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Community Organizations in the Information Age

A study of community intermediaries in Canada

UNIVERSITY OF
NEW BRUNSWICK



Canada



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1 EXECUTIVE SUMMARY

The organizations studied for this project are highly committed to providing information and services for the betterment of individuals and their local communities. These services matter and have positive outcomes and impacts. With qualifications, the researchers conclude that these organizations range from marginally to highly effective, but in all cases are invaluable community resources. The principal qualification is that all the organizations studied face numerous obstacles and challenges in being able to realize their full potential to meet the needs of citizens and the goals of different levels of government, in the provision of information and service delivery leading to desired, and in many cases, required outcomes. One organization studied is much more able than the others to achieve these goals, largely due to funding resources, but it faces other challenges. The other three organizations exhibit different levels of effectiveness, with the potential to do much more, but grapple daily with daunting funding and operational challenges.

This study provides in-depth, rich analysis of the organizations and in this report their stories are told through both the findings of the researchers and in the organizations' clients' and staffs' own words. In many respects, the theme of this study is that of opportunity. The organizations, their staff, and the various governments and organizations that support them are on the right track – but things need to, and can, be done better: through better understanding; better support; and working more closely together. The research team would like to offer a very special thank you to the community organizations, their staff, volunteers and clients for allowing us to look at their lives and tell their stories. It is our hope that this study contributes to a better understanding of the roles of community organizations, and improvements in the support and operations of these to the benefit of communities and citizens.

1.1 PURPOSE OF THE STUDY

The objective of this study was to investigate the roles, challenges and opportunities for community organizations in their provision of information and services to meet the needs of citizens using information and communication technologies (ICT). These organizations are described as community intermediaries because they act as links between various levels of government (federal, provincial or municipal) and citizens.

This study analyzes:

- the means employed by community organizations to provide learning and employment resource services and health and wellness information;
- how community organizations use information and communication technologies (ICT);
- the benefits, challenges and barriers of using ICT for the organizations and their clients.

1.2 METHODOLOGY

The study used a mixed approach of qualitative and quantitative methods including in-depth interviews, focus group panels and survey questionnaires. A representative sample was chosen for the client survey reflecting their income levels, gender, ages and language spoken. The response rate from the completed client surveys was 45 per cent (n= 514). Information environment mapping (IEM) interviews were also conducted.

1.3 COMMUNITY INTERMEDIARIES IN THE KNOWLEDGE SOCIETY

Historically, community organizations played a highly effective role of providing relevant services to meet core socio-economic needs of community members. The roles of community intermediary organizations, to provide information and services to local citizens, have become increasingly important as citizens' needs change in the emerging "knowledge society."

- These organizations are very important resources that allow governments to meet policy and program objectives.
- Community intermediaries act as partners, sub-contractors and surrogates in the delivery of government information and services.
- In many instances, citizens seek and use information and services from a community organization, rather than directly from a government department or agency.
- The continually expanding mandates and activities expected of community intermediaries in providing government services have not been sufficiently supported by the various levels of government.
- The weakness in this virtuous circle of information and service delivery is at the level of resources: community intermediaries do not have the resources that they need either to meet the demands of citizens, or to manage and distribute government services and content that are continually changing or inadequately developed.
- The community organization resources that are required in order to effectively provide program and service delivery are: staff resources; information and service content

development and dissemination; technology maintenance and upgrades; staff IT training; human resources development and support, and effective level of communications (e.g., access to high-speed internet services, multiple channel service delivery, etc.).

- Many of the clients of community organizations are already on the margins of society based on their socio-economic circumstances. How ICT are used for information and service delivery can contribute to these people's greater inclusion in society, or further marginalize them. Considered, carefully designed strategies and practices for different means of communication are required to achieve inclusion and meet needs.

Where formal relationships already exist, governments at all levels are increasing the demands upon, responsibilities of, and accountability by community organizations. However, these organizations have not received commensurate support with the required resources to be effective, and in some instances, sustainable over the longer term. The community intermediaries were of the view that by essentially doing the work for government, financial support should be provided to assist with at least some of the core operating and personnel costs of these organizations. Without this, the risks increase that service delivery will not be effective and that the ability of the community intermediaries to adapt and change to meet the evolving needs of the public will be limited. In addition the sustainability and prospects for continuing operation of these organizations becomes a growing concern.

A real opportunity exists for the federal government and community intermediaries with the Services Canada initiative or, given that this initiative may not reach fruition in its current form, its underlying service strategy. The service strategy of Services Canada closely aligns with the existing strategies and processes employed by community organizations. This would include, for example language of use, multiple communication service channels, through "boutiquing" or packaging information and services around the specific needs of communities and citizens, etc. Pilot program delivery by Service Canada includes progressive and innovative initiatives to facilitate community-level services, including cost sharing of local personnel by government departments and non-staff resource support. Of mutual benefit to the federal government and communities/citizens would be the establishment of close collaborations and partnerships between Services Canada, or departments using the same service strategy, and community intermediaries. Such partnerships should address the service needs of the public, and provide various forms of support for addressing the critical resource problems experienced by community organizations.

There have been high-level investments by government into infrastructure and digitization of back-end services and content. While these are required components of a national service

infrastructure, these have not had significant impact or value at the local, community level. Greater attention and resources should be devoted to service delivery at the community level to meet the needs of Canadians as well as to ensure successful program delivery and thereby achieve policy objectives. As part of this, the federal government, individually, and in collaboration with provincial and territorial governments, should ensure the availability of relevant content in multiple use formats, available across Canada in the official languages as well as in minority languages.

Community intermediaries deliver many specific programs for government departments through contracting and similar arrangements, such as employment insurance, data bank job searches, employment training skills upgrading, work placement, as well as health information/services, and others. Government departments and agencies should provide increased resources, including financial, technical and content. This is in order to ensure that the community intermediaries have the capacity to provide service levels that contribute to successful specific program and policy objectives.

1.4 FINDINGS OF THE STUDY

1.4.1 FUNDING

Funding arrangements

Funding for learning and employment resource organizations is a mixture of core, fee-for-service and program funding. Unsustainable funding situations affect staffing, ICT and Internet services negatively in information and service delivery:

- funding arrangements are contingent, variable and not sustainable either for program delivery or new programs;
- core funding is being phased out;
- short-term, fee-for-service and project funding is inadequate to cover the current operating costs of each of these organizations.

Staffing and funding

The short duration of project funding at the learning and employment resource organizations has resulted in widespread job insecurity, and working short-term contracts:

- as staffing decreases, so too do services to clients;
- there is inconsistency in salaries;

- there is a high rate of staff turnover;
- volunteers are rare.

ICT funding in grants and programs

Grants and government programs exclude funding for necessary supportive resources, including:

- software;
- hardware (computers, peripherals, networking etc.);
- staff ICT training;
- Internet access, high-speed services;
- IT maintenance and upgrades;
- integration of IT systems.

1.4.2 COMPOSITION OF CLIENTS

The composition of the clients at each community organization is an important factor that has to be taken into consideration when delivering services and information.

- A majority of the clients at the learning and employment resource organizations have low-income levels (\$5-15,000/annum).
- Many clients are young adults between the ages of 19 to 35 requiring basic needs (income, food, shelter, and clothing).
- A concentration of seniors at a specific organization (i.e. the health and wellness centre) places particular demands on service delivery (which are likely to increase in the future).
- Major challenges to service and information delivery include: low education, illiteracy; learning difficulties; mental health problems; physical disabilities; visual, hearing or cognitive impairments; lack of work experience and being intimidated by technology.

1.4.3 LANGUAGE BARRIERS

Health information and services need to be available in English and French to ensure minority language speakers understand diagnosis, treatments and services.

The organizations do not have the capacity to address the needs of non-official minority language speakers. A significant percentage of the growing client bases are comprised of Aboriginal peoples and recent immigrants.

1.4.4 CLIENT INFORMATION AND SERVICE INTERESTS

Clients are interested in the following types of government services:

- skills upgrading, lifelong learning, computer literacy and numeracy upgrading services;
- health and wellness information.

1.4.5 INFORMATION AND COMMUNICATION TECHNOLOGY

A substantial investment of financial, human, and technical resources is necessary to ensure that these organizations will be able to effectively use ICT to deliver information and services to their clients:

- all the community intermediaries studied face considerable challenges using ICT to deliver information and services;
- a multi-channel approach to delivery – with the emphasis on telephone and face-to-face personal contact – is how community intermediaries will continue to operate in the foreseeable future;
- for the three organizations without adequate and sustainable core funding, using ICT effectively is an overwhelming challenge.

Multi-channel delivery

Community intermediaries use a multi-channel approach to delivering services and information:

- ranging from posters and pamphlets to websites – to inform and provide services to clients;
- most information and services are provided by telephone and in-person;
- most clients prefer personal contact.

All the organizations use ICT for operational use and delivering services and information, however not all are doing this effectively:

- all four organizations have websites, but only two use them strategically and keep them maintained;
- three of the organizations provide computers for clients to access information and services online, despite considerable challenges;
- lack of high-speed infrastructure is a barrier to service delivery for the organization in a rural area.

Information communication technology benefits

The benefits for clients using ICT for information and service delivery include:

- easier access to information and services;
- increasing their ICT skills for employment;
- increasing their social capital when using computers in community settings.

The benefits for staff and organizations using ICT include:

- easier access to information;
- getting information for and to clients more quickly;
- networking more effectively with funders and partners.

Information communication technology barriers

However the barriers of using ICT outweigh the benefits for many clients:

- the primary barrier is lack of access to the Internet – levels of home Internet access range from 70 per cent for clients of one organization to 30 per cent for clients of another;
- the high cost of computers and Internet use;
- community Internet access is not always available or appropriate;
- many clients have a low capacity to use ICT effectively.

Effective ICT use by the organizations faces significant challenges:

- ICT troubleshooting and ongoing maintenance is a common problem;
- using and maintaining ICT software;
- outdated or absent hardware and internal networks;
- software glitches that no staff member can fix;
- not having enough computers or Internet connections;
- having old computers that crash often;
- assuring an adequate electrical supply for ICT;
- significant challenges with internal phone systems.

Staff ICT training

Staff ICT training is an ongoing issue for community intermediaries because of new emerging ICT and evolving requirements for service and information delivery.

- The one organization with adequate and sustainable core funding has the highest staff ICT capacity and is the best prepared to ensure future staff ICT training needs are met.
- The other organizations face significant challenges ensuring adequate staff ICT capacity, primarily because their limited funding also limits their ability to ensure that staff members are trained to use ICT effectively.
- None of the organizations has a staff ICT training policy in place.

1.4.6 INFORMATION SEEKING AND DECISION MAKING

The most significant types of constraints and influences on the access and exchange of information in these organizations are, without ranking: technical, affective, economic, and organizational:

- lack of access to current networking and data sharing technology;
- priority given to non-technical interpersonal communication;
- financial constraints faced by all organizations and many of their clients;
- frequent change within external sponsoring agencies requiring organizations to change the ways in which they access and process information;
- geographic barriers due either to the location of the organizations and/or clients' lack of transportation;
- lack of training by both clients and staff in the use of ICT;
- the necessity of relying on social networking by staff to obtain critical information for their clients.

