SOCIAL PLANNING COUNCIL OF OTTAWA

Best Practices for Knowledge Mobilization

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Abstract

This review paper examines the question of how to facilitate a more effective system of community knowledge mobilization given institutional and cultural separation among researchers and community practitioners. Several perspectives are explored as the specific topic of knowledge mobilization has received limited treatment in the literature. Related perspectives include the development of organizational culture, cooperation theory, and theories of computer supported collaborative work. The paper seeks to find an adequate framework for describing knowledge mobilization in a community and a set of guidelines to foster better social learning among both researchers and practitioners. The paper finds that issues of relational governance are consistently identified, and that, even when purely technological solutions are being pursued, infrastructures that promote greater awareness of the attitudes, values and actions of collaborating stakeholders are essential to partner alignment and the success and longevity of cooperative community efforts.

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Introduction

Successful community-based organizations are usually distinguished by some combination of their innovativeness, responsiveness, service quality, cost-effectiveness or accountability – in essence their ability to convert ideas and information into better services for their target audiences. Thus while service delivery is typically the primary activity of community-based organizations, what sets them apart is their aptitude for social learning. Some time ago Hatch wrote about how new ideas are introduced into organizations and became part of the organization's cultural norms and suggested "what is essential … is that a critical mass of appreciation for a new artifact be built up so that diffusion takes hold within retroactive realization processes" (Hatch, 1993:668). In other words, she believed that for new ideas to collectively take hold and become norms of practice, they must first be found as part of a community dialogue. This dialogue presents an opportunity to understand an issue in its entirety by referencing the many individual community activities that feed into it and by understanding the relevance and utility of these new ideas or practices by referencing the community's understanding of the issue as a whole. When such a dialogue reaches a "critical mass", then the new practices are likely to gain acceptance as elements of a newly accepted collective understanding of the issue.

Hatch also quotes Wilson (1987:396).

> *"We do not build up a pattern of society from descriptions of single actions [in an additive way]... but rather develop an account in a hermeneutic fashion, forming ideas about overall patterns on the basis of particular events and then using these same ideas to understand more clearly the particular events that gave rise to them"* (Hatch, 1993:675).

Figure 1: Knowledge Mobilization as Part of Community Culture
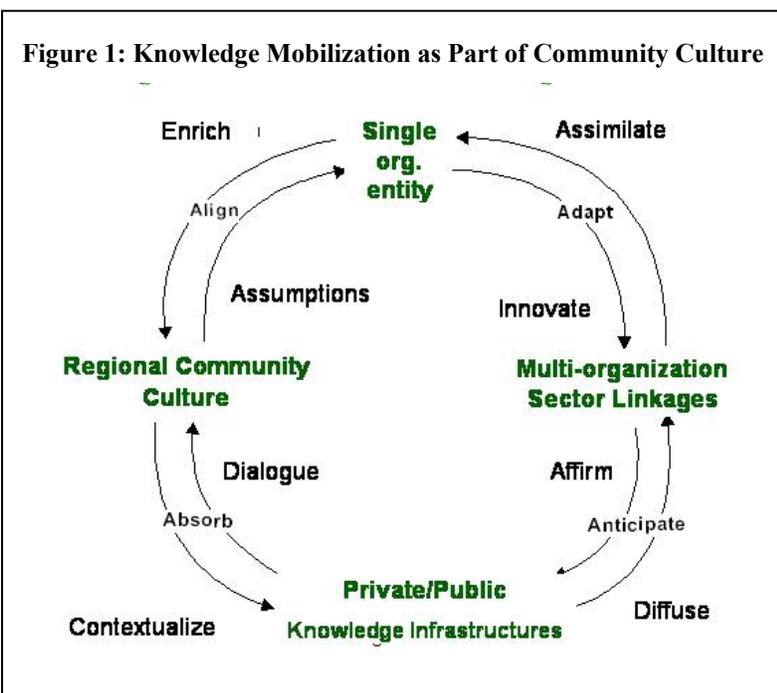
The mobilization of knowledge in a community sufficient to alter organizational behaviour and sector practice therefore rests on a conversational process that cuts across many stakeholders and simultaneously shapes practice norms together with cultural values and assumptions in the community. Knowledge mobilization is thus an integral part of an evolving community culture by affirming sector experiences and diffusing new knowledge to sector organizations on the one hand, and fostering community dialogue and absorbing new values and assumptions from a changed

community context on the other. Good evidence based practice will be founded on a knowledge infrastructure capable of collecting, analysing and making sense of new information – an infrastructure that is usually associated with researchers and academics.

Over the past several years there has been growing interest in evidence-based practice within the social and human services sector as a way of facilitating increasing accountability and improving service quality. In addition, the complex nature of community issues has encouraged researchers and direct service providers to find more effective ways to successfully share their perspectives in order to leverage each other's knowledge, resources and expertise to produce more effective policies and efficient practices.

However, it has been observed that funding scarcity among both social and human services providers and researchers has often forced many community organizations to adopt short-term, competitive tactics to survive (Embuldeniya, 2001). This is done at the expense of long term strategies, which might prove to be more beneficial. This tendency is exacerbated by practitioner assumptions about social science research generally that it takes a long time to be of use (Nutley, 2003), or it does not align with the short- or medium-term evidentiary needs of community organizations to influence funding and policy formation. Consequently, community research partnerships tend not to be pursued by practitioners and the results of practitioner research are often considered anecdotal or invalid by funders and policy makers intent on pursuing results-based management approaches.

This lack of alignment opens service providers to charges of poor accountability and evidentiary proof, and making them the football of political and economic fashions of the day. This situation continues despite a desperate need for stable, evidence-based research that targets new knowledge creation, policy formation and collaborative practice but along multiple time horizons (Community Based Research Network of Ottawa, 2002; Hall et al., 2003; Scott, 2003; Social Planning Council, 2003).

Among the barriers to a more evidence-based approach community-based organizations are:
- The under-utilization of existing academic research by practitioners;
- The unavailability of tools to expedite access to relevant, existing knowledge because of inadequate financial and human resources, especially in terms of expertise and time constraints;
- The need for more collective effort (among human services agencies, funders, policy makers, and academics) to coordinate existing knowledge, and to bridge the complex linkages between program interventions, community outcomes and research;
- The inability to collectively identify research gaps (particularly longitudinal and cost / benefit research) and to jointly determine community priorities and strategies to fill these gaps.

A more collaborative approach would contribute greatly to overcoming these barriers and encourage more comprehensive solutions in environments where resources, knowledge, and power among community stakeholders is widely distributed. That said, what is frequently missing is space for the 'hermeneutic conversation' needed to sustain collaboration. While specific community issues such as housing, community health, poverty, crime, or education

readily generate separate community partnerships, a community-wide system of knowledge exchange that might underlie more comprehensive innovation and coordinated community solutions seems, on the other hand, to be much more difficult to sustain. Successful collaboration across sectors and with researchers is assumed not to be practised. This is therefore the focus of this paper.

Within this context, the Social Planning Council of Ottawa (SPCO) is currently leading a project funded by the Canada Council on Learning, that is directed at the needs of "young adults with low levels of education" (YALLE). This project is relevant because it has explicitly recognized this disconnect between research and practice. It will attempt to bridge this gap by compiling a series of 'best practice' guidelines to help integrate knowledge transfer between researchers and practitioners in order to encourage more evidence-based practice within the segment of Ottawa's voluntary sector connected to YALLE. The YALLE project is in effect an attempt to foster a 'community of practice' anchor through which the community can better understand the dynamics and challenges of the YALLE group through a process of sustainable knowledge exchange.

It is also hoped that these guidelines will help illuminate how local stakeholders can foster an effective 'community of practice'. We use the term 'community of practice' (CoP) to refer to the process of social learning that occurs when people with common or related goals interact to produce shared socio-cultural knowledge, behaviours, practices and social artifacts that develop and evolve as they strive towards those common goals (Lave, J. & Wenger E., 1991).

One challenge faced by this project is that knowledge mobilization 'best practice' is not well established (Nutley, Davies, Walter, 2003). With this in mind, we will try and identify existing 'good practice' and draw from theories of cooperation, organizational culture, and computer supported collaborative work. The key questions of this broader framework include:

> a) how do you create a shared learning environment based on trust;
> b) what represents 'good practice' for the collection and dissemination of knowledge in a community; and
> c) to what extent can technology be utilized to collect, compile, organize and share data in a community of practice environment.

We begin this review paper in Section 1 with a quick overview of the topic of knowledge exchange and a brief examination of knowledge exchange within Ottawa's social and human services sector. Since the generation of any hermeneutic conversation requires the cooperation of community stakeholders, in Section 2 we explore some of the basics of social cooperation. This then leads us to examine the challenges faced by undertaking collaborative community work in Section 3, including a discussion on collaboration involving computer and communication technologies.

Subsequently, in Section 4 we examine community knowledge mobilization more specifically, its benefits and challenges, and particularly the challenges within the social and human services sector. Along the way we will identify several factors in the implementing effective knowledge mobilization, including the importance of integrating different knowledge transfer practices, of making use of opinion leaders, of user organized data, and of stakeholder incentives.

In the next Section 5, we present some 'lessons learned' from community-university research partnerships and some basic relational principles. In Section 6, we examine the lessons from research on computer supported cooperative work such as how to organize, analyze and disseminate data which in ways that are useful and accessible to a range of community stakeholders. Much research has been undertaken in this area which we believe can help shed light on both the technical and relational factors that influence a community's adoption of internet based coordinating tools.

As a framework for moving forward in establishing a community of practice, we present a modified Activity Awareness Model in Section 7. We also include here some technical considerations associated with implementing computer- supported collaborative work.

To conclude we offer some practice guidelines meant to aid practitioners and researchers who are attempting to collaborate in the context of CoPs and facilitate exchanges of knowledge within the social and human services sector. Although this paper is only meant to be a general overview of current research, it is hoped that guidelines for an effective system of knowledge mobilization around YALLE can be informed by these recommendations.

Section 1: Background

Ottawa's social and human services sector is somewhat unique in Canada since its location and moderate-sized population benefit from a nexus of three levels of government, the national offices of many not-for-profit organizations and foundations as well as research at two universities, the University of Ottawa and Carleton University, and two colleges, Algonquin College and la Cité Collegiale. This presents a special opportunity for these varied stakeholders to interact on a somewhat regular basis. While each of these post-secondary institutions has the potential to produce research of benefit to the sector, much of the locally produced social science research has remained outside of the practice and adaptive capacity of most local service organizations.

