rely on expert insight in interpreting and applying such knowledge in a practical context.

#### 4. Knowledge about Resources

Organizations need to manage a variety of resources; financial, physical, human, and intellectual resources are all equally important in achieving organizational goals. These must be identified and appropriately managed. Thus, knowledge about resources that are necessary or desired is itself a valuable commodity for NPOs. Respondents provided the following examples of knowledge representative of this category:

- "[C]osts of materials essential to our service" (Respondent 12).
- "Funding amounts available in the community for our efforts and the hours needed to provide these services = balance of offerings and sustainability" (Respondent 13).
- "Knowledge of local natural resources and trails" (Respondent 14).

While the type of resources may vary, the need for this type of knowledge is quite clear. "Knowledge about Sources of Funding", may be considered in relation to this category, or as a sub-category of "Knowledge about Resources".

#### 5. Knowledge about External Environments

Whereas "knowledge about community" focuses on *people*, and groups of people that share the same interests and discourse, this category focuses on all environments *external* to the NPO and its mission or goals that still might be affected by it or that might exert some form of influence upon it. As a broad category, such external influences take on a number of forms, including: political actions on local, regional, national or international stages; contextual knowledge about the geographic region in which an organization operates or the distinct cultures of that region; or, knowledge about history. Contextual information of this latter sub-type we describe as 'situated knowledge', since it reflects knowledge of the environment in which a particular

organization is embedded. Examples raised by respondents include:

- Knowledge of the region and its growth and sustainability plans. (Respondent 15).
- "Knowledge about how this area is changing as more information is learned in the medical area and as well as how society's expectations and understanding of aging, dying and grief management is perceived" (Respondent 16).
- Knowledge about local terrain and geography. As a rescue group, our clients['] needs are emergencies of life. We cannot do this without knowledge/experience and the P&P or SOG keep us safe. All are equally important. Terrain and geography are important but we can make do, improvise or grab someone who knows more. (Respondent 17).

These examples represent both forms of 'situated knowledge' and other types of necessary knowledge about external environments. A deeper discussion regarding the distinction between 'community' and 'environment' would have wide-ranging theoretical implications, not only in the knowledge management of NPOs, but for all organizations. This is a possible direction for future analysis and research.

#### 6. Knowledge about Benchmarks and Best Practices

Many survey respondents identified "best practices", as well as "professional standards" and "industry standards" as essential forms of knowledge. For example:

- "Professional standards; legislation and regulations; industry standards" (Respondent 18).
- "[K]nowledge of best and promising practices related to the services we offer" (Respondent 19).
- "A knowledge of policies/best practices within the various levels of government that we work with in our day-to-day business. A knowledge of best practices within the various human and social services fields our agency represents". (Respondent 20).

Ostensibly, these might be characterized broadly as expert knowledge (i.e., "expertise and experience of the knowledge community within which the organization participates"); however, as a 'best practice' is a collectively accepted or preferred method or approach to an activity, there are also elements of the procedural and of community-generation. The need to remain knowledgeable about benchmarks and best practices, as "standards of excellence ..." (Respondent 21), is similar to the previously identified category of "Knowledge on Trends and Current Events". This type of knowledge is most valuable when it is most timely; what is an industry best practice today may not be a best practice in the future.

## 7. Knowledge about Management and Organizational Practices

This is a very broad category that encompasses the documentation and dissemination of day-to-day processes, procedures and practices necessary for the operation of the organization. These include: documented internal directives, policies and procedures, such as what might be found in manuals or on internal websites; knowledge about organizational processes, which may or may not be documented; knowledge for contingencies and emergency protocols, i.e., in one example, a respondent describes a scenario in which an emergency occurs and a staff member or volunteer must know "who to call" (Respondent 3). Other examples include:

- "Mission, Vision, Values should be understood to guide all knowledge, policies and procedures and knowledge management" (Respondent 22).
- "[K]nowledge of your goals and objectives as an organization ..." (Respondent 23).

This category closely aligns with that of "procedural knowledge" originally observed in the phase 1 interviews. "Knowledge about Management and Organizational Practices" reserves itself to explicit forms of knowledge. It is distinguished from "Experiential Knowledge" (discussed later in this paper), which might include examples of tacit knowledge such as expertise in management practices (e.g., conflict resolution, quality assurance) and internal practices that rely on the knowledge of technical experts.