An improvement in the ICT infrastructure of these organizations would enable staff to offer even greater levels of service. Improvements should focus on:

- minimizing the communications difficulties faced by clients;
- increasing the administrative efficiency and capacity of these organizations;
- organizations' needs for software and networking infrastructure for performing statistical analysis, file sharing and remote access by staff.

Improvements to information management are also necessary in the external organizations, such as government, with which these organizations interface:

- information architectures of external organizations should be designed and managed such that on-line documentation, reporting requirements, and information about administrative procedures are easier to find and use;
- architectural improvement in this should also be designed to mitigate the impacts of frequent organizational changes by the external partners on these community organizations.

1.5 POLICY AND PROGRAM RECOMMENDATIONS

- Federal and Provincial governments should formally recognize the role of community intermediaries as providers of government information and services. As part of this, these

governments should provide support and training for the organizations' staff to better ensure that information provided to clients is accurate.

- The various levels of government should establish better communications and planning mechanisms to develop a coordinated approach to funding.
- There should be more consultation with and engagement of the community organizations, including the front line workers, in the development of policy by governments.
- Policies and practices with respect to programs and contracts delivered by intermediaries need to be revised to reflect the real costs and challenges of service delivery. Overhead costs, IT costs, accounting, support staff and other costs not currently covered by project funding needs to be included.
- The process of program development and review should include close consultations with the community organizations and their staff who deliver the services.
- Project time frames need to be extended from short-term to medium and long-term so that the real costs of projects are covered and the projects operate long enough to be successful.
- Government programs should be more flexible to accommodate community and individual circumstances and needs. Programs and services should be adapted to needs rather than the current situation, which has people being fitted into programs.
- There is a need for better communication and provision of supporting materials and resources to community intermediaries by federal departments when they change their programs and services. The current delays and outright lack of good, clear communication of changes results in delayed service delivery and forces intermediaries to continually re-do work. Improvements are necessary to increase the efficiency and quality of service provision to clients.
- Beyond how the intermediaries operate, the services they provide and the communications technologies employed, there remain deep-seated socio-economic challenges around literacy, poverty, education, skills, and disability, among others. There will be a continuing need to ensure that programs and policies provided directly to individuals and through community intermediaries are comprehensive enough to address these challenges.

Government policy and program officers should undertake ongoing engagement and consultation with front line workers in order to create a better understanding of community issues and needs. This would improve the links and outcomes between policy, programs and citizens' needs.

- If government services and information are going to be delivered on-line, citizens want sites that are easy to use and secure. They also require reliable information, particularly health and wellness information and a guarantee that their personal privacy will not be compromised.

1.5.1 FUNDING

- Federal and provincial governments should consider providing an adequate level of core funding to community intermediaries to ensure that the organizations are able to continue to operate and to do so effectively.
- Project funding rules by the federal government should be reviewed to consider the inclusion of ICT costs, ongoing ICT maintenance and support costs, as well as training costs for staff and clients.
- Funding levels for projects and other initiatives should be sufficient to meet both the expectations of the funders and the needs of the organizations.
- Funding support is required for ICT training for staff and volunteers.
- There are still many rural and remote areas without high-speed service. The federal government should ensure that at a minimum, this level of service is available locally to municipal, social services (health) and community service organizations.
- The federal government should consider supporting the introduction and use of videoconferencing for health service and information in rural and remote areas. Such an initiative should include providing these services to minority language speaking citizens in these areas.
- To ensure access to government services and programs for people without home Internet, governments need to consider providing financial support to keep open and maintain

community access computers. The funding would need to include support for computer upgrades, maintenance, appropriate technical support, as well as staff and user training.

- Funding is required to assist with hiring and maintaining staff for critical core activities in community organizations, especially those positions that involve managerial supervision and accountability, IT support, staff and client training activities.
- Funding is required by organizations for internal client needs assessment analysis, as well as program and materials development.

1.5.2 ACCESS AND CONTENT

- The federal government should address the issue of phonelessness for low income and homeless citizens.
- The federal government should address the continuing issue of the lack of high-speed service in rural and remote areas.
- How information is provided to disadvantaged people needs to be improved, including how it is presented on the Internet.
- More information programs are required to address socio-economic needs, such as health information and basic education among others.
- Funding and other forms of support are required to translate documents and information into other languages (e.g. Aboriginal).

2 INTRODUCTION

2.1 PURPOSE OF THE STUDY AND METHODOLOGY

The objective of the *Community Intermediaries in the Information Society* study involved investigating the roles, challenges and opportunities for community organizations in their provision of employment, health services and information to meet the needs of citizens, using information and communication technologies (ICTs). Until recently Canadian employment services were delivered primarily by federal and provincial levels of government. Where as, the provincial governments provided health information and services. For the past ten years the federal and provincial governments have down-loaded the delivery of these services to community development and other non-government organizations. The study defines these organizations as community intermediaries because they act as links between various levels of government (federal, provincial or municipal) and citizens, delivering social services and information to clients.

The community intermediaries study investigated the specific social needs and challenges at four Canadian not-for-profit community-based organizations located in the provinces of Manitoba, Newfoundland and Labrador, Ontario and Quebec. It considered the community context in which the community intermediaries operate and the services and information they provide to their clients. The Skills and Training Organization delivers services and programs to people who are unemployed/underemployed or dependent on some form of government social income support. The Job Placement Organization offers vocational training, job placement and onsite job training to persons with mental illness and other disabilities. The Community Development and Employment Resources Organization provides job resource services as well as community development to neighbourhood residents. The fourth organization, the Health and Wellness Centre, delivers health and wellness information and services to a minority language group.

The questions that guided the study are:

- What are the means employed by community organizations to successfully provide education, skills, literacy, health information and other resources for citizen engagement?
- How do these organizations use information and communication technologies (ICT)?
- What are the opportunities, barriers and restraints for using electronic technology to deliver client information and services?

The study used a mixed qualitative and quantitative methodology and gathered data in two phases. Phase 1 involved analysis of reports and the web sites of each organization. A

demographic profile of the geographic areas where the four community organizations are located was compiled from the Statistics Canada 2001 census data. In Phase 2, 2005, the research team conducted individual field trips to the four community intermediary organizations. The data gathered and analyzed for Phase 2 is discussed in sections 3, 4 and 5.

The CIRP study gained insights from 33 in-depth interviews, 31 with key staff members along with two Boards of Directors' interviews. Self-administered survey questionnaires were also distributed to all of the staff members at each organization. The completion rate for the self-administered staff surveys was 62 per cent (n= 44). Focus group interviews were conducted with 36 staff members

To ensure that a representative client sample was achieved for the client focus panels and surveys, the researchers worked with staff members to reflect the client base. This involved taking into consideration the spectrum of client income, age, gender and language spoken. Four client focus discussions were conducted with 39 clients. Self-administered surveys were distributed to 50 per cent of each organization's clients. The response rate from the completed client surveys was 45 per cent (n= 514).

The CIRP team is confident that the client survey sample is representative of the client population at each organization. The analysis that follows in sections 3 and 4 is able to generalize to the community intermediaries' client population. This sample was not, however, used to make any generalizations between the clients of each organization. Furthermore, this type of sample disallows generalizations to be made to the larger population, for example in all of Canada or the area where the organization is geographically located. The data allows reporting with confidence, tendencies and the provision of descriptive analysis of the client base at each organization.

The fieldwork also involved conducting information environment mapping (IEM) interviews with 40 staff members. The IEM methodology and analysis of key findings are discussed in section 5.

3 COMMUNITY INTERMEDIARY ORGANIZATION ISSUES

3.1 FUNDING IMPACT ON INTERMEDIARY SERVICE AND INFORMATION DELIVERY

How a community intermediary is funded has a major impact on the services and information it delivers to clients. The health and wellness centre has a significant advantage over the other three organizations that deliver employment resource services and programs. This advantage stems from the core funding the centre receives from the provincial health department on an annual basis. Although provincial health funding formulas may change from year to year, this core funding for the health centre is relatively secure. The centre has partnered with three other community organizations to form a not-for-profit corporation that engages in securing foundation grants. Designated staff members spend a significant amount of time fund raising. The centre has also received some project funding, primarily from Health Canada. The primary service of the centre is to deliver services such as general health, well-being and illness prevention, tailored to the needs of different client groups. For example, services for young people could range from sexual abuse prevention to drug and dependency issues. Adult services may focus on prenatal services and postnatal follow-up. Social isolation has to be addressed for clients with mental health problems whereas seniors require health care and home care, and their at-home caregivers require assistance and support. Many of these services are delivered on-site or in specific locations throughout the community. If more funding were available, however, it would be possible to increase outreach activities.

We're in a very unique situation. For the first time that I'm aware of perhaps, in at least the last decade, the federal government is really investing money into the minority language community ... and so I feel I just can't consciously say that we're missing funding, because we're not. But I'd really like to see it continue and there are a lot of other things I could plan, so I'm hoping that it will continue and that it will even grow. And I really think that ... provincial governments need to play a more prominent role in the development of linguistic minority services (Health and wellness centre SI-6).

Securing sustainable funding for the three employment resource community intermediaries is one of their major problems. Each of these organizations has received three years of funding and support to develop Community Learning Networks. The job placement organization's funding is a mixture of core, fee-for-service and program funding. With the change to fee-for-service project funding, the organization's funding was reduced by almost 50 per cent. Annual core funding of approximately \$600,000 from the provincial government funds most of the programs and outreach services the organization provides to homeless people. The organization receives a small amount of core funding from the municipal government. There is, however, a possibility this funding arrangement may not continue. The organization receives project-based and fee-for-service funding from both federal and provincial levels of government. As well, a significant amount of staff resources is used to fundraise, applying for 25 to 35 grants per year.

The organization's inadequate financial resources have had a major impact on the staffing situation, as well as the service and program delivery. Staff salaries are not competitive because in most cases the provincial departments funding the organization do not augment the salary rates or recognize that many staff members are unionized. One provincial department this year allowed staff a 3 per cent salary increase, their first increase in 12 years. The only way salaries can increase is to decrease the number of staff. As staff decreases, services to clients decrease. Some funders have said the organization is not allowed to decrease the number of staff. The short duration of project funding, compared to core funding, means that job insecurity is widespread. Some staff members are on short-term contracts – two-week contracts were mentioned - and have no job security, adding to the general stress levels. The fee-for-service funding model means even more staff time is spent on administrative tasks rather than addressing client needs. Staff members expressed sadness and frustration at the overall situation related to funding insecurity. Another staff member explained:

Whenever our contract is coming up you are getting a little stressed because you haven't heard anything and they won't tell you until the day of, like your last day, whether or not you are going to be renewed. ... You are worrying about all your clients, you are worrying about yourself. What types of supports can you provide referral wise? (Job placement organization, SI-4).

This organization, like the other community-based organizations, has found it increasingly difficult to use volunteers. There is not a ready supply of volunteers anymore and it is extremely difficult either to get volunteers on its Board of Directors or to come and work with clients.