This disconnect between research and practice is fairly common amongst sector organizations, particularly the not-for-profits, since their operational mandates tend to require almost constant client interaction, and many do not have the organizational capacity to direct towards assessment, collective learning, continuous improvement or organizational development – all of which require the incorporation of new knowledge into practice. Simply put, these organizations do not have time to figure out "what works best" when attention is constantly directed towards the emergency of the day (Nutley, Percy-Smith, Solesbury, 2003). In this crisis driven context, professional and organizational development is shifted to the back burner and tends to be very practice oriented and infrequently informed by current research (Nutley, Percy-Smith, Solesbury, 2003).

Furthermore, in Ottawa this distance between research and practice is exacerbated by post secondary communities which frequently do not possess the direction or the 'hands-on' knowledge to format research outputs to be sufficiently timely and accessible for use by those

'on the front lines'. "On the community side, there is considerable caution with regards to collaboration with academia. Many [community organizations] are unsure what the university is able to contribute to "front-line" community work" (Reimer, 2004). We note that this is neither a uniquely Ottawa concern nor a new concern, as Love (1985) identified this disconnect in his assessment of transfers of academic knowledge to communities in 1985 as did Havelock in 1969 (Havelock, 1969).

As a consequence, post-secondary-level research in Ottawa and elsewhere has tended to be heavily discounted among social and human service practitioners in preference to internally conducted research or commissioned research so practitioners can be certain of its relevance and staff communicability (Nutley, Percy-Smith, Solesbury, 2003). The gap between university researchers and service provider communities continues to be accommodated but remains without a bridge. Over the years, the SPCO has maintained a strong interest in fostering communities of practice to promote knowledge transfer among the two groups and the YALLE project is another illustration of this.

For youth in Ottawa between the ages of 15 and 24 years old, described in the literature as either YALLE or as youth "not in education, employment or training" (NEET)[1], there is an interest among service providers to understand more thoroughly any demographic linkages and the impact of various community interventions on its well being. Yet in the past the silos between organizations and sectors have presented significant inertia to do so.

According to the participants at a recent community workshop[2] young adults who become early school leavers are likely to:
- experience higher unemployment rates;
- have reduced productivity;
- produce lower tax revenues;
- require additional social supports;
- generate increased community health costs; and
- demand increased public expenditure on issues like poverty, crime, and substance abuse.

Consequently, they add to the indirect social costs of the community. In addition, these adults are more likely to directly experience poorer individual quality of life due to:
- lower lifetime earnings;
- reduced career flexibility;
- poorer health outcomes; and
- increased anti-social behaviour.

These local assumptions are supported by an extensive body of national and international literature on the importance of education, lifelong learning and training in order to assure positive life outcomes for individuals and for society. For instance, Toronto's Hospital for Sick

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[1] The two groups are not quite synonymous, although they overlap significantly, and we will utilize research on both.

[2] A Workshop on Creating a Community of Practice to Support The Learning Needs Among YALLE, February 26, 2008

Children reported (2005: 60) "the lifetime social and economic cost of early school leaving is considerable in relation to issues such as health, crime and societal cohesion".

In Ottawa, as elsewhere, there are several community organizations and partnerships which have emerged to respond to this demographic. However, each partnership table has tended to focus on a single concern such as: education, apprenticeships, employment, health, crime, immigration, housing and homelessness, poverty, or even specific neighbourhoods. Yet the knowledge overlap between partner tables appears significant, as are the overlapping stakeholders. To date a common knowledge base has not evolved and where it has it is not well recognized or uniformly shared. At present there is no 'hermeneutic circle' in which to understand YALLE or the contributions and practices being made "in their best interests" by service providers. A YALLE-focused community of practice has obvious public interest, but how, under what conditions, and with what commitments and to what end should such community of practice be established?

Section 2: Community Collaboration

Among place-based stakeholders the need for better coordination has grown increasingly due to result of an ever increasing distribution of knowledge, resources and power. This is as true of YALLE focused work as it is of any complex community concern. This presents coordination and governance challenges that require more effective mechanisms for social learning which Paquet (1999) has defined as "the process of interaction through which individuals and organizations learn from each other and consequently adapt, innovate, develop new arrangements, conventions and rules". The demand for more comprehensive community responses, encourages citizens and community organizations to deal with the challenge of creating collaborative strategies that reflect this environment of social learning replete with trust, experimentation and habits of 'learning while doing'.

The creation of a 'community of practice' is one mechanism by which this social leaning can occur. As Wenger (1998) suggests, the development of a community of practice should:
- Create opportunities that allow the individuals of the community to *connect*.
- Provide opportunities to participants to foster *relationship building* – within the core and at the edges of the Community of Practice.
- Develop and communicate a *common language* for the community.

The purpose of a 'community of practice' therefore is realized not just in the sharing of data but in the processes of 'meaning making' and innovation that result from the social interactions that constitute collective learning. Since communities of practice are often initiated to accomplish change, they embrace a process of 'learning while doing' (often inadvertently) with "doing" the vehicle of their collective learning. Thus while the work of communities of practice is valued for its own specific outcomes, an important side effect is the generation of social and intellectual capital that can be applied in other circumstances. From this perspective, the learning outcomes of a 'community of practice' may be just as tangible as the other outcomes that have catalyzed them, because they become reusable community social capital. Thus creating a community of practice contributes to the building of community assets.

Cooperative work can be loosely or tightly coupled based on the types of commitment to the activities involved. **Coordination** refers to the orchestration of diverse resources and activities

into an integrated and harmonious operation. Within a community this applies to the alignment of different people, resources, activities and structures to accomplish the community's goals. No joint decision making or cooperation is necessarily implied in coordination. **Cooperation,** on the other hand, is the practice whereby individuals or organizations agree to support each other in a common interest, instead of working separately in their own interest or in competition. Cooperation is often informal and often commitment-light. In cooperative enterprises participation is voluntary and never coerced.

Collaboration is a cooperative practice wherein individuals and/or organizations work together towards some common goal which they could not achieve independently. It involves greater work coupling than cooperation in areas of decision making, resource sharing and actions. It frequently involves some form of MOU that sets out goals, obligations, expected outcomes and joint governance, implying some form of steering committee at minimum. A **partnership**, on the other hand, is more formalized. It is a legally organized collaboration that spells out how collaborators will work together and how participating 'partners' will share risks, costs, decision making and benefits with each other. An equal partnership is a special case where the partners share all elements equally. Otherwise decision making and benefits in a partnership tend to be proportional to the partner's investment in both costs and risks. Both formal and informal processes of joint governance are usually required.

Although participants in partner organizations usually recognize that 'go it alone' strategies are insufficient, this recognition is rarely sufficient for ongoing cooperation (Wilson, 2007). This is because ongoing cooperation is driven by a variety of cost/benefit assessments made by each partner on a continuous basis, and as such participation in collaborative or partnership activities is always contingent. **Contingent cooperation** applies to all cooperative practices and refers to the ability of two or more diverse stakeholders to work together effectively over time through exchanges in resources and information and where the continued cooperation by each participant is conditional on the *perceived cooperation* of the other(s). Since cooperation is voluntary to one extent or another, cooperation, collaboration and partnership impose informational, relational and trust demands on partners that are directly proportional to the degree of work coupling. This is the distinguishing characteristic between traditional hierarchical organizations and partnerships (and collaborations). The closer the relationship, the more energy has to be directed to the process of cooperating until a watershed level of trust is acquired.

This process necessitates ongoing social negotiation which not only acts to coordinate partner actions, but also to better predict the behaviour of partners and to re-affirm mutual trust. In contingent cooperation, the sort of 'I will if you will' behaviour typical of collaborative partners, (Wilson, 2007) demands ongoing communication between partners that not only involves codified information available through emails, databases, and the Internet but also what Heiner calls *endogenous feedback*, the verbal and non-verbal cues to the other partner's internal motivations (2002). These cues are the elements that foster a perception of the trustability of a partner, without which voluntary participation usually ceases.

In his analysis of 'one-shot prisoners' dilemmas Heiner suggests that endogenous feedback is best achieved with "close-range, *face-to-face* interaction … to have the greatest access to the causal links involved" (2002:9). Thus the sustainability of a collaboration involving distributed

partners can be linked to the degree of personal interactivity among the partners themselves, whether that be in formal meetings or in informal settings (such as coffee meetings, dinners, etc.) where the non-verbal interactive cues are more prominent.

Typically, the teams relevant to collaborative community work involve individuals and organizations that have significant role differentiation, that are potentially interdependent across different community settings and that require significant coordination. Their collaborative project work frequently involves long-term activities spanning weeks to years where participants must establish and maintain an ongoing awareness of other's actions, plans, goals, and activities. This awareness implies the need for information sharing, scheduling, role sharing, activity synchronization, and allocation of resources (Neale et al., 2004).

Aside from the cost of coordination associated with the collaborative process, a significant problem relates to *free-riding,* that is, the tendency of 'rational actors' not to fulfill their cooperative commitments, to "let the other person do it", as it were rather than sharing in the costs and burdens themselves. This is especially problematic when non-cooperation can go unnoticed or unpenalized. To limit *free riding*, organizations adopt *trust-and-verify* attitudes that require both information sharing and relationship building in order to satisfy their continued contingent cooperation (Wilson, 2007).

In the case of online communities that require contributions from many distributed participants, this free rider tendency is expressed in the well-known problem of under-contribution. Beenen, et al. (2004) found that when contributions were more clearly linked to the interests of individuals, whether by incentive or penalty, those contributions were more likely to be realized.

Are there specific frameworks that have been identified as useful in collaborative interactions and more specifically web-based knowledge exchange infrastructures? No and Yes. Oddly, there is no generally accepted theory of collaboration[3], although much has been said about theories of cooperation especially in game theory. It has been suggested that the design of collaborative tools should reflect the type of feedback or evaluation that each of the partners wish to obtain from a knowledge exchange a view consistent with the concept of cost/benefit trade-offs and contingent cooperation. However, such recommendations do not account for synergistic effects of collaboration, for social learning, or for innovation. These synergies are the things partners at the outset can not know about and therefore can not factor them into their cost benefit analyses. For this reason a knowledge exchange framework should reflect a collaborative governance process that is open enough to engender the learning of both means and ends simultaneously *as they proceed*.