## 8. Knowledge of Artifacts and Archival Materials

It is important to note that 14% of survey respondents identified themselves as "culture and arts" organizations, including libraries, museums, archives and historical preservation sites. It is perhaps for this reason that knowledge related to artifacts appeared several times in answers to the question analyzed:

- "We are a historical preservation organization, so information about that history is critical" (Respondent 24).
- "Documented knowledge as in an archives - recorded history" (Respondent 25).
- "Organizational and Board history... Past programs, member participation, new audiences... Audited Financial Statements going back to our founding" (Respondent 26).

These examples point to two important kinds of knowledge of historical significance: a) knowledge relating to specific objects or documents of historical significance (i.e., artifacts, as in a museum or an archive); and, b) historical documents related to the preservation of organizational memory. The difference between these two sub-types is that

the second category is limited to the culture of the organization, while the first has a broader mandate aligning with the NPO's goals.

This type of knowledge appears to combine elements of the procedural (i.e., these are physical objects and documents, and as such represent explicit knowledge that impacts, albeit indirectly, the operation of the organization as done in the past) and the expert (i.e., subject matter experts play an important role in determining the provenance of these objects and managing the knowledge they contain).

## 9. Knowledge about Sources of Funding

Not surprisingly, funding sources were of primary importance to NPOs responding to the survey. As a central function of the organization, this category may interrelate closely with several other knowledge types, including: "Knowledge about Community", "Knowledge about Resources", "Knowledge of Policies and Legislation", "Knowledge about Management and Organizational Practices" and "Experiential Knowledge". In some cases respondents framed this type of knowledge in relation to donors, for example:

- "[T]he knowledge of the primary source of our funding and the ethics involved to ensure our donor has [their] financial practices met" (Respondent 27).
- "Knowledge regarding opportunity for funding and financial management" (Respondent 28).

In other cases, respondents focused on the practice of obtaining funding (such as grant-writing or fundraising):

- "To know where and how to access funding - such as grants and to be successful in their application and follow up reporting" (Respondent 29).
- "Links of our organization with other groups who also fund similar activities to avoid over/under- funding" (Respondent 30).

Others described it in terms of expertise and policy knowledge around funding and related activities (e.g., "research techniques and funding conventions" (Respondent 31)).

This type of knowledge speaks to a particular need of NPOs that takes a unique form from other kinds of organizations. All organizations rely on financial resources to maintain operations, but NPOs rely on government grants, charitable donations and public funds, and not typically the sale of products or services.

## 10. Knowledge about Tools and Technologies

Several respondents noted the value of tools and technologies, and knowledge about them is applied to the benefit of the organization. For instance, one respondent identified "Database management of clients" (Respondent 32) as an additional knowledge type while the another

respondent talked about "[t]rends in technology in the area of tools to administer our organization more effectively" (Respondent 33). As noted earlier, some of these examples also connect to other knowledge types and thus, these examples might be interpreted as a form of expert knowledge or knowledge about trends (e.g., trend in technology) but they also reflect the underlying need to have understanding of technological domains which will be useful in organizational operational goals. In a survey question that focused on social media use for knowledge management, where nearly 70% of respondents indicated that they used social media in their organization (Rathi et al. 2014), it can be further surmised that knowledge about tools and technologies (not just "knowledge of social media" (Respondent 33)) is a powerful motivator for NPOs.

### 11. Derivative Knowledge

Derivative Knowledge represents all explicit knowledge derived from pre-existing sources, serving as a surrogate for these other sources. Examples of derivative knowledge include: indexes to published materials or annotated bibliographies; online reference documents that link to essential knowledge resources; statistics (e.g., "demographics of the community" (Respondent 34)); and, "metrics and histories, e.g., history of clients participation in the organization" (Respondent 35)) that have been collated to facilitate their use and application in operational processes. Other examples include:

- "A lot of key statistical information has not been very well kept. This organization has only been functioning 5 y[ea]rs" (Respondent 36).
- "We try to keep a detailed account of each event/program we offer so there is a documented record in order to make it easier for new volunteers to step in when someone leaves" (Respondent 37).