Funding is a major problem for the second employment intermediary, the skills and training organization. The organization receives all of its funding from both federal and provincial government departments, with monthly fee-for-service payments attached to each program delivered. Program and project funding is inadequate to cover the core costs of running the organization. The most obvious impact, aside from the low ICT capacity, is the effect on human resources. Because there is no core funding, staff members are on contracts. The funding is not enough to provide secure employment or good working conditions for the staff. As contract workers, staff members do not belong to a union or representative association. There is inconsistency in salaries, dictated by how the government funds different geographical areas: some staff members are receiving less pay than others for doing the same work because of where they are located. Low staff salaries have contributed to rising staff turnover rates. Some staff members also put in long volunteer hours to write funding applications, and all of the staff has to work long hours to ensure they are paid an adequate income. Volunteers to help paid staff are rare, with some former volunteers having left the province to seek employment. The staff has not had a salary increase, even for cost of living, for six years.

This generally unsustainable funding situation has had a negative impact on the organization's capacity to deliver information and services. In some of its offices, the number of staff is adequate to deliver the required services. In other offices, more staff is needed but there are no resources to hire more people. The organization does not have the staff resources or the ICT capacity to deliver information and services – including life-long learning services – using computers and the Internet in a sustainable way.

The third employment intermediary, the community development and employment resource organization, has a number of funders including provincial, federal and municipal governments, as well as foundations and private donors. The municipal government provides yearly core funding that has been reduced to \$75,000 for all administration, rent, legal, accounting, audit and other expenses. Most of the organization's funding is project-based, which has created many organizational challenges. Until fairly recently, the organization had serious management problems, but that situation is currently being addressed. The organization cannot charge user fees because of the low-income levels of its clients.

The organization has very limited funding considering its broad range of services and the needs of the community. One staff member described the organization as "kind of hanging on" to its financial and human resources capacity. All of the service areas are stretched and many current

activities rely on volunteers. Service areas are budgeted tightly and the scope of projects is curtailed by available funding.

Staff members are also concerned about starting new programs without assurances of funding sustainability. Without sustainable funding: “it will be just another well-intentioned program that’s fallen by the wayside and it will be another disappointment and frustration for people in the community who are left hanging with half an education or reduced access” (Community development and employment resource organization-SI-3).

3.2 CLIENTELE COMPOSITION AS A FACTOR IN SERVICE AND INFORMATION DELIVERY

The age of clients varies among the organizations. The community development and employment resource organization and the skills and training organization have a majority of clients who are young adults, aged 19-35. The majority of clients at the job placement organization are middle aged, 35-55 years old. The health and wellness organization has a majority of clients who are middle aged, 25-54 years of age, and seniors who are 65 years and over.

The community development and employment resource, skills and training, and job placement organizations service clients who tend to have low income and lower middle-income levels. The majority of clients for each of these organizations have incomes of five to fifteen thousand dollars per annum. The health and wellness organization provides services to clients who fall across the complete spectrum of income levels, but the majority tend to have lower incomes while some are in the higher income bracket of more than sixty-five thousand dollars per annum. The majority of the clients who use the health and wellness centre are middle aged, 25-54 years old and seniors 65 years and over.

Client barriers at the health and wellness centre include language barriers, aging, mental health problems and social isolation. Additionally, staff pointed out that some clients find technologies to be very intimidating. As one staff explained

... [clients] really like it when it’s [services are] personalized and when we bring it to them in different ways. So it might be a small group on one time, it might be questionnaires on another, it might be PowerPoint through, you know, the computer and through the Canon

projector. Another time it might be in film form, but we don't use the same mode all the time. We like variety, the diversity, but their favourite is when we are presenting it in person (Health and wellness centre SI-5).

Staff members identified a number of challenges and barriers to delivering client services and information. The first challenge is one of geography – delivering services and information to people living over a large region. The second is the challenge of language – because all health and wellness information has to be translated. A third challenge is ensuring that the members of the larger majority language health services network remain aware of and engaged with the organization. A fourth challenge is being aware of the needs of the clients so the centre is ready with required reliable, up-to-date information that the organization can give to clients when needed. A fifth challenge is ensuring that the centre is included in all aspects of the integration of the health IT system, currently being developed.

A majority of clients at the job placement organization are middle-aged (between 35 and 55 years old). Income levels are low; clients receive from five to fifteen thousand dollars per annum. The organization's staff members explained that although client needs are primarily employment-related, the organization addresses learning and social needs as well. Clients have many needs, including basic human needs such as food, income and housing security. Some clients cannot afford to pay for public transportation to visit the organization. Many clients have cognitive impairments and learning difficulties, and some have psychiatric conditions. Delivering information and services appropriately to these clients requires more energy and time than staff members have available.

Staff members also identified illiteracy, hearing disabilities and physical disabilities as possible barriers to the services that the organization offers. Clients with walking difficulties and those using a wheelchair are able to access all staff members and programs by using the elevator. One staff member was in the process of learning sign language to communicate more effectively with clients who have hearing disabilities. Clients with literacy barriers receive additional levels of service from staff, such as verbal explanation and the reading of written documents and forms. A staff member explains that clients need:

... a place of acceptance, of non-judgement and just a place that gives them an opportunity to go forward in their life (Job placement organization-SF).

Staff members want to be able to refer clients to other services, but many of the local services for their clients have been cut. Staff members also need more information about existing services provided by other organizations in the region. However, many of the information resources on local services are out of date, presumably for the same reason that many of the organization's own information resources are out of date: there is no time to update them.

The skills and training organization has a majority of clients who are young adults, between the ages of 19 and 35. Most clients have low income and lower middle-income levels with a majority in the five to fifteen thousand dollars per annum range. The organization responds to clients' economic and learning needs. To identify employment options, employment counsellors conduct a client assessment, taking the client's interests into consideration. Goals are established such as completing secondary education, acquiring a community college diploma, pursuing a university degree, or obtaining a trade certificate. In addition employment counsellors provide career planning.

Client barriers include low education levels and a lack of employment skills, which affects the ability to progress both in their work and personal lives. Social barriers range from a lack of a work ethic, a lack of experience with fulltime employment and not understanding the responsibility of full-time work. Some staff participants thought some of the clients were afraid of full-time employment and the commitment it requires. These barriers can be traced to previous seasonal work patterns and not understanding the concept of working all year around. The other barriers included the frequency of low literacy skills, the prevalence of level one secondary education (grade 8 to 10), the lack of a certificate, diploma or a grade twelve education level. Other barriers involve the frequency of alcohol and/or drug addiction or the presence of a mental or physical disability.

These barriers result in staff making a considerable investment of time and effort before a client can be trained or retrained to enter the work force. First, a CAT (aptitude) test is conducted by an employment counsellor. If the client reaches level two or three, he or she is then eligible to go to an Adult Basic Education (ABE) centre to obtain a grade twelve education. Once the client receives the ABE certificate, the person can proceed to a trade school, community college or university. People with disabilities are referred to the Ability Employment Cooperation (AEC) program where, after an assessment, the AEC contacts employers on behalf of the clients for work placements.

The criteria for service programs, however, do not always meet clients' needs. Many clients do not meet the minimum educational requirements – often a high school diploma – for the skills

training programs. They often do not score high enough in the aptitude test to apply for educational upgrading. In these cases, the clients have to get help on their own and teach themselves before trying the aptitude test again. Because it may take years of intense training for clients to reach the required aptitude level, the challenge for the organization is keeping clients motivated.

Another service delivery challenge is that clients with disabilities often will not self-identify or admit to having a disability. In these cases, the organization cannot refer the client to the appropriate social services, and so clients with disabilities are not adequately served. The organization also has challenges reaching out to young people in the area because many young people do not listen to radio, watch TV or read the newspapers.

Clients described the “valuable work experience” they received from this organization in the form of job interview training and the computer training to access the on-line Job Bank (Skills and training organization-CF).

The clients of the community development and employment resources organization tend to have low income and lower middle-income levels. A majority have incomes of five to fifteen thousand dollars per annum. For the most part the clientele is young, between the ages of 19 and 35. These clients have many basic needs including food, shelter and clothing. Clients require information and services to help address a combination of social, cultural and economic needs. These include: more education; employment and financial security; child-care services; a space to meet and interact; literacy; or learning to read, write and speak English as a second language.

Staff members pointed out that some clients do not have much self-reliance. Stigmatized by living for long periods of time on social or partial assistance, they lack confidence in their own abilities. Having low or partial levels of income or no income at all contributes to senses of alienation and lack of purpose. Some staff members expressed frustration at not being able to address community needs because of the specific parameters of the individual services they offer. Other problems include the high number of transient residents in the area, which makes it challenging both to reach potential clients and to offer longer-term services.

Clients praised the services they receive. They have very positive views that the organization plays a role in “encouraging a sense of belonging” and “creating an innovative community something you don’t find all over Canada.” Clients also explained that the organization offers practical assistance in that “you can grow your own food and you can still live in an apartment”

and “I am not discriminated against because I am Aboriginal as much here” (Community development and employment resources organization-CF).

3.3 MINORITY LANGUAGES AND SERVICE AND INFORMATION DELIVERY

Minority languages have an impact on service and information delivery for three of the four community intermediaries, and as previously discussed, the primary purpose of the health and wellness centre is to provide health and social services to a minority language group that resides in an area where services are delivered in the language of the majority. Staff pointed out how important it is to receive health services in one’s first language, particularly as a person ages, to ensure diagnosis, treatments and services are understood. A significant portion of the centre’s clients are seniors who are minority language speakers, and who until this centre began to provide health services, experienced a sense of isolation, a lack of support, and a lack of knowledge about health and wellness services.

A major challenge for the centre is translating provincial government health information. One of the staff members explained that the difficulty of language translation is that one has to take extra care to move beyond the literal “to make sure that you are getting the gist.” Other challenges included ensuring that information is reliable and up-to-date, and that it can be made available to clients as they need it.

Service and information delivery in minority languages for the community development and employment resources organization is a growing concern. The organization recognizes that services and information cannot be delivered the same way to everyone because of the language mix. A majority of clients are English language speakers, a significant portion is made up of Aboriginal peoples who speak different native languages, and an increasing number of clients are recent immigrants to Canada. Currently, the organization does not have the capacity to address the needs of these non-official minority language speakers. One staff member said:

I am not suggesting that we could functionally be able to help all those people because we do have limited staff and funding, but we should at least have the resources to be able to connect them with somebody that can help them, and very often we do not (Community development and employment resources Organization-SI 3).

The organization is hopeful it will be able to support the development of English as a Second Language (ESL) classes for recent immigrant clientele. The job resource program personnel are considering providing services in native language(s) or first language. Some outreach has already begun with articles in its local newspaper in two minority languages.

The job placement organization offers client services and information in English only. Eighty seven per cent of the clients surveyed indicated their first language is English. Of the 13 per cent of respondents whose first language is not English, 11.8 per cent said that the language difference made it difficult for them to access the services and information from the organization. Some staff members speculated that if the organization had more multi-lingual staff it could perhaps attract more clients.

Almost all (99 per cent) of the clients at the skills and training organization are English speakers – the majority language group. Services, information and programs are provided in English and unless there is a major change in the area's demographics, minority language issues will not affect service delivery.

3.4 LIFELONG LEARNING SERVICES

Life-long learning is an integral component to all of the client services, information and programs offered by the three employment resource service organizations, but it is not within the purview of the health and wellness centre.