For instance, is generalizability of interest? Are group characteristics of interest, including the nature of participating organizations and individual characteristics? Are context and situational factors important, task properties, group process, or task and group outcomes? Or are certain behaviours of interest like communication effectiveness, relationship building, mutual awareness, or trust. Or, is there a need to identify more of the outcomes of knowledge exchange, in addition to the outcomes of issue collaborative action? To what degree was the community

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[3] One candidate may be found in Barabara Gray's *Collaborating: Finding Common Ground for Multiparty Prolems*, Jossey-Bass, San Francisco, 1989.

mobilized? What changes in partner practice and behaviour resulted from collaboration? Are there reports of changed behaviour among the collaboration target group? Are there reported changes within the community in general?

The answers to these questions reflect both the goals of the participating partners and the content and organization of the knowledge to be shared. A web based tool could present some or all of this but it should be obvious that this represents a greater range of feedback than a partner might initially anticipate to 'get the job done'. Not all of these assessments may be relevant and not all of them can be conducted at the same time. Some may require a *methodological* style approach; others will require a *conceptual* approach; while still others may require a *concept-oriented behavioural* approach (Neale et al., 2004). The choice of one over another is not *a priori,* but will depend on the conversation between stakeholders as they begin to understand one another and define their common goals.

Section 3: Challenges of Collaborative Work

In the typical work setting of a single organization, "the issue of discordant interests and motives among actors is of minor concern if one is addressing coordinative practices and problems: actors are interdependent in their work and getting the job done therefore is in everybody's interest. Mutual help is taken for granted and is a matter of fact" (Heath and Luff, 1992; Harper and Hughes, 1993; Heath and Luff, 1996, 2000; Schmidt, 2002).

However, "in building interactive information systems that are to support 'common information spaces' that bridge heterogeneous communities or cut across otherwise unrelated communities one would most certainly have to take into account such issues [of interests and motives] (Schmidt and Bannon, 1992), since contributors/users are not interdependent in their work" (Orlikowski, 1992 in Schmidt, 2002:1). They do not, therefore, necessarily share the same overriding interest to get the job done, in the same way or in the same time frame. In community partnerships, mutual help is not assumed but is negotiated. Consequently, a prominent challenge in such situations is to reframe the various interests as a single common interest to produce mot "win-win-win" type solutions but just a single collective "win".

A common barrier in community information networks is, according to Schuler that "there is little agreement on purpose, shared goals and little organized communication. Few organizers -- in spite of utopian rhetoric -- have, for lack of time or inclination, even defined what they want to achieve or what their principles are" (1997:4). Governments may have a mandate to deliver services, not-for-profits have wrongs to address, businesses have profits to make yet in a partnership unless these interests are expressed as a single common objective, the underlying organizational pressures involved in joint action will pry the partners apart. If, however, those different interests can be reframed, like reducing service wait times from 10 days to 1 day, for example, then the actions of each partner can be directed to the same end, whether or not that end means exactly the same thing to all the partners.

"Coordinative practices are not generic behaviours (like speech) but aspects of domain-specific practices" (Schmidt, 2002:2). In the normal work setting, for instance, where employees are asked to cooperate, "[co-workers] know the domain; they have developed sophisticated skills;

they understand what colleagues are doing, why they are doing it, and what it means; they know each other and each other's competencies, weaknesses, and responsibilities, and they thus typically know what to expect and routinely anticipate events and troubles" (Schmidt, 2002:2). They have a fairly sophisticated awareness of each other and of the nature of the work being done together. This is what enables workers to make sense of their colleagues' actions and to a certain extent predict their behaviour so as to be able to adjust and coordinate their own behaviour in response.

On the other hand, "in heterogeneous communities and other kinds of diffuse 'common information spaces', [co-workers] typically struggle to make sense of what is going on" (Schmidt, 2002:2). A much greater effort is required to develop a) a common understanding of the work being undertaken together, and b) an appreciation of the collaborative co-workers skills, knowledge and reliability. Even accounting for the networking effect of computers and the Internet, "computer-mediated communication facilities … are therefore typically of limited utility in cooperative work" (Schmidt, 2002:2) unless accompanied by parallel processes which enhance mutual understanding and awareness.

Learning is a fundamental aspect of people working together. Individuals develop their skills and competencies as part of and in the course of collaborative work. Thus communities of practice should take this fundamental fact into account, by offering different modalities for participants to interact. These may include one-on-one meetings, small group discussions, workshops, newsletters, email, web based interactions, and e-learning because not everyone responds well to the same medium. In fact, most researchers generally believe collaborative skills are not innate abilities but are socially situated competencies (cf., e.g., Suchman, 1987; Resnick, Levine, and Teasley, 1991; Button, 1993; Button et al., 1995; Resnick et al., 1997; Heath and Luff, 2000). This means that systems designed to encourage collaboration should be designed with support for learning in mind. Participants should be supported in a variety of expressions of their evolving practice of routines, conventions, procedures, classification schemes, etc. (Schmidt, 2002:3).

For communities of practice to become stable, their value added contribution to both individual and collective learning must be clearly discernible. Continued group participation is based on the ongoing acceptance of value by individual users. Even in computer-based collaboration systems, participants will continue to participate if only if the associated learning remains capable of generating new understanding and innovation. "Sustainable technologies are processes; they are not products", write Page and Scott (2001). Thus the use of a shared technology in a community of practice is sustainable only when community members remain willing to contribute their time, information and resources to it and this implies that the CoP is perceived to be in their continuing best interest (Harrison & Zappen, 2005). CoP members are essentially contingent cooperators.

In addition to this emphasis on process, Scholl (2004) notes the importance of continuing leadership. Commitment from key players and ongoing succession planning, he says, are essential element of collaboration to ensure staff changes among partners do not result in project discontinuity. Collaborative relationships are anchored in trust and as such members are not easily substituted. Rubin points out that this is because the collaborative relationships are essentially between people and not organizations (2002). Harrison and Zappen, for instance,

observed (2005) that within six months of launching their *Connected Kids* project all of the champions who had led the development of the project had moved on, leading to a new challenge to educate, renegotiate, and re-commit the leadership of the new team. When new members enter trusted relationships must be rebuilt anew.

In the special case of computer supported collaborative work, the achievement of a critical mass of online users was considered another key factor in sustainability (Patterson & Kavanaugh, 2001). Harrison and Zappen concur saying that "both information in the system and [its] use must achieve critical mass, and this must happen relatively soon after deployment" (2005: 149). Developing and sustaining a critical mass of users implies once again the need to demonstrate sufficient value for users so that they will continue to use it and contribute to its upkeep. This need for value demonstration is made more difficult in collaborative projects where different types and classes of users may require a broader range of information to satisfy their contingent involvement. If targeted at a single audience, a collaborative computer solution is unlikely to gain adherents among diverse stakeholders.

Lastly, the success of technology tools in supporting collaborative work can be strongly affected by non-technical, social factors that play out the complex relationships among developers and users, through work process norms, organizational standards, small group norms and behaviour, and individual user preferences (Grudin, 1994).

Section 4: Mobilizing Community Knowledge

Knowledge Mobilization and Community Culture

Research in the area of knowledge mobilization, as studied in several different sectors, has revealed several findings that are both surprising and concerning. In health care, for example, "current research suggests that approximately eight to fifteen years elapse from the production of information to when it is used in practice," (Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, 2006: 7). What this indicates is that it may take a generation for sector knowledge to filter up through knowledge infrastructures enough to influence community paradigms and then back down to guide community policies and practices more generally. Despite researchers and community organizations both being interested in providing better service to community members, expediting this lag via knowledge transfer can consume significant resources and time (Hahn and Subramani, 2000).

Much of this delay may be attributed to ideational "zombies" - ideas held to be common within the community despite a lack of evidence or new evidence to the contrary (Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, 2006). These "zombies" are the cultural artifacts of collective assumptions, values and behaviours that have evolved from past knowledge and experience but which underlie current decision making and resist innovation (Schein,1985). The continued separation between the policy making, practice and research fails to evolve cultural artifacts inline with the general advancement of knowledge and practice, creating a challenge to find the common ground upon which all stakeholders can stand (Nutley, Davies, & Walter, 2003).

To resolve this requires more than just the efficient compilations of independent research for use by service providers, because even with "pre-digested research summaries" whose costs can run upwards of $100,000 (Gough, 2001, as quoted in Nutley, Davies, & Walter, 2003: 6) making them unaffordable to most community organizations, and reducing their ability to instigate fundamental shifts in community values and assumptions (Nutley, Davies, Walter, 2003: 6). Both new research and new practice must be able to concurrently contribute an evolving set of community assumptions in order for each to find validation in the local paradigm.

In his meta-review of knowledge transfers to communities, Love (1985) pointed out that most theoretical models he examined were concerned either with a) the extent to which research was used in practice, or b) the process of knowledge transfer itself [to the community]. Actual research content was ignored. Such models are problematic for understanding community culture change because they presume a one-way direction to knowledge transfer (to the community) and they are ill-suited to assess or inform stakeholder responsiveness and accountability. The hermeneutic interaction described in the dynamics of organizational culture change appears more appropriate to the type of mutual influence that is demanded by researchers and practitioners.

Within an effective community of practice, research dialogue is constantly bi-directional between users and producers, ensuring the opportunity for enhanced learning and accountability while also ensuring that the research is timely and practices are evidence-based. Without this kind of bi-directional feedback, decisions by researchers or direct-service personnel may become ill informed by experience 'on the ground' or be lacking in theoretical foundation (Christen, 2004). Without both there is little chance of revising the conceptual understandings which drive existing practices and new practices will continue to be resisted by the values and assumptions of the established paradigm. The corollary of this is that when researchers collaborate with practitioners, their research results are more likely to find their results actionable (Christen, 2004).

In addition, Wandersman (2003) reminds us that any good intervention whether it be in education, health care, or job training requires both good content and a good structure to facilitate its delivery. He notes that while funders have often emphasized evidenced-based assessments of content and promoted content production, he says "we need to know what structures support (or undermine) the delivery of the program – the community collaboration" (Wandersman, xvi). Without including the collaboration dimension of service provision into the scope of an evidence-based approach, one could find good content being assessed poorly because of bad delivery. Consequently, the input of practitioners on the delivery process becomes absolutely crucial to research programs to avoid 'ivory tower' solutions.