### 12. Experiential Knowledge

Similar to Derivative Knowledge, rather than being defined by what it is about, Experiential Knowledge is defined by its functional characteristics. The quality of 'experience' or 'expertise' of one sort or another was one of the most common answers from respondents. These tended to fall into two sub-types: a) field experience acquired heuristically, i.e., through many years of working within a particular sector, field or domain; and, b) functional expertise, where expert knowledge is identified by virtue of technical specialization. This category may also provide a reflection of operational knowledge.

- "Safety and technical knowledge, for example, first aid, specific training on equipment, for example trucks" (Respondent 38).
- "The expert knowledge and experience of clients" (Respondent 39).

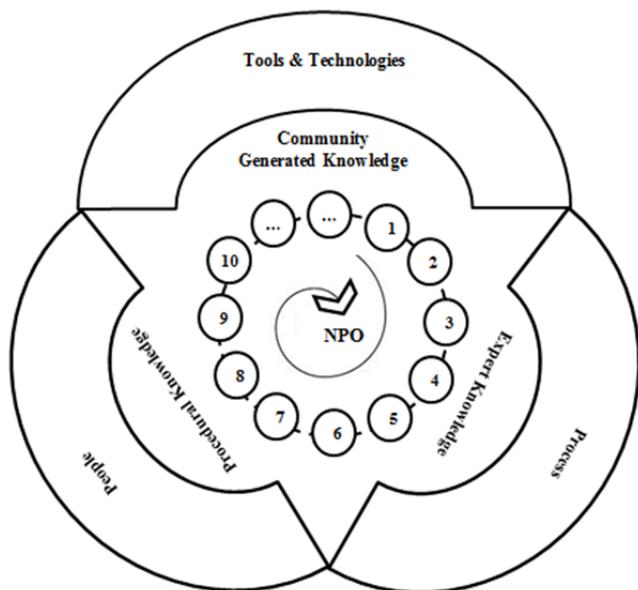
- "Knowledge gained informally through working with the organization for many years" (Respondent 41)
- "[S]hared life experiences of our staff and the clients we serve" (Respondent 42).

This type of knowledge is primarily tacit, and is closely associated with expert knowledge as observed from the phase 1 interviews.

## CONCLUSIONS

The current findings reveal that a complex network of interrelated knowledge types underlies the high-level process for organizational knowledge generation, developed previously (Figure 1; Given, et al., 2013). The 12 categories outlined in this paper, as identified through the thematic coding of survey responses, represent this underlying network and demonstrate a series of knowledge needs common to NPOs. These needs include, but are not limited to: the need for strategic partnerships and linkages; image management (i.e., how the public perceives the organization); accurate forecasting to meet the changing needs of community and public; access and timely implementation of industry and sector standards, benchmarks and best practices; accurate relevant legal and public policy information; documentation of operational processes and procedures (i.e., as through manuals and training materials); objects and records of historical significance (e.g., that preserve institutional memory); access to funding sources (e.g., donors, grants) and the successful undertaking of funding activities (e.g., fundraising, grant-writing); technological infrastructure and tools that support organizational activities; and, expert and experienced staff and volunteers to maintain operations.

Through this analysis, it becomes clear that people, technologies and operational processes are fundamentally interrelated elements necessary to answer these knowledge needs. Figure 3 provides an emergent model for the knowledge needs of NPOs that incorporates the knowledge generation process; at the most basic level, the interrelation of people, technologies and processes support and meet the knowledge needs of the organization. Within the model, these needs are represented by the knowledge types numbered in the previous sections (i.e., 1-10; ellipses (...)) are used to stand in for 11-12 to indicate that this categorization is non-exhaustive, and that additional knowledge types might exist). These knowledge types are connected with each other and with the NPO at the center; the spiral—a metaphor previously adopted by Nonaka (1994) in his own model for knowledge creation—represents the interaction of these elements in the iterative process of knowledge generation essential for the successful achievement of organizational mission and goals.



**Figure 3:** Emergent model for the knowledge needs of NPOs.

These findings are emergent, developed from a small set of qualitative entries (>200 responses). As such, the categorization of knowledge types (i.e., knowledge representations) is limited and non-exhaustive; researchers should use this categorization as the basis for further analysis into the types of knowledge found in NPOs that surpass dichotomous models of tacit and explicit knowledge. Through the analysis of additional responses from NPOs, more categories and sub-categories of knowledge types might emerge, and the current set of categories might be reinterpreted (e.g., “knowledge about community” might be further refined into more comprehensive sub-categories).