The job placement organization provides employment programs and services ranging from vocational training, job placement and job coaching to on-site job training. Additional employment services include group and casual work placement leading to paid employment. Job searches are part of the organization's targeted job development program. A few clients conduct their own job searches on the HRSDC on-line Job Bank with less assistance but most clients rely on staff members to help with their job searches. One of the programs, *employment quest*, helps clients find permanent, temporary or casual work. Another employment program is an agency-sponsored entrepreneurial business that offers individual or group on-the-job training for industrial kitchen employment.

The organization offers additional pre-employment services, such as resume writing and interview workshops. Beyond employment, mental and physical health programs are also provided to

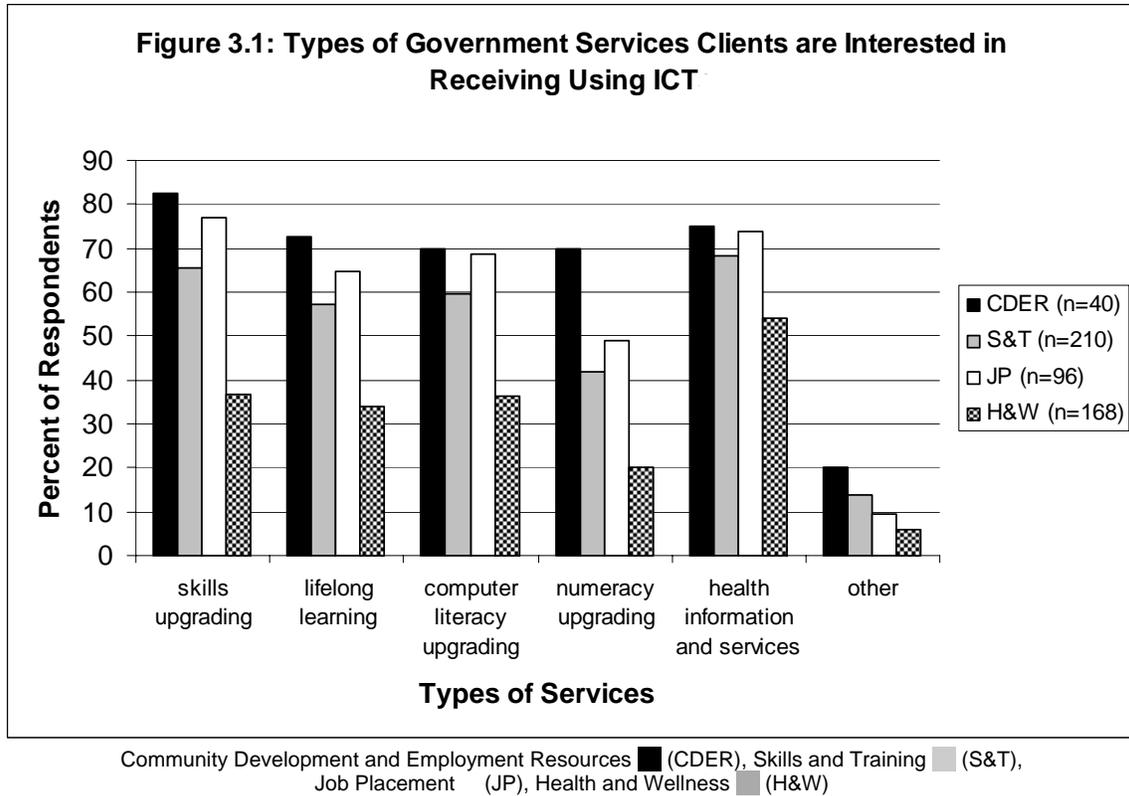
address health and wellness needs. Other support functions involve finding and maintaining housing, medical appointments and referrals. The client's benefit from all of these programs by gaining work experience, and being better prepared to find and hold employment. A staff member explained that preparing the clients for the work environment involves finding work and developing:

... social skills, working with individuals, how to communicate with other people and being assisted to integrate into society (Job placement organization SI-4).

The life-long learning programs at the skills and training organization benefit clients by providing both formal and informal training and skills development. Services and programs include one-on-one assistance for clients conducting labour market research, resume writing and teaching the basic skills to conduct an Internet job search. A program that combines education upgrading, retraining and job placement provides information is described on the organization's web site. The program's popularity is reflected in the 75 applications that the organization received for 10 to 20 participant spaces. The web site is not only informative, but it answers commonly asked questions before people physically visit the organization to check their eligibility for the program. As discussed in section 4, ICT training is mandatory for clients that are accepted into this program.

The community development and employment resources organization's life-long learning programs help to build human capacity. Any service and information delivery by electronic services will depend on the direction the organization plans to take in the near future. Currently the organization has reached the end of its federal government community learning network project funding and so has cancelled the client ICT education service training. Clients at the three employment resources organizations value the importance of skills upgrading, computer literacy upgrading, lifelong learning services and numeracy upgrading services illustrated in Figure 3.1.

In the client survey, respondents were asked to identify the types of government services they were interested in receiving using ICT. Figure 3.1 illustrates that clients from all organizations were interested in receiving health information and services, as well as skills upgrading.



3.5 HEALTH INFORMATION SERVICES

The health and wellness centre devotes a considerable amount of time to obtaining credible sources of health information. The centre receives reliable health information from the provincial government, which then has to be translated, assessed and discussed by staff members before it can be delivered to clients. As noted in section 4 the centre also spends a significant amount of time looking for other reliable sources of health information that are already translated. The clients at the four community intermediaries place significant value on health information and services, as indicated in Table 3.1. Clients could be encouraged to use these services from an online source, however the health information must be trustworthy, the sites secure and privacy is guaranteed (discussed further in section 4).

3.6 COMMUNITY INTERMEDIARY PARTNERSHIPS

Two types of community intermediary partnership arrangements are evident from the research: a community-centred partnership and government-imposed partnerships. The health and wellness centre is a partnership organization with others in the community. It delivers health services and

information in co-delivery arrangements with five community and public sector partners; these include a hospital, a nursing home, a development corporation, and two local government partners. In addition to formal partnerships, the organization is a central node in a local network of minority language speaking organizations with formal and informal groups, including churches and schools. This network acts as a referral and information-dissemination mechanism for the centre. At specific times, this informal network coalesces into formal partnerships of organizations that work together on specific projects. The centre has also partnered with a university on an electronic health project.

The community centred partnership characteristics of the health and wellness centre includes partnership arrangements arising from a common purpose, a history of working together and an agreement on service and information co-delivery arrangements.

The partnership and service agreements of the job placement organization have evolved in part because the funding environment demands them. Concurrently, cuts in the organization's core funding have forced it to compete with private-sector companies and other non-profit organizations with which they otherwise may have formed partnerships. Partnerships may start "on paper" for the sole purpose of applying for funding. When a proposal is funded, partnerships are activated and the organization puts effort and resources into making them work. Most partnerships do not involve an exchange of funds, but rather they offer mutual support, such as referring clients or providing new kinds of services for clients. A few partnerships have occurred with business to deliver specific training programs and resources to clients. Although these partnerships with the private sector are desirable they are also very time-consuming, and as one staff member described: "...you have to do a lot of work to develop and nurture those relationships." What the organization has learned is that when conflicts occur in partnership arrangements, there has to be a dispute resolution mechanism.

The skills and training organization works in an umbrella group with a number of development associations. The major partnership the organization has is with the provincial government department of human resources and employment, also its major source of funding. The organization works closely with employment counselors and the career specialist in this government department. Staff described this partnership as "excellent," with partners providing resource information and guidance to ensure the organization's programs are successful. The organization also works with community services, the regional school district, local groups and organizations, different town councils, as well as a community college. One challenge the organization has encountered working with local groups is that many are small, without paid staff, which often impedes communication and makes accomplishing tasks difficult.

The community development and employment resources organization works with many other community organizations and surrounding communities to deliver services jointly. These include organizations dedicated to social services, culture, employment, neighbourhood renewal, housing, special needs, Aboriginal issues, small business, immigrants, youth, seniors, education, residents associations, religion and others. After a period of inactivity an alliance has been formed between the intermediary and other community partners, so each service area may be funded by a variety of different partners. But partnerships among neighbourhood associations became difficult after 2001 when the provincial government began to “conquer and divide the neighbourhoods,” according to a staff member.

Government-imposed partnerships, imposed or required as a result of funding arrangements, with the three employment resources organizations often result in unforeseen challenges or unintended outcomes. If the partnerships are “virtual” as a requirement for grant writing purposes, they tend to be only paper-based. Another kind of partnership formed for grant-writing purposes may provide mutual support between organizations, but there is no sharing of resources or funding. These contingent partnerships are time consuming to set up, and are not likely to last. Partnerships with local groups that do not have the intermediaries’ equivalent financial and human resources place additional stress on the organization and contribute to the possibility of a break-up. Private sector partnerships are rare and time consuming to develop. If a private sector partnership is secured, dispute resolution mechanisms need to be put in place to resolve conflicts. The community development and employment resources organization stated that current municipal or provincial government policy changes were adversarial and are likely to divide local organizations rather than encourage them to form partnerships.

3.7 ADMINISTRATIVE ISSUES

The staff members at the health and wellness centre speculated that more services could be provided as long as funding was made available for hiring additional professionals to deliver services such as rehabilitation, physiotherapy, occupational, psychology, and client-intensive social services. This rate of growth in service and information provision indicates that there are still unmet needs in the minority language community that the centre could expand to serve.

Although the general consensus was that the organization currently has adequate staff, several staff members suggested the organization could use a technical support person in the form of a

clinical staff member who is also trained in technology use, such as “a nurse computer whiz or a social worker computer whiz.”

As discussed earlier in this section, the job placement organization’s service delivery challenges are primarily related to its funding situation. The lack of secure sustainable funding has resulted in uncertainty that has affected many aspects of the organization. The organization can no longer maintain its model of service delivery with reduced staffing levels. The Directors are under-resourced in their fundraising activities, and the writing of grant applications requires considerable time resources from the remaining staff. Moreover, the organization has no administrative support staff or receptionist; so many day-to-day tasks also fall to the two Directors. The organization also has no staff for collecting follow-up data on project outcomes, which would be useful information for funders and for applications for future funding.

For the past ten years the organization has continued to provide services over a larger geographic area to people with mental disabilities, homeless people and to people with “concurrent disorders” such as mental health and substance abuse. At the same time that the organization has had to make major structural changes to adjust to a new provincial funding regime and subsequent changes to the grant application process, the client base has been increasing. These institutional changes occurred concurrently as the number of people with mental illnesses has increased along with increases in homelessness and people living at risk.

The most significant challenge to the skills and training organization is its precarious income situation, which limits what the organization can do. The unsustainable funding situation has had a negative impact on its capacity to deliver information and services despite great effort by the staff.

I spend, I guess six days a week and a lot of nights, some weeks I have to go seven days just steady at it in order to be having enough programs up and going in order to be able to I guess keep myself employed. It gets really hard especially with me, I am by myself and I don’t have any assistance at it. It is very limited as to what the Board of Directors can do to help ... Because the majority of these are working people so they can’t come here in the daytime helping out and that. I find it rather difficult at times (Skills and training organization SI-1).

As discussed earlier the organization is in an unsustainable funding situation and, despite great effort, this has had a negative impact on its capacity to deliver information and services. In some

of its offices, the number of staff is adequate to deliver the required services, whereas in other offices, more staff is needed, but there are no resources to hire more people.