As the cultural dynamics model suggests (Hatch, 1993), poor community uptake of new knowledge may be caused by more than just poor transfer processes. Research can be easily ignored by those for whom it is meant to aid if it does nor reinforce the existing local paradigm or it is not sufficiently well organized into the artifacts of practice that are perceived as useful. The hermeneutic interaction between research producers and users which the SPCO hopes to facilitate, is therefore, likely to benefit not only the practitioners who likely to obtain fuller understanding of the YALLE reality in Ottawa to inform their practice, but also researchers

themselves who are likely to form more realistic models and conceptual frameworks based on practitioner experience. This is particularly important in that research quality is rarely a factor in research adoption rates since both funders and those "on the ground" rarely take the time, or have the resources, to evaluate research before it is put into practice (Love, 1985).

For instance, much of the theory on YALLE appears to reflect the 'broken or troubled youth' model and leads to interventions which might well be described as paternalistic attempts at 'fixing' the youth members of the community. But while this may have some relevance, practitioner experience also reflects young people who do not feel 'broken' or in need of 'fixing' and who are consciously pursuing their own independent lifestyles, albeit in ways that do not follow the accepted paths of previous generations or their mainstream peers. However, by linking these two perspectives there is more of an opportunity to consider youth as bundles of strengths and assets whose potential may be encouraged by interventions that are not trying to fix them but nurture them.

Understanding knowledge type

According to Hahn and Subramani (2000) knowledge is not the same as information or data, but would be more accurately described as a fluid concept which can include experience, expertise, values and contextual information. It is very much a social construct that is both contested and evolving. Yet despite this fluidity, knowledge provides an intangible platform from which we often derive sufficient confidence to engage in action. Love (1985) explains that knowledge is the *belief* in (acceptance of) social interpretations given to less contextualized statistics and data. This is another way of describing the move from new research and practitioner experience to community assumptions and paradigms.

Furthermore, knowledge may be implicit or explicit (tacit or codifiable), each requiring different channels of communication. Corporations, universities and health institutions, information tend to value explicit and codifiable knowledge more than tacit knowledge, but in the social sector the two types of knowledge are well mixed. While explicit knowledge is easily written down, and is easily communicated in print or online mediums (or literally encoded into software programs), tacit knowledge is better conveyed via person-to-person transfers (Hahn and Subramani, 2000). The direct human communication acts as a medium for transferring complex information such as context, history, values, and assumptions while providing the opportunity for endogenous feedback to piggy back on the transference of simple data.

In fact, Nutley, Davies and Walter (2003) have gone so far as to suggest that this combination of tacit and codifiable knowledge be explicitly recognized by the use of such terms as "evidence-influenced" or "evidence-aware" in stead of "evidence-based" since the latter term may not be sufficiently contextualized (Nutley, 2003). For instance, a specific policy intervention may not have hard evidence of a desired outcome yet the intervention may have catalyzed local stakeholders to continue working together on a solution even if the desired program result has no evidence of being achieved. This more nuanced evidentiary approach is more encompassing of future outcomes (which are uncertain) and for spill-over effects and unintended consequences such as improved citizenship. Despite this, Nutley, et al. admit that hard data continues to be

more valued by policy makers than practice-related tacit knowledge (2003) largely it would seem because of the latter's reliance on judgement over objective fact.

From this perspective, the CoP envisioned by the SPCO should learn how to make use of all types information, tacit and codifiable, for policy theorists as well as practitioners in the field in order to make information accessible to all YALLE stakeholders. This would necessitate identifying what kinds of information are important and relevant to whom; the stakeholder capacity to use both tacit and codifiable information; and the stakeholder pathways for applying that information in practice. Some recommendations or guidelines could assist a body of YALLE stakeholders define a suitable process of knowledge transfer.

In the case of universities and health care institutions, for instance, clear guidelines have been established for using a range of information sources considered trustworthy and reliable, starting with peer-reviewed, published research and continuing to include what might be called "common knowledge" sources such as those available on the Internet. In the social sector, however, peer-reviewed material is not regarded with the same deference, and in some cases it may not be as well regarded as other information sources. In fact, in this sector, "common knowledge" may be regarded as equally important as research based on randomized trial tests as long as that knowledge is corroborated by research findings published by university researchers or by respected field practitioners (Nutley, Percy-Smith, Solesbury, 2003).

This does not to suggest an absence of a knowledge hierarchy in social and human services; indeed, internally conducted or directly commissioned research is deemed especially relevant and useful. But this observation does suggest that the component of tacit knowledge is more highly prized in the social sector than in the areas of scientific and engineering research (Nutley, Percy-Smith, Solesbury, 2003) precisely because its greater likely to influence practice. Therefore the sharing of tacit knowledge needs to become a part of knowledge mobilization in the sector in order for that process to be perceived as legitimate in the eyes of practitioners.

That said, there is much less consensus within the social and education sectors about what constitutes good evidence or how such evidence should be utilized (Nutley, 2003). In practice, the answers to these questions are typically found to be unique to each organization.

Thus for the YALLE project, paying attention to the unique ways evidence is assessed and used will be important and time must be allocated in the context of a CoP to negotiate a community view. Alternatively, the CoP must concede knowledge transfer from one organization to another will be constrained by multiple viewpoints and be willing to construct a more complex and costly transfer system that reflects those different views of what constitutes good and useful knowledge. The resource constraints in the sector suggest a need to pursue a single uniform approach, even if there are short term costs associated with achieving a workable level of cooperation to establish common goals and then to support them with the most practical system of knowledge dissemination. This would allow research findings to reach a larger audience than one might expect based solely on subject matter focus (Nutley, 2003), and therefore contribute more effectively to those conversations which change both the local paradigm and the body of practice which it supports. Thus for a YALLE CoP the suitability of any knowledge artifact, its

"fitness for purpose" (Nutley, 2003: 14), would reflects its ability to instigate these community conversations.

Fostering good relationships

One of the most effective ways of ensuring that ongoing consensus about means and ends in such a situation is regular interaction among the stakeholders, especially those with different points of view. One way communications among research producers and users through emails, newsletters, web updates are insufficient (Nutley, Davis, Walter, 2003) and that the integration and adoption of new knowledge requires socialization to convey both trust and tacit understanding. Nutley, et al. (2003), for example, recommend that research updates be reviewed regularly by the CoP so as to ensure that final research outcomes remain aligned to both theory and practice. This hermeneutic process also helps to adjust the community values and assumptions within the broader context upon which practice depends. Returning to the SPCO's YALLE project, since its ultimate goal is to improve both overall understanding as well as practice, it makes sense that regular interaction between stakeholders be structured as a staple of the project.

Researchers (Nutley, Percy-Smith and Solesbury, 2003; Nutley, 2003) have found that the early interaction between producers and users of knowledge helps to effectively shape the conceptual dimensions of research and its subsequent adoption. "Closer and longer-term interactions between research producers and users is the most effective method of ensuring that knowledge is used" (Nutley, Davis, Walter, 2003). Why? Because the early stage interaction offers potential users an opportunity to influence the nature of the research, creating ownership in its results in much the same way as internally conducted or directly commissioned research might do (Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, 2006; Huberman, 1983).

In addition, project partnerships that include face-to-face contact are more likely to see the results of research influencing practice (Nutley, Percy-Smith, 2003; Nutley, 2003). This also seems to affirm the earlier comment by Heiner about the importance of *endogenous* feedback in cooperative settings, that is to say that face-to-face contact permits a better 'read' of each other's appreciation of their circumstances and knowledge. On the other hand, occasional or one time interactions between stakeholders are only mildly effective at facilitating knowledge transfer (Nutley, Percy-Smith and Solesbury, 2003; Culwell, 2004).

Perhaps most importantly, to have any significant impact on prevailing practices new research must become supported by the community's worldview. To do so, several key elements must be present: common lexicon, shared context, and common champions. Research results need to be translated into a language that is useable by practitioners (Nutley, 2003). Hahn and Subramani (2000) have observed that different issue communities tend to develop their own lexicons. Without some degree of interaction between different stakeholders in a partnered project, knowledge transfer between them can be impeded by these different vocabularies. Since the researchers in university communities tend to operate independent of practice communities, for instance, without some attention to developing a shared language it is unlikely that a partnered

approach will take root until there is confidence in their mutual interpretation of each other's data and perspectives. A shared language may, for instance, be developed by producing a needs or baseline assessment, that gives participants a chance to engage around an interpretation of basic data.

Without explicit attention to facilitating formal and informal interaction among the two groups, the sharing of codified and tacit knowledge would likely become "lost in translation." According to the Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, "direct, continuous, formal as well as informal contact between the researchers and the users of information, throughout the research process has been described as the *best* guarantee of a successful transfer of knowledge," (2006: 11).

Nutley, (2003) underscores this further by suggesting not only the need to 'translate' research results but also to conduct analysis in a manner that is contextually relevant, examining what this means to each stakeholder. Without this awareness of the values, behaviours and practices derived from personal exchanges and relationships, aligning analysis to local conditions will prove most difficult. The research might be theoretically correct but off the mark when it comes to its practical application.

Lastly, the adoption of new ideas is frequently facilitated by champions, third parties who tend to move back and forth between the practitioner and researcher communities, and who understand their different vocabularies and contexts,. This use of champions is observed in the recruitment of sympathetic opinion leaders who can promote shared research amongst groups because of their 'trusted broker'status (Nutley, 2003). These champions may be especially helpful in the early stages of a shared research program (Culwell, 2004; Nutley, Percy-Smith, Solesbury, 2003) when stakeholder trust may be tenuous. In addition, the enthusiasm of champions may be infectious among practitioners who value their advice and knowledge and thus improve adoption rates. Research champions therefore seem to ease the integration of knowledge into a community's operating routines (Nutley, 2003) while catalyzing the establishment of stable relationships among researchers and practitioners and facilitating the adoption of evidence-based practice over the long-term (Nutley, Davies and Walter, 2003).