This research offers a practical contribution to managers and knowledge workers by providing a comprehensive, non-dichotomous categorization of knowledge types that can assist in the knowledge audit process (Liebowitz, et al., 2000) of NPOs. These categories can be used as the basis for more efficient and effective management of operational resources in organizations. Moreover, the categorization and preliminary model represent a first step in developing a comprehensive KM framework for NPOs that includes the implementation of social media technologies. As the analysis of phase 2 survey results proceeds, our research will build on these findings to enhance our understanding of the KM-NPO landscape by further developing a KM framework for NPOs, and pinpointing the role of people and emerging technologies (as KM tools, such as social media) in addressing the knowledge needs of NPOs.

#### ACKNOWLEDGMENTS

This research was funded by the Social Sciences and Humanities Research Council of Canada.

#### REFERENCES

- Andreasen, A., Goodstein, R., and Wilson, J. (2005). Transferring Marketing Knowledge to the Nonprofit Sector. *California Management Review*, 47(4), 46-67.
- Baskerville, R., and Dulipovici, A. (2006). The Theoretical Foundations of Knowledge Management. *Knowledge Management Research & Practice*, 4(2), 83-105.
- Bollinger, A. S. and Smith, R. D. (2001). Managing Organizational Knowledge as a Strategic Asset. *Journal of Knowledge Management*, 5(1), 8-18.
- Bouthillier, F. and Shearer, K. (2002). Understanding Knowledge Management and Information Management: The Need for an Empirical Perspective, *Information Research*, 8(1), 8-1. As accessed on April 25, 2014 from <http://www.informationr.net/ir/8-1/paper141.html>.
- Bryant, A. and Charmaz, K. (2010). Grounded Theory Research: Methods and Practices. The SAGE Handbook of Grounded Theory. Eds. A. Bryant and K. Charmaz.
- Charmaz, K. (2002). Qualitative Interviewing and Grounded Theory Analysis. Handbook of Interviewing Research: Context & Method. Eds. Jaber F. Gubrium and James A. Holstein. Thousand Oaks, CA: Sage Publications, 675-694.
- Davenport, T. H. and Prusak, L. (2000). Working Knowledge: How Organizations Manage What They Know. *Ubiquity*, (2000 August). As accessed on April 27, 2014 from <http://ubiquity.acm.org/article.cfm?id=348775>
- De Jong, T. and Ferguson-Hessler, M. G. (1996). Types and Qualities of Knowledge. *Educational Psychologist*, 31(2), 105-113.
- Donnerawards.org (n.d.) As accessed on April 27, 2014 from <http://www.donnerawards.org/files/pdf/nonprofit-facts.pdf>
- Enright, K. (2005). Five Steps to a Foundationwide KM Strategy at the Annie E. Casey Foundation. *KM Review*, 7(6): 5.
- Forcier, E., Rathi, D. and Given, L. (2013a). Tools of Engagement for Knowledge Management: Using Social Media to Capture Non-Profit Organizations' Stories. Proceedings of the 41th Annual Conference of the Canadian Association for Information Science (CAIS), Victoria, British Columbia, June 6-8, 2013.
- Forcier, E., Rathi, D., and Given, L. M. (2013b). Knowledge Management and Social Media: A Case Study of Two Public Libraries in Canada. *Journal of Information & Knowledge Management*, 12(04), 1350039 (2013) [10 pages].
- Gilmour, J. And Stancliffe, M. (2004). Managing Knowledge in an International Organisation: The Work of Voluntary Services Overseas (VSO). *Records Management Journal*, 14(3): 124 – 128.