Most recently, funding cuts to the community development and employment resources organization required discontinuing a youth program and a computer- training program. The funding situation means insecure work contracts, resulting in stress and anxiety among staff, which then has a further negative impact on the ability to deliver services. The restricted funding also limits the range of services available. For example, assistance with rental housing has been identified as a huge need in the community and while the organization has services for homebuyers and owners, it does not have any additional resources to develop programs for renters. Additional administrative challenges arise from the high number of transient residents in the area, making it challenging for the organization to reach potential clients and to offer longer-term services.

3.8 COMMUNITY ORGANIZATIONS' APPROACHES TO ACCOUNTABILITY

As previously discussed the health and wellness centre is a partnership of five organizations. The five partner organizations are audited and accountable through their respective Boards of Directors. The organization also has a committee that oversees planning and direction, which involves the Directors General of each partner organization.

The centre's non-profit corporation is a community-based partner. The corporation uses a variety of mechanisms to ensure accountability, including quarterly meetings of a Board of Directors, producing two semi-annual reports for the community, and submitting quarterly reports for all funders. The corporation meets stringent auditing requirements and submits the auditing reports to the other partner organizations in the network.

To ensure ongoing organization accountability, the job placement organization has monthly Board of Director's meetings. The Directors present quarterly statements to the Board's finance committee. The organization has a global budget that it balances every year and it has an independent external auditor who produces an annual audited report. The organization's annual general meeting is open to all its corporate members and an annual report is produced and distributed widely.

Funders have their own accountability mechanisms and procedures to which the organization

adheres. Most of its programs have measurable targets and goals to achieve and these are discussed at an operational meeting every two weeks. The funders require accountability through reports of project outcomes. This requires the organization to maintain a database to record outcomes. The technical problems related to the database are discussed in section 4. The time required to produce the reports of outcomes for the funders is onerous and directly related to the funding situation at the organization. As one staff member explained:

Collecting outcomes is very difficult. People are obviously more occupied providing services than counting the number of services that they provided. Then not even having a secretary or somebody to answer the phone makes it rather difficult to do very much of anything. ... We have a good 4 or 5 regular funders, (the administrator) is constantly sending in reports, financial reports to them. So there is no time really allocated there at all (Job placement organization SI-1).

In addition to regular meetings with its funders and staff, the skills and training organization has monthly Board-of-Director's meetings. The organization documents the number of clients accessing its services every month and compiles statistics for program reports for funders. It records service outputs on its computerized case management system. The organization also does follow-ups with the clients it case-manages and conducts ongoing evaluations of its programs with clients to ensure appropriate service delivery.

The community development and employment resources organization's mechanisms for accountability include a Board-of-Directors, an annual report, an external auditor and quarterly program activity reports. It also gathers program statistics, such as tracking participants in the employment program, by following up with the participant and with the employer.

The framework of assessment of intermediary successes in the delivery of government funded programs addresses two dimensions of accountability, primarily economic and administrative. However, the framework does not close the loop on whether programs are meeting policy objectives. Specifically, the qualitative dimension of whether services meet the social and economic needs of clients are not substantively or adequately captured; including skills and training, job placement and employment resources, and so forth, In turn, the value proposition, or the degree of success in terms of individual and community benefits, is not certain so the effectiveness of the policy and program circle cannot be fully determined.

4 INFORMATION AND COMMUNICATION TECHNOLOGY ISSUES FOR COMMUNITY INTERMEDIARIES

4.1 ROLE OF ORGANIZATIONS AS INTERMEDIARIES IN E-GOVERNMENT

The four organizations in this study all play an intermediary role by delivering information and services to their communities, linking various levels of governments with citizens. The organizations also play a role as intermediaries in e-government, using information and communication technologies (ICT), and particularly the Internet, to deliver public information and services to citizens.

The role of each of the four organizations as intermediaries in e-government is specific to the particular social, economic, cultural and geographic contexts of each organization and its client base. Each of the organizations plays an intermediary role in the evolution of e-government, and will continue to do so as new ICT appears and as each organization is challenged with new funding situations and administrative requirements, new programs requiring information and service delivery, new partnership relationships, and new client needs.

The different ways in which the organizations use ICT for e-government are linked to their own particular contexts and the contexts of their clients and communities. The benefits, and particularly the challenges to the organizations using ICT to deliver information and services to their clients, are discussed throughout this section.

Clearly the most significant factor shaping the role of the organizations as intermediaries in e-government is organization funding. Many of the challenges of using ICT discussed in this and the previous section are directly related to the precarious funding situations for the organizations. The health and wellness centre, the only organization studied with adequate and sustainable core funding, is the organization best prepared of the four to deliver e-government and meet the ongoing challenges related to being an e-government intermediary.

The health and wellness centre provides health information and services to minority language clients in a large urban centre. The centre plays a leading role as an intermediary in e-government for health services and information. It is currently adequately supported to deploy

and sustain its information and service delivery using ICT. It has taken a pro-active approach to ensure it is linked to the proper resources and has adequate funding and staff to deliver its services. As part of the provincial government's health system, it has ICT support and maintenance through the government's Techno Centre.

The health and wellness centre incorporates resources for long-term support to use ICT in its regular budget and planning. At least one staff member has an older computer but in general the organization's ICT meets its current needs. To date, resources have been adequate for computers and other ICT for its staff and operations.

However, this situation could change if e-government became a more common delivery channel and the organization's clients needed more support to use ICT to access health information and services. The health and wellness centre approach has been to empower clients, but in cases where the capacity of clients to use ICT is low and it is often easier to intervene, for example, by printing out a web page for a client rather than talking a client through the process of dealing with an automated government information telephone service. As more government services are delivered electronically, it is possible more staff time will be required to assist clients to access these services.

A significant future challenge that is currently in the early stages will be the integration of the computer systems of the five health and wellness centre partner organizations. An inventory of all the technology in the organization will be conducted in the near future. At some point it is possible the organization will require a dedicated computer network technician. There is also the possibility that the future integrated organization may have all its servers and network services located off-site, with staff using workstations linked remotely to the servers. In this case, staff off-site will support the network.

The centre accesses many web sites to locate minority-language materials, which can be developed and delivered in information sessions for staff, as well as to locate minority-language health resources for clients. The centre is linked to the provincial government's health network database so it can receive client referrals from hospitals, physicians and the community health and social services centres.

The centre does face challenges using ICT to deliver information and services, which are discussed later in this section. Overall however, the organization is well prepared and well placed in its intermediary role to deliver health information and services to its clients using ICT. As one staff member said:

I guess the best way of being prepared is being open and also realizing that we do have the resources. So I think we're really on the verge of an opportunity in that area to be able to make those changes now... at the same time, to make sure that that technology doesn't undermine some of the basic principles that are key to what we feel are essential to maintain that community link with the community (Health and wellness centre SI-7).

The job placement organization is located in a large city, and delivers employment information and services to clients with mental health challenges. The organization plays a supporting, rather than a leading role as an intermediary for e-government. It lacks both the staff and the financial resources to champion electronic delivery of employment information and services. Most staff members did not think the organization is very well prepared to deliver e-government services and information. As one staff member said: "Well if this was on a scale of 1 to 5, probably about a 2" (Job placement organization SI-1).

The reasons the organization is not better prepared are primarily due to its unsustainable funding situation, including a lack of capital investment for computer equipment, a shortage of staff with IT skills, and the need for staff IT training. Before the organization invests in computer hardware and software and training, it must upgrade its current electrical power service and put a reliable LAN system in place. These challenges are discussed later in this section.

Another major deterrent to e-government for the job placement organization is that its clients need considerable support to access and use ICT effectively. The organization uses a client-centred service delivery model. Many of its clients are just learning how to use technology and need a lot of guidance. One staff member explained:

Myself I don't see that as a realistic thing. Because I think a huge thing with working with clients is that you need to be with them providing the support and self-esteem, and I don't think a computer screen can do that. For that you would have to have major training. Someone would have to be there to support people while they are using the Internet itself and be there to answer the questions and whatnot (Job placement centre SI-4).

Similar to the job placement organization, the skills and training organization is also struggling with its role as an intermediary in e-government. The organization delivers information and services to clients living in more than 90 small communities in a rural, geographically dispersed area. Most of the organization's staff members believe that it does not have the capacity – whether human, technological or financial – to use ICT to deliver either the services that they already provide, or additional government services. In order to deliver e-government services, the organization would need reliable and affordable access to high-speed Internet service, as well as new computers. It would also need additional trained staff and training for the existing personnel, all of which would necessitate additional financial support. One staff member explained just one of the challenges, related to the organization's low ICT capacity:

Most computers can't handle none of that stuff and a lot of the new government services on the Internet that are coming out there are very technical, very complicated, and the computer needs to be doing stuff at all time. But our computers, aside from X's are not able to do none of that stuff because they are just so old and slow. It is all dial-up too (Skills and training organization SI-3).

The final organization studied for the CIRP was the community development and employment resources organization, which provides information and services to urban residents in the community with one of the lowest incomes per-capita in Canada. The organization's innovative programs and services reflect basic community needs such as housing and food security, green spaces and gardening. The healthy food club and farm volunteers offer economic benefits (food in exchange for labour) as well as social benefits. Of the four organizations studied, it is the most challenged in its role as an intermediary for e-government.

Aside from its considerable human, financial and technical constraints, the organization has a client base with very low levels of access to, and understanding of, ICT. As one of the staff members explained:

We could send them all we want but if we are sending a signal that they don't understand or are not up-to-date with there is no point. There really isn't because I meet with neighbours here in the block who wouldn't have a clue when I was talking about e-mail. What's that? Just common sense, like what is that? Never seen a computer, what is a computer. So that would be

completely out. So I am talking almost half the population wouldn't know what a web site is, they'd think about spiders (Community development and employment resources organization-SI-5).

A program to encourage the organization's clients to use ICT needs to be sustainable. If funding is not present to ensure sustainability, community residents who have invested time and energy in a program will be disappointed and frustrated. The staff members believe that with a sustainable ICT infrastructure, the organization would be able to deliver more services using ICT.