Yet even with the presence of champions, collaborative relationships are difficult to maintain when there is a perceived imbalance in benefit sharing and this is no different when it comes to universities and service organizations. A clear understanding of the risks, contributions and rewards implicit in a collaborative partnership is essential and this is best managed in terms of relational governance. In an examination of the ties between universities and community schools, Huberman (1983: 267) found that, "stronger linkages deliver the outcomes that really matter to schools and universities, such as increased capacity and practice improvement". Furthermore, he found that where the benefits were perceived to be more equally distributed, the relationship on the whole was perceived as being more mutually beneficial and cost-effective. Partner relationships, says Szuanski, that are laborious and difficult, and lacking in trust will tend to hinder effective knowledge transfer (1996).

For instance, Huberman found that community-oriented post-secondary institutions were more likely to engage in practitioner relationships than research-centered institutions, since the latter's

more "cosmopolitan" viewpoint would downplay such linkages as "a significant, but not a critical, area of investment" (1983: 269). The weaker relationships with the big research-centered universities tended to undermine the idea that benefits were being shared fairly. With one partner not caring all that much and the other feeling somewhat taken advantage of, the commitment to collaborate was continually being whittled away, whether or not these collaborations were in fact producing a better research product.

Reagan and McEvily (2003) identify three other dimensions for managing collaborative relationships, including:
- *collaborative cohesion,* the prevalence of third-party ties between partners;
- *network range,* the number of network members with diverse pools of knowledge; and
- *tie strength,* the trustworthiness and closeness of the relationship among partners.

In the context of the SPCO YALLE project, the diversity among potential CoP members is a given and suggesting that network range is broad. However, collaborative cohesion is weak owing to the absence of an existing YALLE community of practice and weak links between the practitioner and research communities. Thus SPCO YALLE project could present a valuable community investment in knowledge transfer by constructing a space for collaborative cohesion to develop.

For a variety of reasons, not the least of which is resource scarcity, many community organizations experience a tendency towards stakeholder competition (Reagans and McEvily, 2003). The cultivation of strong ties between stakeholders, on the other hand, creates a situation where community groups may feel more like allies than competitors, resulting in greater innovation, and new practices being adopted more quickly and more broadly in the community than one would otherwise expect given organizational competitiveness (Argote, McEvily, Reagans, 2000).

From this perspective therefore, a regular interaction among YALLE stakeholders that focuses on improving *collaborative cohesion* and *tie strength* would more likely enable effective knowledge transfer within a YALLE-oriented community of practice.

While direct stakeholders interactions are often the key to good knowledge transfer, in some cases it is the advocacy network associated with a CoP that fosters knowledge dissemination by recruiting community support for the application of new knowledge (Nutley, Percy-Smith, Solesbury, 2003). This avenue has been shown effective in health care, for example, where the social and political influence of patients can increase research uptake among health-care practitioners (Nutley, 2003). Patient reactions to a new drug or procedure can create a 'buzz' among practitioners to adopt the new practice. In a similar way networks of co-workers and professional networks could also effectively influence the adoption rate of research in social and human service organizations.

The organization of data may also prove to be an important consideration, if there are unique organizational demands to meet their specific tasks or deadlines. Many community organizations dealing with groups at social risk are under great pressure to address the concerns of their clients immediately and in this climate research utilization is much less of a priority if it does not apply

directly to these activities. Research is more likely to be used if it cam be provided in a format that is interactive, focused and easy-to-use so that it does not distract from the operational focus on clients. Research that is oriented to more strategic, governance or organizational development concerns while important is likely to get short shrift.

There may be various channels for disseminating research including printed publications, journals, websites, emails and e-newsletters. While each may have value, the best results are obtained when they are used in combination, particularly with some form of oral presentation (ie., in educational outreaches, workshops, conferences or news media). However, even oral presentations may have limited effect unless an opportunity for focused interaction is also provided (Nutley, Percy-Smith and Solesbury, 2003). Attention is most likely to be paid to research when its findings are uncontested and reaffirm the existing local paradigm (Nutley, Davis, Walter, 2003). With more controversial research, community partners need to find ways to engage early on in the process of dialogue and collective learning such that the collective culture can begin evolving its values and assumptions in parallel with practice and research experience. Otherwise controversial research results or innovative practices will be resisted by the existing paradigm.

Using Incentives

So far we have examined several cooperative strategies to foster more effective knowledge transfer. However, the fact that these cooperative strategies require voluntary stakeholder participation underscores the need to address the system of stakeholder incentives. What can motivate and sustain partner participation? The use of financial incentives, such as access to new organizational funding or paid participation, seems obvious but these face several challenges. Most notable is a general lack of funds in the sector, but the effectiveness of financial incentives remains contested. Financial incentives, for example, may get organizations and people to the collaborative table but when it comes to actual knowledge sharing they may not be effective for building ongoing systems of knowledge sharing. If the incentive is to contribute a certain amount of data, this can often result in an overabundance of irrelevant material that competes for attention with useful information (Hahn and Subramani, 2000). Financial incentives are also notoriously impermanent such that when the money goes so does the cooperation that relied on it. Szulanski (1996) concluded that because of the nature of financial incentives, they are unlikely to overcome the "internal stickiness" of organizational knowledge – a measure of its transference difficulty.

This does not mean that financial incentives can not be used, only that they should not be relied upon alone to foster adoption and integration of new knowledge in the social and human services sector. Nutley, Davis and Walter (2003), for example, have included financial incentives among their recommended knowledge mobilization practices across a range of subjects. Today many funding institutions explicitly link access to funding with the ability of community partners to engage in social learning and evidence based approaches (Provincial Centre for Excellence in Child and Youth Mental Health at CHEO, 2006; Nutley, 2003). However, many funders still rely too heavily on measures of fiscal accountability rather than assessments of an ability to achieve community change objectives (Francisco, et al., 2003) – skewing incentives in favour of the fiscal oversight rather than learning.

Solesbury (2003) has suggested that the use of evidence-based practice can positively impact an organization's reputation by fostering a sense of trust and reliability in their service delivery capability. This increased trustability in turn, increases the organization's professional status and frequently leads to further opportunities and benefits.

Since financial incentives for not-for-profit organizations will likely lie outside their operational budgets, these reputational incentives for participating in collaborative research can prove very useful. Hahn and Subramani (2000) also encourage the use of incentives which influence a person's social status or reputation in the community. Strategies that facilitate emotional, personal and technical assistance for those interested in incorporating research into practice can be more effective than financial incentives and these can be reinforced through audit and feedback processes (Nutley, Percy-Smith, Solesbury, 2003). These types of "soft" incentives seem more realistic for the social sector in Ottawa and may also provide spill-over benefits, such as increased personal commitment and new opportunities.

In addition, cultural incentives have been observed to influence both knowledge transfer and adoption. For example, Orlikowski (1992) observed that the adoption of *Lotus Notes* to share information within a consulting firm was resisted because of opposing intangible incentives for different employees in the organization, in particular, senior partners and more junior members. Among the junior members, the competitive organizational culture of the firm discouraged information sharing and thus provided a disincentive to adopt the *Lotus Notes* environment. At the senior partner level, however, where competition for promotion was not as vigorous, a more cooperative behaviour prevailed that provided an incentive to adopt the information sharing technology of *Lotus Notes*. Thus while the adoption of *Lotus Notes* reinforced the norms of the senior executives, it contradicted the norms of the more numerous junior members, leading to their resistance and an eventual failure to adopt the technology by the firm. According to Pratt et al. (2004) new knowledge and technologies that have not been appropriately tied to incentive structures at the various levels of an organization, can suffer adoption resistance or eventual failures. Understanding the intangible incentives that may be embedded among the cultures of different community partners thus becomes a challenge to be addressed by an effective system of knowledge mobilization.

Incentives also matter in another way. The perception of who does the work and who receives the benefits is key to ensuring ongoing cooperation. A common complaint among community-research partnerships, for instance, is that researchers tend to expect voluntary contributions from community organizations as if their participation was cost free. Getting this alignment right is particularly important in community collaborations where participation is contingent on the partners' perception of 1) not being taken advantage of, and 2) receiving benefits in excess of their costs, including the cost of collaboration. Grudin (1994) suggests that in addition to designing technological systems for knowledge exchange and community collaboration, social processes should put in place to ensure sufficient transparency such that all partners can perceive both the benefits and how they are being distributed so as to encourage adoption and integration of the outputs of collaboration. This transparency offers the opportunity for an ongoing adjustment if the benefit sharing is deemed unfair without a loss of trust.

Several studies (Nutley, Percy-Smith, Solesbury, 2003) have concluded that combining knowledge mobilization strategies is likely the most effective approach due to the varied types of knowledge, people and organizations which may be involved. A single strategy or channel is unlikely to resonate with everyone. Consider, for example, the provision of research summaries to direct-service personnel as a way to facilitating knowledge transfer (Nutley, Davis, Walter, 2003: 16).

While research summaries can benefit practitioners by reducing the time to extract useful information, providing it in print format alone has been shown to have limited effectiveness (Nutley, Davis, Walter, 2003). Printed summaries will reach only a small audience in large part because they are not sufficiently interactive to permit questions, clarifications or implications for practice being addressed for operationally oriented practitioners. To increase the effectiveness of these summaries, they could be presented across a range of media, making them as engaging as possible, which will in turn increase interest and support effective practice change.

Nutley (2003) has suggested that one of the most effective ways to facilitate knowledge transfer is to identify potential transfer barriers and address those first. However, the identification and resolution of knowledge transfer obstacles will itself remain a collaborative activity that would require some form of CoP (along with its collaborative costs in terms of time and personnel) to address it.

The most salient barriers to effective knowledge mobilization are the lack of resources that are applied to collective learning and partnership (as opposed to knowledge creation), the lack of attention to the differing absorptive capacities of partner organizations, a lack of knowledge transfer skills and single channel communication modalities, and a lack of professional recognition (for researchers and practitioners) to engage in the knowledge transfer process. Amongst practitioners, barriers can be something as simple as lack of time to read pertinent publications or engage in conversations. Amongst researchers who are judged on the basis of their publication and teaching activities, this may entail an institutional failure to recognize their community contribution as part of their professional performance. These barriers may also include the more complex obstacles such as the cultural perceptions about what constitutes suitable research work or a lack of institutional or funder support for the adoption of evidence-based practice (Nutley, 2003, 8).