- Given, L. M., Forcier, E., and Rathi, D. (2013). Social Media and Community Knowledge: An Ideal Partnership for Non-Profit Organizations, Proceedings of the 76th American Society for Information Science and Technology (ASIST) 2013 Annual Meeting, Montreal, Canada.
- Goh, S. C. (2002). Managing Effective Knowledge Transfer: An Integrative Framework and Some Practice Implications. *Journal of Knowledge Management*, 6(1), 23-30.
- Gourlay, S. (2000). Framework for Knowledge: A Contribution towards Conceptual Clarity for Knowledge Management, Knowledge Management: Concepts and Controversies Conference, BPRC, Warwick University, February 10-11, 2000. As accessed on April 27, 2014 from <http://eprints.kingston.ac.uk/3221/1/Gourlay%202000%20Frameworks.pdf#page=1&zoom=auto,0,842>.
- Gregory, A. and Rathi, D. (2008). Open Source Tools for Managing Knowledge in a Small Non-Profit Organization, In Hawamdeh, S., Stauss, K. and Barachini, F. (Ed.) *Knowledge Management: Competencies and Professionalism* (Series on Innovation and Knowledge Management, Vol. 7), (pp. 285-297), Singapore: World Scientific Publishing.
- Huck, J., Al. R. and Rathi, D. (2011). Finding KM Solutions for a Volunteer-Based Non-Profit Organization. *VINE: The Journal of Information and Knowledge Management Systems*, 41(1).
- Hurley, T. A. and Green, C. W. (2005). Knowledge Management and the Nonprofit Industry: A Within And Between Approach. *Journal of Knowledge Management Practice*, (January 2005). As access on May 21, 2008 from <http://www.tlinc.com/articl79.htm>
- Jakubik, M. (2007). Exploring the Knowledge Landscape: Four Emerging Views of Knowledge. *Journal of Knowledge Management*, 11(4), 6 – 19.
- Lemieux, S. A. and Dalkir, K. (2006). The Case of a Nonprofit Artistic Organization. *Information Outlook*, 10(1), 13-16.
- Lettieri, E., Borga, F. and Savoldelli, A. (2004). Knowledge Management in Non-Profit Organizations. *Journal of Knowledge Management*, 8(6), 16-30.
- Liebowitz, J., Rubenstein-Montano, B., McCaw, D., Buchwalter, J., Browning, C., Newman, B., and Rebeck, K. (2000). The Knowledge Audit. *Knowledge and Process Management*, 7(1), 3-10.
- Liu, B. F. (2012). Toward a Better Understanding of Nonprofit Communication Management. *Journal of Communication Management*, 16 (4), 388-404.
- Markus, M. L. (2001). Toward a Theory of Knowledge Reuse: Types of Knowledge Reuse Situations and Factors in Reuse Success. *Journal of Management Information Systems*, 18(1), 57-94.
- Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I., Toyama, R., and Nagata, A. (2000). A Firm as a Knowledge-Creating Entity: A New Perspective on the Theory of the Firm. *Industrial and Corporate Change*, 9(1), 1-20.
- Pan, S. L and Scarbrough, H. (1998). A Socio-Technical View of Knowledge Sharing at Buckman Laboratories. *Journal of Knowledge Management*, 2(1), 55 – 66.
- Prusak, L. (2001). Where did Knowledge Management come from?. *IBM Systems Journal*, 40(4), 1002-07.
- Rathi, D., Given, L., Forcier, E., and Vela, S. (2014) Every Task its Tool, Every Tool its Task: Social Media Use in Canadian Non-Profit Organizations, Proceedings of the 42nd Annual Conference of the Canadian Association for Information Science (CAIS), Brock University, St. Catharines, ON.
- Renshaw, S. and Krishnaswamy, G. (2009). Critiquing the Knowledge Management Strategies of Non-Profit Organizations in Australia, Proceedings of the World Academy of Science, Engineering and Technology (WASET), 37, 456 – 464
- Teegen, H., Doh, J. P. and Vachani, S. (2004). The Importance of Nongovernmental Organization (NGOs) in Global Governance and Value Creation: An International Business Research Agenda. *Journal of International Business Studies*, 35, 463-483.
- Vasconcelos, J., Seixas, P., Chris, K., and Lemos, P. (2005). Knowledge Management in Non-Governmental Organizations: A Partnership for the Future. Proceedings of the 7th International Conference on Enterprise Information Systems (ICEIS May 24-28, 2005), USA.
- Weerawardena, J., McDonald, R. E., and Mort, G. S. (2010). Sustainability of Nonprofit Organizations: An Empirical Investigation. *Journal of World Business*, 45(4), 346-356.