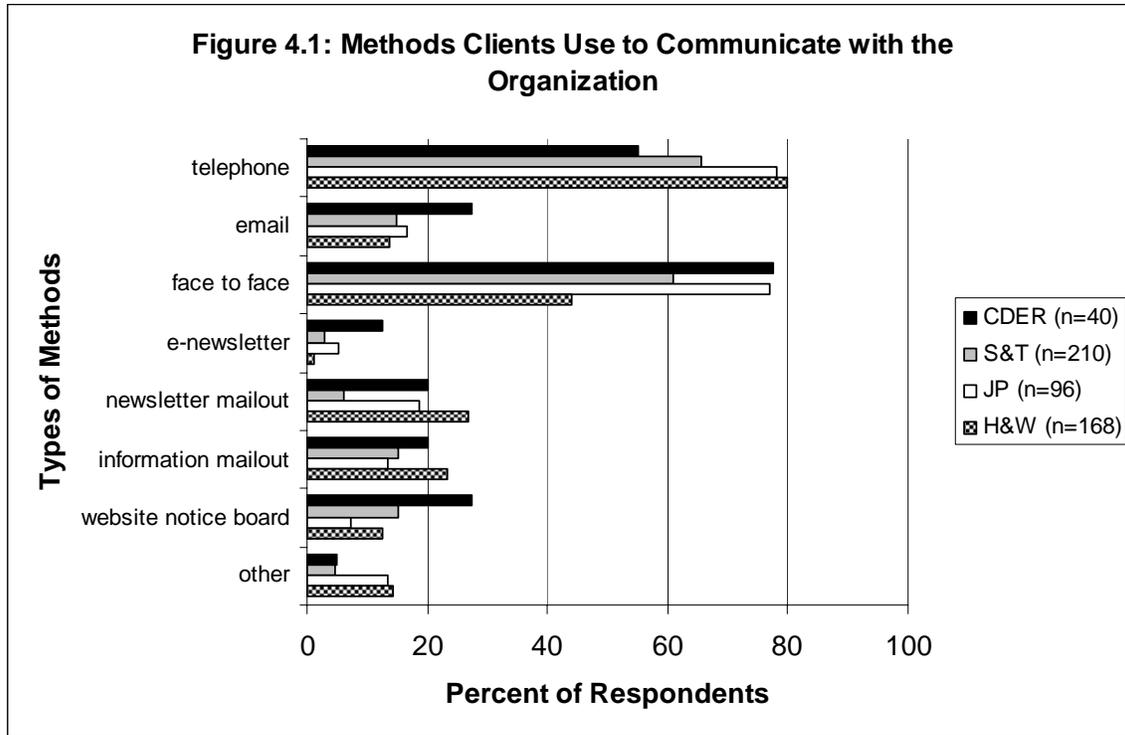
Clients indicated a range of factors that would encourage them to use the Internet more often to access community and government information and services. Some issues were unique to the individual organizations. For example, in Figure 4 we see that the majority of clients in the job placement organization (JP) indicated a need for Internet training, while those at the skills and training organization (S&T) indicated that the speed of service was a deterrent to Internet use. These issues may be specific to the community in which these organizations reside.

4.2 MULTI-CHANNEL SERVICE AND INFORMATION DELIVERY

The surveys found that clients of all four organizations have similar preferences regarding channels for communicating and receiving information from the organizations. Clients prefer to communicate through personal contact, either by telephone or in-person.

In the client survey, respondents were asked to identify which methods they used to communicate with the organization or to find out information about its services. Results in Figure 4.1 indicate that respondents across all four organizations preferred the telephone to communicate, followed by face-to-face communication. It is interesting to note that the community development and employment resource organization respondents, those again who had very low percentages for Internet at home, also had a preference for e-mail and web site notice board as means of communication.

Communication by telephone was the most preferred channel of communication with the organizations by clients of the health and wellness centre, the job placement organization, and the skills and training organization.



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

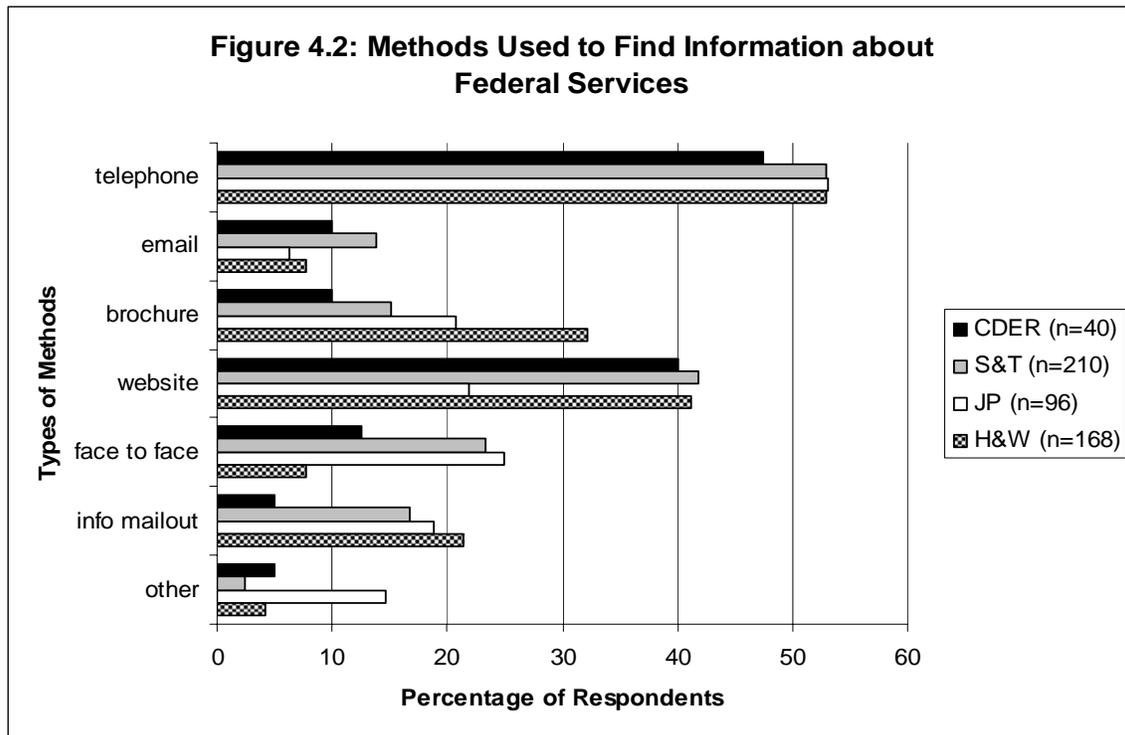
Clients at the health and wellness centre focus group indicated that they want to speak with a real person, not to “press one for this and six for that.” To achieve this end, during regular office hours every effort is made by staff to answer phone calls to the health and wellness centre, rather than use voicemail or telephone menus.

The client surveys placed face-to-face drop-in as the most popular channel for finding information by clients of the community development and employment resources organization, and the second most popular channel of communication for clients with the other three organizations. It was also the preferred method of clients who participated in the focus groups. Clients at the skills and training organization focus group explained that they tend to drop in to the organization to find information about the programs offered and to look for government information. The reason for the preference was the immediate answers to their questions or concerns. Similarly, clients at the job placement organization focus group preferred personal contact with staff. One explained:

Well the reason for face-to-face [is] because it makes you feel more comfortable and you are not hiding behind a telephone with other people listening or whatever (Job placement organization CF).

Many participants at the community development and employment resources organization focus group were adamant that they did not want contact the organization by e-mail because it was not personal and it did not contribute to a “sense of community.”

For clients of all four organizations, e-mail was the least popular method of communicating. Telephone was also the most popular method of finding federal, provincial and municipal government information by clients of all the organizations.

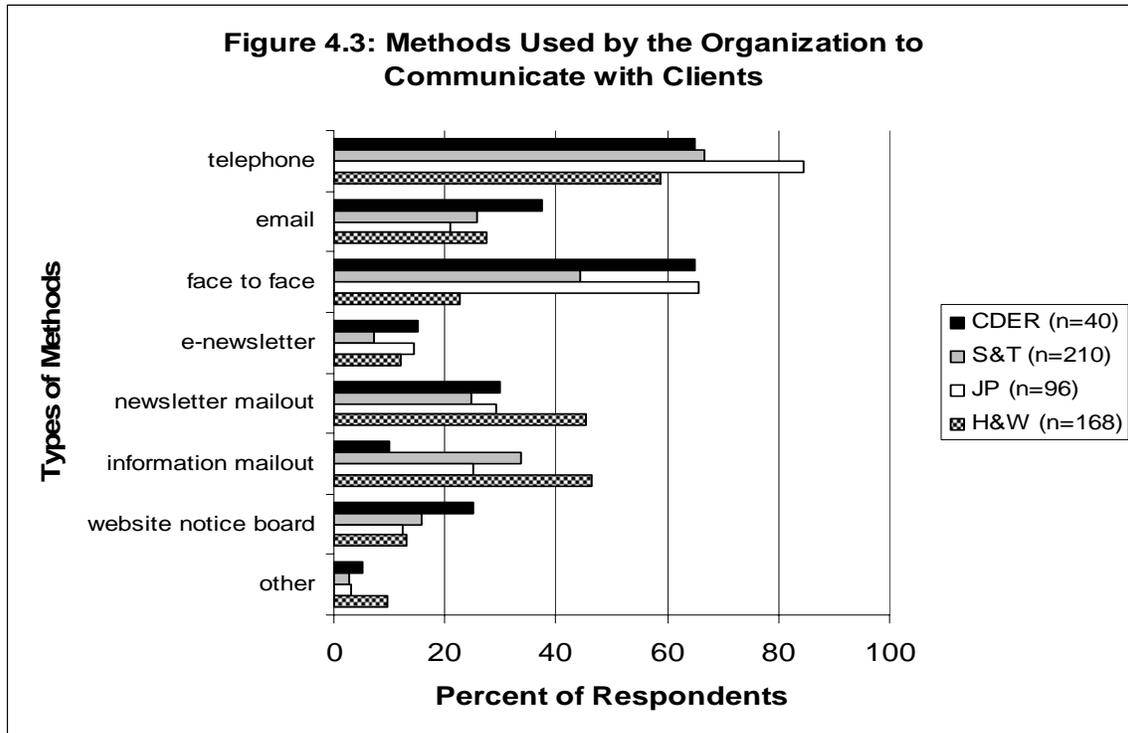


Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

Clients were asked in the survey to indicate the methods they used to find information about federal services, provincial services, municipal services, community services, and other community organizations. Results for each area of service were very similar and this general pattern is well illustrated in Figure 4.2. It is interesting to note that the telephone is the preferred method of finding information about all types of services. As well, the subtle differences should be noted among the organizations themselves. The health and wellness organization clients preferred information mail-out and brochure after the telephone and this may be a result of the client demographics, for example, age. Clients from the community development and employment resource organization preferred face-to-face as well as web site and e-mail to find information about community organizations and services. Clearly, both types of methods

compliment each other. For federal services and provincial services, the web site was second only to telephone.

The four organizations studied use multiple channels of information delivery suited to their particular client base and communities. Each organization has developed its own unique range of approaches through consultation with its communities, trial and error, and a deep understanding of the needs of its clients and potential clients.



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

Respondents were asked to indicate which methods they preferred the organizations use to communicate with them. Figure 4.3 illustrates clients' preferences. We note that clients from all organizations preferred the telephone above all else, while those clients from the community development and employment resource, skills and training, and JP organizations also preferred face-to-face contact secondly. Clients from the health and wellness organizations preferred either a newsletter mail-out or an information mail-out. Although to a somewhat lesser extent, e-mail was also a preference across all organizations.

The health and wellness centre communicates primarily by telephone to its clients. It also uses as many media outlets and communication mechanisms as possible to disseminate health information and to ensure that its service offerings are known in the minority language

community. This strategy was developed through consultations with clients and the minority language community as a whole. As a result of these consultations, preference was given to traditional media and communication including a biannual newsletter, pamphlets, brochures, posters, radio and telephone chain calls.