Given these barriers, knowledge mobilization may be enhanced by ensuring that:
- researchers and practitioners are given the chance to interface regularly in order to help make research both more directly applicable to immediate needs and more easily transferable;
- the involvement of both academic and service funders in the CoP to help encourage funding practices which would require more actionable research outcomes and evidence of practitioner/ researcher collaboration. This would explicitly link their cooperation to the financial aspirations of both;
- an ongoing performance assessment of the collaborative behaviour and contributions of both practitioners and researchers as a factor of continued funding; and
- a commitment to foster ongoing outreach to stakeholders in the sector to validate both the assumptions and directions of the CoP forums.

Section 5: Community research partnerships

Social scientists often avoid activist, advocacy, or participatory approaches to research. According to Lindblom and Cohen, many work as though totally non-partisan objective research is the highest form of scientific inquiry. However, this interest-free view is less likely to result in usable knowledge in the social sciences, because it presumes that the events and circumstances which are of interest to social scientists happen independent of values, beliefs and special interest. "With perhaps some rare and only imaginable exceptions, all participants in social interaction are partisans. (Lindblom and Cohen, 1979)" Research in the social sciences plays out in arenas where those interests are continually being contested. As a result, Schuler says that while researchers should not "bias results to suit an audience", they should assume the dynamics of an event represent "various explicitly recognized partisan interests each playing its role in the resolution of policy conflict" (Schuler, 1997:7). This places a strong onus on social scientists to become involved with those competing interests in order to identify and appreciate their interplay and the co-evolution of the community understanding that they foster. This is why 'action research' has gained so much currency in recent years. From this perspective, participation in community collaborations is therefore a research imperative and not simply a matter of researcher largesse. In the US, for instance, the American Association of Schools Colleges and Universities has taken the stance that post-secondary institutions should "serve as 'stewards of place', to function as learners as well as teachers in tackling the myriad of opportunities and issues facing our communities and regions" (AASCU, 2002).

In designing community networks to foster better knowledge exchange, researchers can help (while still pursuing important social science questions) by concentrating on four areas:
1. informing the community of relevant theory, history, policy and other issues in democracy and technology and;
2. working with the community to establish and monitor conditions that facilitate learning, especially determining objectives, developing strategies, collecting data, measuring success, and evaluating and communicating results, and identifying future research;
3. offering other types of consulting and services related to educational programs, institutions, funding sources, and contacts in the community (including facilitating communication among and between the university community and the community networking community); and
4. integrating the community and the university. (Schuler, 1997: 8)

Yet it is often observed that collaborations between researchers and community organizations can exhibit several potential problems, many of which are linked to poor communication, loss of identity, resource competition, and lack of mutual respect. "Community members [can] feel that they have been burnt by university researchers who have been patronizing, manipulative, and non-cooperative" (Schuler, 1997:11). Consequently, Schuler recommends (1997: 12) seven principles that need to be put in practice to facilitate effective collaboration between researchers and community practitioners. These include:

- Community partners should be involved at the earliest stages of the project, helping to define research objectives and having input into how the project will be organized.

- Community partners should have real influence on project direction--that is, enough leverage to ensure that the original goals, mission and methods of the project are adhered to.
- Research processes and outcomes should benefit the community. Community members should be hired and trained whenever possible and appropriate, and the research should help build and enhance community assets.
- Community members should be part of the analysis and interpretation of data, and should have input into how the results are distributed. This does not imply censorship of data or publication, but rather the opportunity to make clear the community's views about the interpretation prior to final publication.
- Productive partnerships between researchers and community members should be encouraged to last beyond the life of the project. This will make it more likely that research findings will be incorporated into ongoing community programs and therefore provide the greatest possible benefit to the community from research.
- Community members should be empowered to initiate their own research projects which address needs they identify themselves.
- Researchers need to reduce the level of abstract and increase the level of practicality when it comes to communicating research results. As already discussed, practitioners don't want to spend their time working on tasks that appear to have no relationship with what they're trying to accomplish.

Section 6: Computer Supported Cooperative Work

A related area of research to that of community knowledge transfer is that of **computer supported cooperative work** (CSCW) and community networks**.** This is a sub-discipline of the study of computer-human interactions within computer science and engineering. CSCW tends to concentrate on the use of technology in collaborative work settings, where social interactions involve multiple perspectives and multi-stakeholder analysis, with different historical and functional backgrounds and encompass a range of political, institutional, organizational, small group, and individual perspectives (Pratt, 2004). Such settings are often characterized by participation which is voluntary and contingent and where successful adoption of technology products or tools is proportional to the partner contributions to the initiative (both financial and human) and their ongoing perception of its overall value (Orlikowski, 1992; Pratt et al., 2004; Wilson, 2007).

The centre of attention for CSCW is twofold -- the practices that allow the partners efforts to become and stay coordinated, on the one hand, and the inter-organizational actions that permit collaborative learning to be absorbed by individual organizations so that work can be accomplished on the other. These are "the procedural, technical, and organizational techniques and methods through which concerted action is accomplished" (Schmidt, 2002:1).

Research on community networks, for instance, show that community organizations consider developing community information systems for reasons quite similar to those identified in knowledge mobilization research, specifically:
- to increase the amount of or improve the quality of inter-organizational communication,
- improve their access to information, and
- to provide new opportunities for the development their skills (Schuler, 1997).

Best Practices for Community Knowledge Mobilization

While it is the researcher-community exchanges that are most important in the case of research on knowledge transfer, the focus of CSCW is much broader and includes all related information and stakeholders. In addition, because collaborative online information systems tend to agglomerate diverse kinds of information, they attract users not only for 'one-stop' type reasons of convenience but they can also offer information providers with the opportunity to reduce their knowledge dissemination costs through increased economies of scale and improved market/ audience reach (Harrison & Zappen, 2005).

Are there other reasons for communities to pursue collaborative online solutions? Schuler suggests several other rationales that resonate with our understanding of community knowledge transfers:

- Providing access to relevant data and other pertinent information and knowledge;
- Educating actors about issues and options;
- Supporting community alternatives;
- Supporting civic assets and actors (e.g. non-profit organizations);
- Encouraging and validating research;
- Sponsoring community forums and dialogue;
- Engaging in political work and advocacy;
- Providing access to civic "stories"; and
- Providing an occasion for shared work and, hence, help build community.(Schuler, 1997)

CSCW is seen as diverse, difficult and complex. Cognitive, cooperative and collaborative factors with both individuals and organizations must be considered in the development and execution of CSCW solutions making them diverse. Usability factors, social and organizational impacts, and the larger context concerns add to the difficulty of their implementations (Neale et al., 2004). Trying to align these factors with the causal contributors to problems that are often distributed in both time and space adds to complexity of CSCW initiatives (Neale, et al., 2000).

One of the largest challenges with online collaboration is its limitation to explicit (codifiable) knowledge. The nature of computer communication limits it to codifiable information which, according to Hahn and Subramani (2000) makes this method of collaboration incomplete. Tacit information is often excluded and the relational and trust elements of social learning can not be represented via computers. "Trying to represent [tacit, relational or contextual information] digitally is difficult", while using computers to transform tacit knowledge in subtle ways may render it "unappealing or unusable" (Neale et al., 2004:116).

On the other hand, Solesbury (2003) suggests tacit knowledge might be transferable via computer in highly interactive systems but only where trust and significant commitment from stakeholders have already been established. However, from our previous review of relationships among researchers and community practitioners, this situation is is uncommon. Therefore, while computers will remain a valuable tool for those working in the social sector, over reliance upon them as the primary mode of knowledge transfer would seem ill-advised.

Yet the use of technology in social sector organizations continues unabated. Its use is generally used to automate and reinforce existing business and social processes, but sometimes it is used to transform, reshape and redefine those processes. And while efficiency pressures on not-for-

profits and community organizations, produced by the downloading of government services, may encourage greater use of computer technologies, the pursuit of technological solutions will not itself make a collaborative enterprise. Even if a technology solution existed that could benefit community partners, there is no guarantee that individual partners could use it collaboratively (Harrison & Zappen, 2005). As we have already seen the non-technological dimensions of collaboration are many and few non-profits have the experience or the capacity to engage effectively in collaboration (Embuldeniya, 2001), although this may be changing (Scott and Struthers, 2006).

These non-technological dimensions of collaboration exist because of the differing contexts in which the participants operate and which have significant influence on the design of collaborative computer systems and networks. Thus the design of networks that support community collaboration are based concepts that are more "socially centered" than "system-centered" or "user-centered" (Stanney & Maxey, 1997) as is common in more homogeneous or single organizational contexts.

> *"Collaborators who are not able to be at the same place at the same time need continuing support to remain aware of the presence of their counterparts, their tools and other resources, their knowledge and expectations, their persistent attitudes and current goals, the criteria they will use to evaluate joint outcomes, and the current focus of their attention and action."* (Neale et al., 2004:115)

This "awareness of counterparts" in online collaboration is made much more difficult when one is dealing with multiple organizations or organizations from multiple sectors.

From the analysis of Kubicek, and Wagner (2002) it is evident that there is no standard design template for community information systems. Instead each community has evolved its own unique system as "a social experiment, born of a cluster of varied ideas related to the general theme of using technology to promote the development of vibrant geographically-based communities" (Harrison & Zappen, 2005:145). Each community project might be said to be an armistice of similar, complementary and competing ideas regarding project goals, needs and technologies. Since these agreements are 'point in time' responses, they tend to be fragile, even breakable, in transference due to the changed understandings, values, resources and priorities of both the new participants and the communities to which they may be applied.

Neale et al. make the point that this community context is important not only to develop a better web-based tool but it is also essential to align the goals of the collaborators and hence the stability and sustainability of their partnership. "The more information group members have that is outside the immediate behaviour, and information about the global context, the more cohesive and effective the group is" (2004:116).

According to Harrison and Zappen, "[in collaborative systems] the material form, functionalities, conceptual configuration, and impact of technology is shaped by the uses, goals, interests, and ideologies of *those who participate* in its development and *others who use* it following development" (2005:146). This reinforces the need for collaborative community information systems to be participative and inclusive of those who design and use such systems in order to

remain sustainable. In fact Schuler (1996) points out that "the best way to kill a community network," is to fail to involve the community in its development; to rely overly on 'professionals' to guide the work; and to think of them as only technology projects instead of community building projects.

Pratt et al. (2004) point to the importance of three areas often discussed in the CSCW literature -- *incentive structures*, *workflow*, and *awareness* – and they suggest that increased attention to them can help improve technology design and contribute to more sustainable collaborative information systems.

Incentive structures -- How can we create systems and appropriate organizational structures to motivate users to properly use a technology?

> The key here in a CSCW context is in understanding the incentive structures that can motivate a critical mass of users to contribute to and use the technology appropriately? Like in Orlikowski's example discussed earlier of the consulting company's adoption of *Lotus Notes*, these incentive structures may span a range of political, cultural, institutional, organizational, small group, and individual interests that may be affected by a new technology.

Workflow -- How does the technology fit into the work process of its users? Are there standards of work practice that exist among users and partners?

> Most workflow concerns fit between two extremes: the desire to automate existing business practices and, the desire to transform them. According to Pratt et al. (2004) most collaborative technology tools fall in the middle of these workflow concerns. If the business process that is being computerized is itself standardized and routine then the automation approach may be more appropriate. If however, the work requires the handling of many exceptions, then the transformative approach might be better. Regardless, the implementation of any new technology in an established workflow process will either increase user satisfaction and thus encourage its adoption or produce dissatisfaction and encourage resistance to it. It is the job of the implementers and decision makers to be attentive to this difference in order to adjust either the technology (including its software interface) or its incentives.

Awareness -- What activities, mechanisms or techniques can be used to help people become more aware of each other so as to better coordinate their work?

> One way to support successful collaboration is to increase the sharing of information about users' work activities. This is because people will more effectively coordinate their work if they are aware of what each other is doing (Bricon-Souf, et al.1998). Pratt et al. note (2004) that it is not only direct awareness of those activities that is important but indirect awareness that may be facilitated by elements of the paper based system that the technology is meant to supplant. For example, they point to the use of paper transfer slips among air traffic controllers and the use of hospital medical charts that are not simply data exchanges but 'artifacts of coordination', physical points of contact between people that facilitate an awareness of their related activities. In replacing such artifacts, care must be taken to provide alternative mechanisms for sharing information among

participants or risk a decrease in coordination and effectiveness in collaborative work despite technology improvements.

Bannon and Schmidt (1989) suggest that "CSCW should be conceived as an endeavour to understand the nature of cooperative work as a foundation to designing information systems to support the work". This led them to articulate (1992) four primary questions that need to be addressed in the formulation of collaborative online tools. These were:

1. What characteristics distinguish cooperative work from individual work, and what support requirements derive from those characteristics?
2. Why do people work together, and how can computers by applied to address the requirements arising from the specific reasons?
3. How can coordination requirements arising during cooperative work be accomplished more easily using computer technology?
4. What do the identified requirements imply for the development of system architectures and services?

"The collaborative development of a local community information system depends upon initial formulation of the needs, resources, and abilities of people in the community whose interests the system is intended to serve. The initial formulation of the need and the specifications for the system is *the fundamental problem* [emphasis added] that must be solved before the system can be developed and deployed" (Adali, et al., 2002: 304). In addition they suggest that attention needs to be directed to: 1) the nature of the system, 2) the needs of the information providers, and 3) the needs and characteristics of the relevant audiences for the system.

Once these foundations are identified, collaborators will need to ensure that they include two very different types of information: subject-matter information and collaboration support information (Mills, 2003). Subject-matter information includes the data, research papers, news, events, policy documents, and other related content such as images, video clips, web links, etc.. Collaboration-support information would encompass partnership specific information such as records of previous discussions; MOUs and agreements about plans, procedures, and schedules for joint work; overhead data, such as session transcripts (which might include various types of media); as well as contact information of the various partners. This latter class of information is frequently omitted, causing participants to become unsure of the bargains that were struck and creating space for free-riding.

All of this information should be organized for user pull (easy retrieval by users through simple, easily navigable websites) and user push, either by information distribution to users (through e-newsletters, email broadcasts, etc.) or user subscription via pre-set user criteria or constraints.

Section 7: Activity Awareness Model

Neale et al., (2004) have developed an interesting frame for understanding the processes of social negotiation that underpin the development of an online tool to support community collaboration. It is based on the notion (often cited earlier) that in collaborative work partners consciously or unconsciously pay attention to the activities of others around them and that the more rigorous

and interdependent the work the more they must pay attention to each other in order to remain coordinated.

The term activities is this 'awareness model' refers to any actions that may be directed at meaningful, longer term, community objectives -- possibly involving goal decomposition, reframing, nonlinear development, joint planning, collaborative action, ongoing evaluation and feedback, and the fine tuning of both goals and strategies. It also involves the coordination of a variety of different organizational tasks, such as the assignment of roles, the making of decisions, education, negotiation, prioritization, and so forth. The actions to develop a web-based tool to support a CoP around YALLE, the use of that tool, and the partnership activities associated with understanding and supporting YALLE in Ottawa are all collaborative activities that would fit within this *Activity Awareness Model*. "These components must be understood and pursued in the context of the overall purpose of a shared activity, the goals and requirements for completing it, and how individual tasks fit into the group's overall plan" (Neale et al., 2004:115). **Figure 2** below presents an Activity Awareness Model adapted from Neale et al., 2004.

Key to understanding this model is the contextual factors among individuals, organizations and issues that underlie collaborative activities and shape or constrain how collaborative work is undertaken. As Figure 2 suggests, as the degree of *work coupling,* the extent of the closeness of the partners' working relationships necessary to achieve their goals increases, there will be an associated increase in the need to establish a common language, knowledge base and problem understanding. The need for more *common ground* increases the need for more information regarding each partner's *context,* the appreciation of each others capacities, resources, *expectations*, drivers and motivations, and organizational culture. In the end how and why a partner does what they do contributes to an awareness of each others actions and a raising of the bar on partner predictability and trust. As activity awareness increases, there will be an increase in the levels of social negotiation. The more that is demanded of partners the more frequent, open and intense the conversations between them must be.

Figure 2: Activity Awareness Model

Activity Awareness

Social Negotiation

Common Ground

Context

Lite interaction · Coordination · Cooperation · Collaboration · Partnership

Work Coupling

Source: Adapted from Neale, et al., 2004

In community collaborations the cost of social negotiation is even higher because of the distributed nature of the organizations involved. "Distributed systems fracture background contextual information significantly, especially the contextual information that is temporally removed from immediate interaction" (Neale et al.,
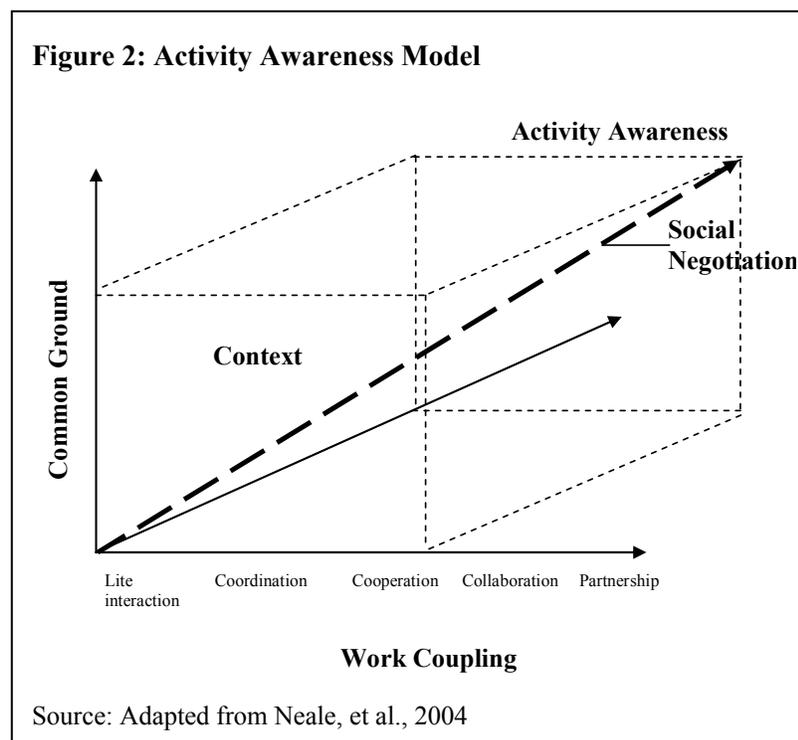
2004:115). Since people tend to act together <u>as if</u> they have a shared context (whether or not they actually do), collaborative challenges *inevitably* emerge as partners discover discordant values, assumptions, and histories to their own. Interestingly it was suggested by former US Surgeon General Jocelyn Elders that "collaboration [is] an unnatural act between non-consenting adults. We all say we want to collaborate, but what we really mean is that we want to continue doing things as we have always done them while others change to fit what we are doing" (Backer & Norman, 1998:7). Failure to understand and constantly reaffirm a shared context within a partnership as it evolves can be terminal. "It could be argued that altering shared context is the single most significant reason for the failure of distributed system use and ultimately its adoption" (Neale et al., 2004:116).

The *Activity Awareness Model* focuses on the central relationships that underlie these processes in distributed group work. The investments in communication (both tacit and codified), feedback and trusted relationships form the foundation for understanding how groups will perform given a particular degree of work coupling. These factors are proxies for the level social negotiation being undertaken and the availability of contextual information, the degree of common ground and the extent of mutual awareness. In the establishment of common ground and the development of an explicit or subtle awareness of each other's activities partners can begin to adjust to each other in furtherance of progress towards their common goal. Not only does increasing activity awareness provide each partner with a way of improving coordination, but it also helps to satisfy the demands of contingent cooperators.

More tightly coupled work requires greater demands on the group's communication and feedback infrastructure. The tighter the work coupling, the greater the demand for more coordinated behaviours and the need for stronger bonds of trust. Since partnerships tend to evolve over time, the communication and feedback infrastructure that is present at the outset may become insufficient as the work coupling becomes tighter. This gives rise to the idea of "distributed process loss" (Sproull, & Kiesler, 1991), or the operating costs associated with coordination that result from the degree of social negotiation that is required to manage partners and retain both their involvement and alignment in cooperative work.