The centre promotes its services and disseminates health information in the local minority-language weekly paper's "Wellness Page." The local radio station broadcasts messages about the centre. The centre's staff members also conduct radio interviews and submit radio public service announcements to publicize particular activities in advance. Occasionally advertisements are taken out at the local television station. The centre's web site is perceived as a valuable but additional tool to reach the minority language population. To reach teens, young people and new families who move to the region, new pages on the organization's web site have been added, as well as some e-mail lists for specific group activities. The health and wellness centre web site has links to community health centres as well as the provincial health web site, among others. If clients do not have Internet access, the staff will find the information for them:

Well, it's certainly easier if somebody has the Internet to sort of refer them to a certain site and then they can do some of the work themselves. If somebody doesn't have the Internet, then you end up doing a lot of the research for them, and that's not a problem, but sometimes it's easier when you know that they have access to IT (Health and wellness centre SI-8).

The job placement organization delivers information to clients primarily by telephone and in-person. It also has a broad communication strategy aimed at client awareness and establishing a community presence. The strategy includes community presentations, weekly tours, brochures, web site presence and word-of-mouth communication. Brochures and pamphlets provide information about the job placement organization and its programs and services. One staff member is learning sign language to communicate with clients with a hearing disability. Clients with literacy barriers receive additional levels of services, such as verbal explanations and the reading of forms.

The skills and training organization employs multiple channels to communicate with and disseminate information to clients and potential clients living in the more than 90 communities in the region. The organization conducts a significant amount of advertising using pamphlets, brochures, posters, flyers, business cards and community television and radio, as well as postings on the provincial web site. Some communication methods work better than others in

different communities, so the skills and training organization's information and communication strategies are targeted to what works best in each community. Similar to the job placement organization, staff members at the skills and training organization confirmed that many clients find out about the organization and its services through word of mouth.

I think word of mouth probably gives us the best feedback. Clients come in to our office and we have a high percentage of clients who are very satisfied with the service that we provide and when people like the service they usually talk a lot about it (Skills and training organization SI-4).

Under the terms of its current contract with HRSDC, the skills and training organization is also required to conduct thirty-nine group communication sessions. These group sessions bring together the local stakeholders and affiliated organizations for public presentations at the schools, the high schools and the post-secondary institutions such as the community colleges.

The community development and employment resources organization also relies on multiple channels for information delivery, including its community newspaper, brochures, posters, fliers, sidewalk messages written in chalk and word-of-mouth.

As discussed, clients of all four organizations prefer personal communication for information delivery. The clients of all the organizations prefer to receive services through personal interaction.

The job placement organization provides a drop-in space to deliver services and information informally. It also provides venues for social interaction where clients can exchange information and learn about new services informally. Some staff members at the job placement organization have concerns that using ICT to communicate with clients is less beneficial than face-to-face contact, which builds relationships.

I think a huge thing with working with clients is that you need to be with them. A huge thing is providing the support and self-esteem and I don't think a computer screen can do that... (Job placement organization SI-4).

Several staff members at the community development and employment resources organization are also reluctant to use ICT for delivering services to clients, saying it “depersonalizes” the relationship and that community residents need more face-to-face contact.

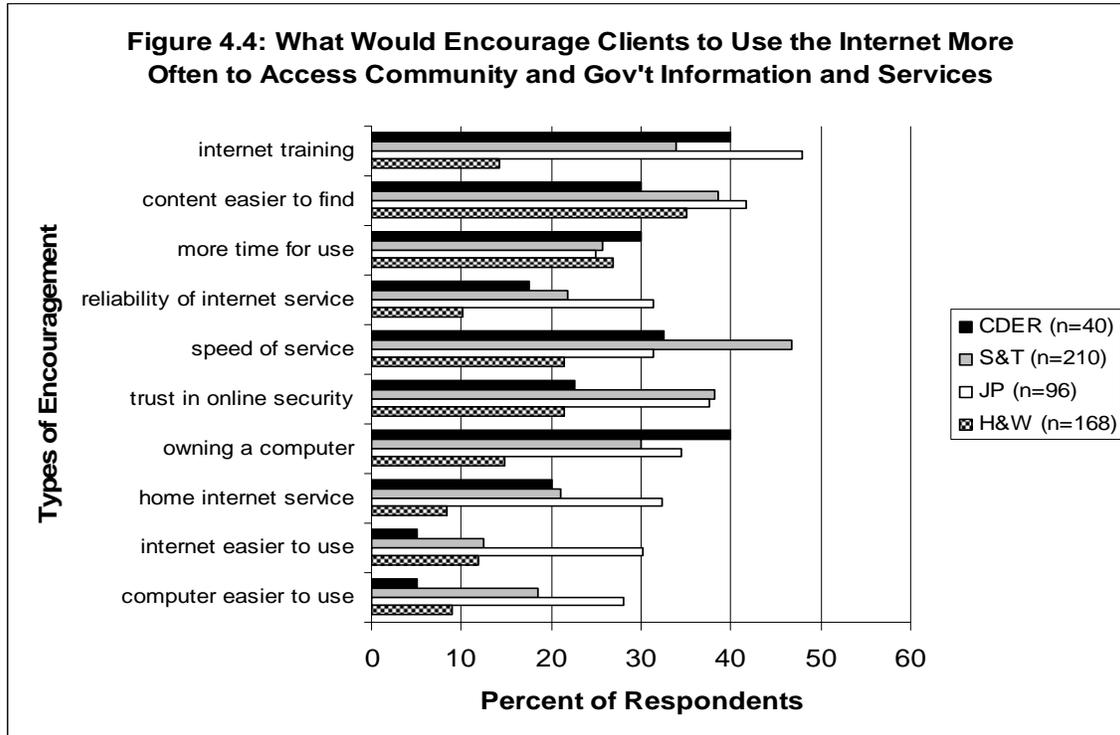
The community development and employment resources organization’s services are delivered in such a way that will build self-reliance by encouraging clients to learn by making decisions and taking responsibility for themselves. The complexity of this process means that many clients require one-on-one support to take the initiative and benefit from services and information. The organization consults with community residents and clients through community forums; this is also a channel for delivering information informally to clients. The organization provides life-long learning opportunities, where information is passed on through practical activities, such as community gardening. Given that a number of Aboriginal clients, particularly the elderly ones, are more comfortable with oral communication, the organization’s runs a specific Aboriginal program that focuses group activities that encourage communication.

Although the organization’s Job Centre and community access program (CAP) site are intended to be drop-in services with access computers and ICT and support as required, the centre’s office space is not conducive to all drop-in situations. Most services and information are delivered out in the community. One staff member explained his service:

Mine is a drop-in thing. If they can’t reach me here, they know that they can either get me by cell or check one of the gardens and I’m likely to be there...I really think that what I have accomplished in my program in the last year is as a consequence of (a) ignoring the computer and (b) being forced into a position of ignoring the computer... because I had such an unreliable piece of hardware, I went out and talked to people because I had a responsibility as their liaison and their contact to make sure that they were getting what they wanted. I have found that works better than anything else (Community development and employment resources organization-SF).

4.3 SERVICE AND INFORMATION DELIVERY USING ICT

Using ICT to deliver information and services is a challenge for all of the organizations studied given that many of their clients with the greatest needs do not use computers and the Internet. The ICT challenges for clients, staff and organizations are discussed later in this section.



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

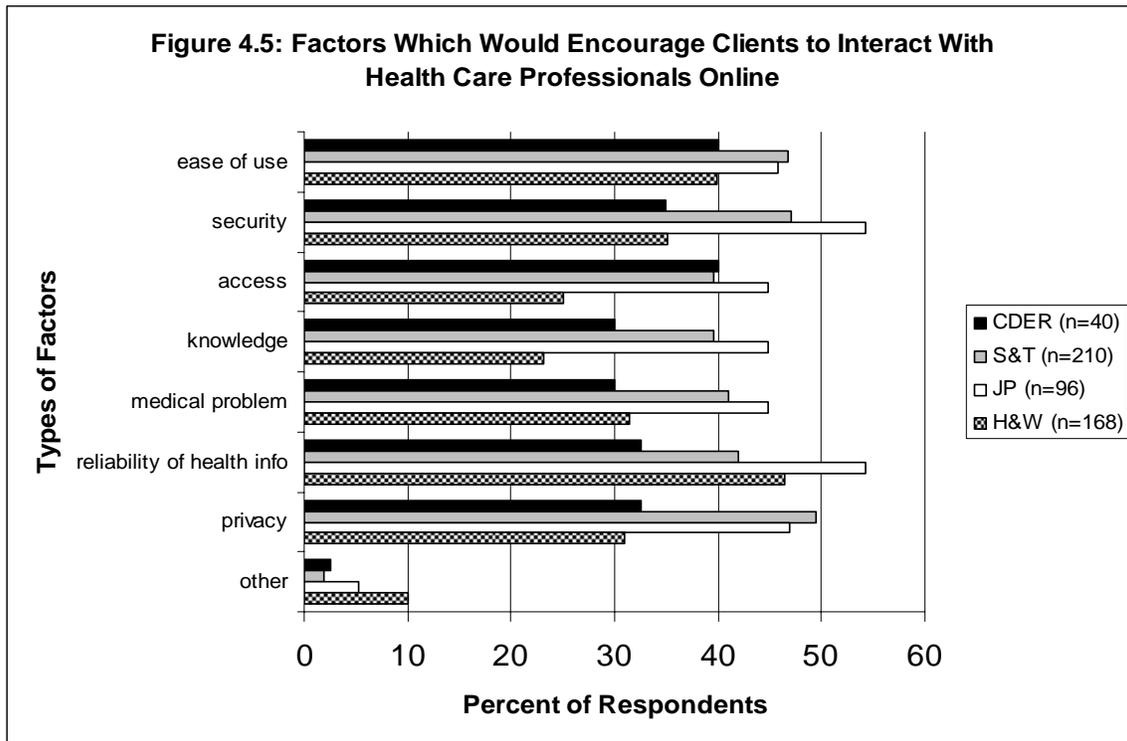
Clients indicated that there was a range of issues that would encourage them to use the Internet more often to access community and government information and services. Some more than others may be unique to the organization itself, for example, in Figure 4.4 we see that the majority of clients in the job placement organization indicated Internet training, while those at the skills and training organization indicated speed of service. These may be issues pertaining to the community in which these organizations reside.

All four organizations have web sites for delivering information. However, only the health and wellness centre and the skills and training organization have made a concerted effort to attract existing and new clients to their web sites. Web site content varies among the organizations; all provide basic information about the organization and some provide information on the local

community. For example, are web site lists all of the programs and schedules and a community calendar page lists different events and notes upcoming events at the centre.

All four organizations faced challenges related to information and service delivery via their own organization web sites.

The health and wellness centre has an in-house web master so its web site maintenance has not been a problem. However a major challenge for its web site development is finding health information in the province in the minority language. The centre must translate the information on the province’s web site; the content is not always accessible to people with hearing or visual impairments or literacy issues. The health and wellness centre staff aim for clear design and writing. As one staff member explained: “Don’t make it pretty, make it useful and accessible to the most number of people” (Health and wellness centre SI-3).



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

Clients indicated that there was a range of factors, which would encourage them to interact with health care professionals on-line, illustrated in Figure 4.5. Other than any one specific factor, a matrix is illustrated. Many issues must be addressed to improve and facilitate use in this direction.

At the job placement organization focus group, clients were asked if they were aware of the organization's web site and what they thought of it. About one third of the clients knew about the site and had used it. A third were aware of the site but had not used it and the remaining third did not know that it existed. Student volunteers set up the web site from a local college but as the staff focus group revealed, keeping it updated has been a problem because of a shortage of human resources.