The idea, however, that coordination is simply a cost is mistaken. Offsetting this collaborative overhead, although harder to predict and measure, are the levels of increased innovation and effectiveness that may be generated from social learning and the collective creative output of the partners. However, because cooperation is always contingent on benefits exceeding costs, the partners need to establish ongoing mechanisms to measure their progress as a means of reducing the uncertainty about potential benefits. Evidence of steady progress will go a long way to help to re-affirm commitments among partners who are still experiencing as yet unrealized benefits.

How big might the costs of collaboration become? If there are n number of partners, then there are $n(n-1)$ relationships in need of attention, leading some to the conclude that the manageable upper limit for effective collaboration is 25 (Elliot, 2006; Lipnack & Stamps, 2000). Within this limit, if the proper levels of communication and coordination can be supplied, groups can achieve and retain a sense of 'common ground', mutually shared beliefs (Neale, et al. 2004), and sufficient awareness of each other to support coordination among their actions. Nonetheless, as the nature of work becomes more tightly coupled (moving from light interaction to partnership)

the demand for activity awareness will likely increase, placing additional requirements for communication, feedback and trusted relationships.

What about groups that may be larger than 25? Elliot suggests the group could define a process of stigmergic collaboration of the type used in 'open source' collaborations or wikis. In stigmergic collaboration the action takes place first and then the social negotiation happens subsequently, so that there is little demand for relationship management. In fact, participants to stigmergic collaboration may have little or no relationship at all. The negotiation that takes place does so around the product of work *post*-action. Alternatively, a tiered approach to collaboration may be adopted that utilizes networks of small groups that are linked either through technology or structured meetings.

In applying the *Activity Awareness Model* in distributed technology environments, Neale et al. found that subjects required additional offline support for context sharing and the building of common ground. "Using collaborative technologies fractured contextual information critical to the collaborative process," (Neale, et al. 2004: 119) but when additional contextual information was needed it "was poorly supported" by the system itself and more relational approaches became necessary. This finding tends to re-affirm Heiner's assertion that non-technological endogenous feedback remains an essential ingredient of successful collaboration and partnership. As Neale et al. also observed, "[subjects] who had a great deal of *direct contact* [emphasis added] had many more sources of information that led to greater levels of awareness and common ground. As a result, there were fewer demands on information sharing and coordination, and important time could be spent collaborating and cooperating" on actual work (2004: 119).

Technical Considerations

In terms of collaborative database development, such as a community of practice might pursue to create a shared knowledge base, Adali, et al. (2002) suggest it needs to be "tightly coupled", so that users can search for specific information with fairly simple query formulations. This implies that partners who are contributing information to an online database may have to modify their data to conform to a common model. On the other hand, the researchers said the system should be flexible enough to allow providers to represent and display information in different ways. This is important because partners are likely to become concerned if they begin to perceive a loss of their identity within this type of shared information system. Fortunately, common data models do not conflict with the possibility of multiple and unique representations of that data on partner websites.

The ability to preserve individual partner identities while conforming to a standard data model also contributes to increased flexibility and adaptability within the data model itself. Since content and representation are likely to be change anyway as the partners learn from each other and evolve their understanding of their shared problem, this flexible is important. The implication of this is that a robust system would involve few specialized functionalities that are 'hardwired' into the system and that the system itself would be more modularized in nature. The most common functions of a collaborative technology solution, such as the ability to track

changes, make appointments, or recover from mistakes, should be provided by external systems that can be plugged in if and when they are required.

In practice, as the *Connected Kids* project revealed, even with a standardized data model, the simple process of data entry by multiple parties seemed to require "constant monitoring and attention" by both the development team and the organizational partners (Zappen, et al., 2006). However, with this type of caretaking facility in place, it becomes possible to establish and maintain links between separate organizational systems and people -- "one of the most desirable components of a collaborative information system" (Adali, et al., 2002).

Conclusion

Given the particular circumstances of the social sector in Ottawa, some of the practices for knowledge transfer which have observed and applied elsewhere may not be feasible in the context of SPCO's YALLE project. That said, we have identified in this paper a broad range of strategies which could be employed by the SPCO and its partners to improve the effectiveness and efficiency of a knowledge mobilization scheme in Ottawa. In choosing a specific strategy, or strategies, the CoP should be mindful of the YALLE project's four primary activities in addition to attending to the needs and capacities of CoP partners. These are:
1. to foster exchanges between researchers and practitioners;
2. to promote the application of research and improve practice in local initiatives;
3. to share organizational good practice and inter-organizational coordination; and
4. to produce new partnered research.

These four activities should form the backbone of any strategy of knowledge mobilization (Nutley, Percy-Smith and Solesbury, 2003: 33) and continued reference to them by community leaders will help provide common ground while the CoP is being established. The SPCO has committed itself to promoting these joint activities in the context of its current YALLE project with the Canada Council on Learning.

To accomplish these, the SPCO is proposing strategies which will include the regular face-to-face interactions between stakeholders, which the literature has consistently recommended as a best practice, as well as a strategy to develop a computer-based tool to help share information about YALLE in Ottawa among service providers.

As we have seen, transferring tacit and codified knowledge will require different strategies. Tacit knowledge transfer requires more personal effort and often a commitment to relationships while codified knowledge can be transferred more easily and quickly using fewer resources via channels like computer networks or the internet (Reagans and McEvily, 2003). Therefore the suggestion to the SPCO is to reduce "distributed process loss" by fostering small, interactive stakeholder meetings for complex issues requiring significant tacit knowledge transfer. Less regular and more general community forums (perhaps annually or bi-annually) could be adopted to help transfer a combination of both tacit and explicit knowledge in environments where researchers and practitioners can also begin to invest in relationship building and the exchange of both tacit and codifiable ideas regarding new research, new field experiences and opportunities for future joint research. Concurrently, an online solution could provide an opportunity to share

information updates in a more timely fashion, although obviously with less interactivity. It should be noted that once relationships are struck, an online solution becomes a more valuable tool to keep current.

Although both types of knowledge are important, the current practice of knowledge transfer tends to favour the exchange of codifiable knowledge (Solesbury, 2003). It is likely to be perceived as "less trouble", even though, as we have seen, it is also likely to be less valuable. The forums proposed by the SPCO involving different groups of practitioners and researchers will therefore serve as important conduits to begin the transfer of tacit knowledge on YALLE more broadly within the social and human services sector. Despite the importance of both types of knowledge (Reagans and McEvily, 2003), resource constraints within the sector will remain and therefore less intensive sessions will have to suffice for the transfer of formal knowledge.

As we have seen the costs of social negotiation and increased work coupling make knowledge transfer more difficult and time consuming in larger groups. To facilitate greater coherence and range amongst research users and producers in larger projects, it has been suggested that the promotion of partner diversity to better reflect the community will aid in knowledge transfer (Reagans and McEvily, 2003). Reagans and McEvily also recommend the establishment of "cooperative norms" to help reduce organizational competition and to foster a community knowledge 'commons' for the long-term. However, since it is it easier to transfer knowledge between people who share some already established relationship or knowledge base, the temptation is to pursue less wide-ranging interactions in the short term (Szulanski, 1996; Reagans and McEvily, 2003). Yet the risk here is in pursuing less comprehensive outcomes and failing to shift, if indeed a shift is required, the community paradigm and assumptions upon which practices are based.

Thus a successful SPCO strategy will likely involve a two-pronged approach, one that is pragmatic, self serving and short term and another which is more strategic, involving concerted efforts to evolve in a hermeneutic fashion both the practices and paradigms associated with YALLE in Ottawa. The costs, risks and rewards of a CoP inclusive of direct-service organizations, the SPCO, academic researchers and other community stakeholders will have to be clearly identified. Lastly, the relationships between these players will have to be nourished in a variety of ways.

The following represents a series of general guidelines that are suggested by this literature review and that are likely applicable to improve knowledge mobilization with regard to the YALLE project by the SPCO. The guidelines below also reflect the context of the YALLE project in Ottawa and the SPCO's unique community position and mandate in the social sector.

1) *Since passive dissemination of knowledge has been shown ineffective, active and engaging practices are more likely to foster knowledge mobilization in a variety of stakeholder communities;*

2) *Regular interaction between stakeholders is the most effective way to ensure that hierarchies of knowledge are agreed upon, that knowledge and practice evolve together, that the appropriate research is undertaken, and that research is easily translated into practice;*

3) *Strategies will differ for tacit and formal knowledge. Formal knowledge can be transferred through weaker links and through internet-based forums on an ongoing basis. Tacit knowledge requires more face-to-face contact to transfer and is more resource/time consuming but should be considered as part of a regular schedule. Forums that mix tacit and formal knowledge are also of value and should be undertaken periodically through then year. Both types of knowledge benefit from and contribute to stronger ties amongst stakeholders;*

4) *Effective knowledge mobilizers or 'champions' should be employed to facilitate partner trust, information exchange, and joint action in the sector as well as new opportunities for community-based research;*

5) *The CoP will need to remain open, inclusive, and responsive in order to benefit all parties and produce the best, most transferable practice;*

6) *Researchers within the CoP should be encouraged to provide written or oral summaries of their work for use by direct-service providers. Researchers should engage practitioners in order to align their work with already established service practices and workflow patterns to ensure more effective incorporation of their results into practice over the long-term;*

7) *Regarding a web-based process of disseminating research and collecting practitioner input:*
   - *Organizations should see themselves in the website, and have their contributions identifiable as contributions towards a shared community goal;*
   - *The design should reflect the type of feedback / knowledge exchange that is beneficial to local partners and reflective of their organizational capacity;*
   - *Since distributed systems fracture background contextual information about partners, the content of the website should also provide online and offline opportunities to share partner contexts. The more contextual information the easier it will be for partners to adjust to each other;*
   - *Mechanisms for measuring progress should be identified at the outset and built-into the processes of the website;*
   - *The technical infrastructure should include two classes of information:*
     - *subject-matter information, and*
     - *collaboration support information*
   - *The system should be designed with support for learning in mind;*

8) *The more the CoP becomes engaged in collaborative activity together, the more social negotiation will be required, mostly through non-technical channels and therefore time and resources need to be set aside for this;*

9) *Collaborative systems involve contingent cooperation. Therefore effective collaborations adopt attitudes of "trust-and-verify" while creating space for ongoing feedback, dialogue and social learning; and*

10) *Partners need to begin by establishing the principles under which they will work together and align their activities.*

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