Our web site it is horribly out of date... There was a staff person at the job placement organization who was, let's call it web-friendly. But this person was laid off due to lack of funding so now there is nobody within the organization's staff that has the time and technical skill to do this (Job placement organization-SF).

The community development and employment resources organization's web site is also severely out of date. One client in the focus group called it "pathetic," saying she would not use it again. A staff member explained that part of the problem is that web site maintenance is not a staff function and nobody in the organization has web site maintenance skills.

With respect to community access to ICT, as a provider of provincial health services the health and wellness centre must ensure the integrity of its IT system so that confidential information about clients is not jeopardized. For this reason, it cannot let clients or other non-staff visitors to use the centre's computers.

The other three organizations – the job placement organization, the skills and training organization, and the community development and employment resources organization – provide computers on their premises for clients to access on-line information and services, with assistance when required.

Until recently, these three organizations also delivered IT training programs to clients, with program-specific funding from HRSDC. The focus of the training programs was to overcome fears and increase the comfort level of clients using computers.

The organizations varied considerably in their use of ICT for day-to-day operations. Staff at all the organizations uses the web to find information on programs and services for clients, and e-mail to communicate with funders and clients. All use computers to record services and program delivery outcomes, as well as write funding proposals and reports.

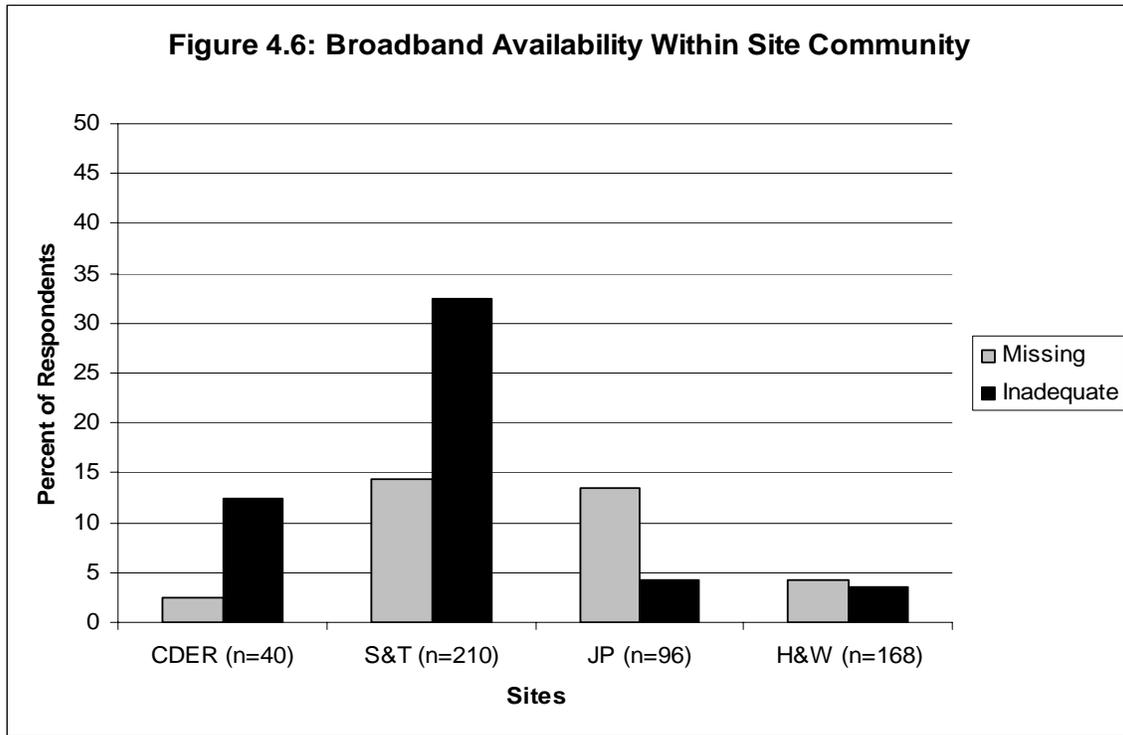
Of the four organizations, the health and wellness centre has the most complex ICT systems for daily operational use as well as service and information delivery. The centre will soon become part of a new electronic provincial medical program requiring all patient and client information be sent and processed electronically. Currently the centre and its partners' organizations do not interface well with each other, and they use different databases. The centre's partner organizations have discrete IT systems that are currently being integrated in an effort to improve the flow of information and communication and ensure that clients do not fall between the cracks.

The skills and training organization also has a more complex use of ICT than the remaining two organizations. It uses client-dedicated computers to train clients to use the Internet to conduct HRSDC job database searches. It also has a web-based computer system called Accountable Resource Management System (ARMS) to manage client cases. Client statistics are entered into ARMS, which tabulates client case results. The system generates weekly, monthly and yearly statistical reports for program tracking and accountability. The ARMS system works well and is liked by staff.

The job placement organization, the skills and training organization and the health and wellness centre use e-mail to network, both with other community-based organizations and with umbrella groups or coalitions of groups representing common interests.

Of the four organizations, only the skills and training organization has a high use of e-mail for internal communications among staff. Two of the satellite offices of this organization have access to high-speed Internet service and can now communicate via videoconference. E-mail is useful not only for the dispersed satellite offices but also for the contract workers both for communication and collaboration. For example most of the documents staff works on are e-mailed back and forth.

Lack of high-speed Internet infrastructure had an impact on information and service delivery for two organizations. In the survey, clients were asked to indicate which infrastructures were missing or inadequate in their community. One of these infrastructures was broadband. Figure 4.6 shows client responses to this portion of the question.



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

The high-speed infrastructure is uneven over the catchment area of the skills and training organization. In some locations, there is adequate high-speed and cell phone coverage while in other locations; neither is locally available, so one of the organizations satellite offices does not have access to broadband. Dial-up Internet is adequate in some areas and slow in others. Dial-up in general is a constraint to delivering services and information because it ties up a telephone line, and as one staff member described, using the Internet to do research meant that she could not receive phone calls. Once on-line, the out-dated computers, combined with the existing dial-up Internet service, are slow and often crash. One of the offices has satellite Internet service but it is very slow:

I tried to download government files before; I had to step away from the computer for an hour to let them download. That's ... an hour of your work-day (Skills and training organization - SF).

Clients in some of the communities served by the skills and training organization experience considerable difficulty accessing services on-line because of the lack of access to high-speed

Internet infrastructure. A staff member described the difficulty for clients attempting to complete on-line applications for Employment Insurance (EI) in an area without high-speed Internet:

Right now there is no such thing as completing an application form to apply for EI anymore, everything has to be done on-line and with the service out in [one of the satellite offices], clients have gone in there and they have been trying to complete their application forms and there have been some of them who have been booted off the Internet probably a half dozen times before they could get the process completed. ... There have been some [that] ... just couldn't do it all and they just had to give up and walk out. So it is causing a big problem in that area (Skills and training organization SI-1).

The health and wellness centre staff experience occasional slow network times, as is normal in many organizations. Some staff members have a higher-speed connection than others. However, generally the organization itself does not have ICT infrastructure problems. It is using high-speed and recently upgraded its connection to improve the network speed. The integrated IT system uses Lotus Notes to share information between the partner organizations, and infrastructure problems are not anticipated. Although the health and wellness centre provides services locally, theoretically clients across the province can access its web site. High-speed Internet is not available in rural and remote areas of the province and consequently individuals and organizations living in these areas can neither receive electronic files nor download documents easily or at all. The health and wellness centre participated in a pilot video-conferencing health network program, but experienced problems when clients in some rural areas were unable to participate effectively because they lacked the high-speed infrastructure in their region.

4.4 ICT BENEFITS AND BARRIERS TO CLIENTS

Client benefits

All of the organizations identified similar benefits in using ICT for information and service delivery.

The main benefit of ICT for clients is the ease with which they can find information and resources. Clients use ICT to access the organizations' web pages, government information web pages, and

government services and other pages and databases on the web. Often clients bypassed the organizations' staff to find information themselves.

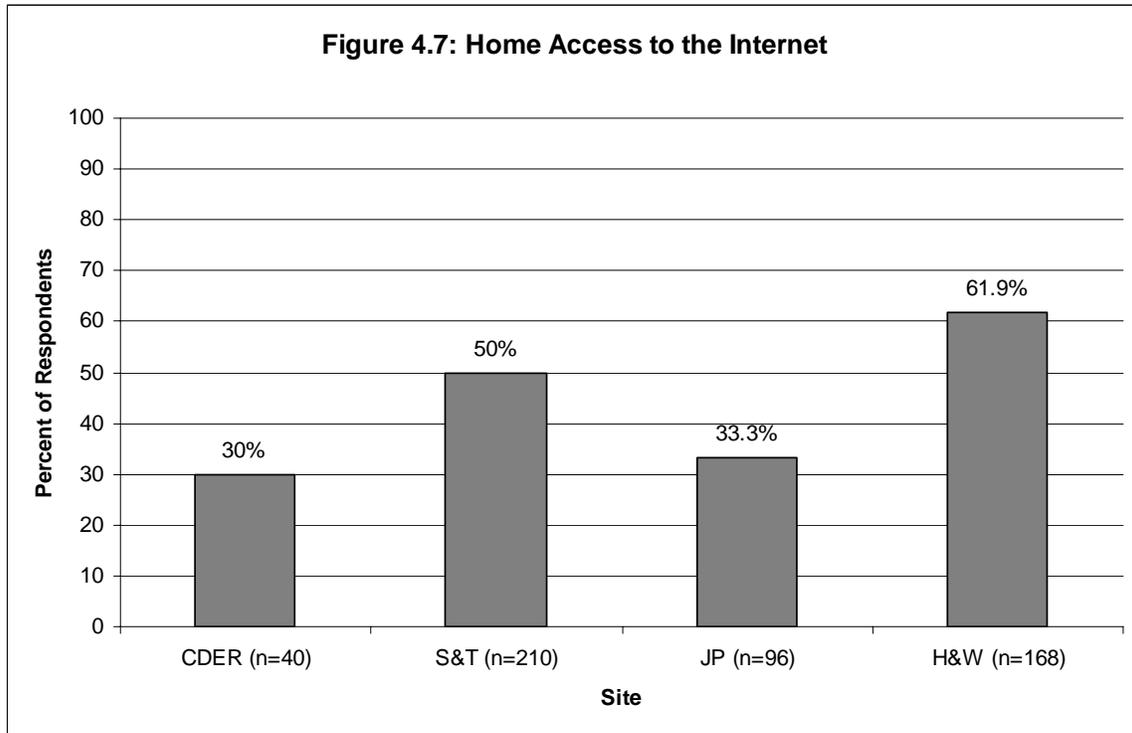
It is very easy to get information. Before you had to go to the library and take a month to look at ten or a hundred books to find something. Now with a Google search you can get something in fifteen minutes. (Job placement organization – CF)

Clients using the Internet to access information are at the same time increasing their computer skills. Most places of employment now require computer knowledge, and computer skills are beneficial for clients' job development, employment marketability and self-esteem.

Using computers and the Internet can increase clients' social capital. Clients with e-mail access can use it to maintain connections with friends and families. When using client computers at the job placement organization, the skills and training organization, and the community development and employment resources organization, clients are able to socialize with other clients who are on site and build their social networks.

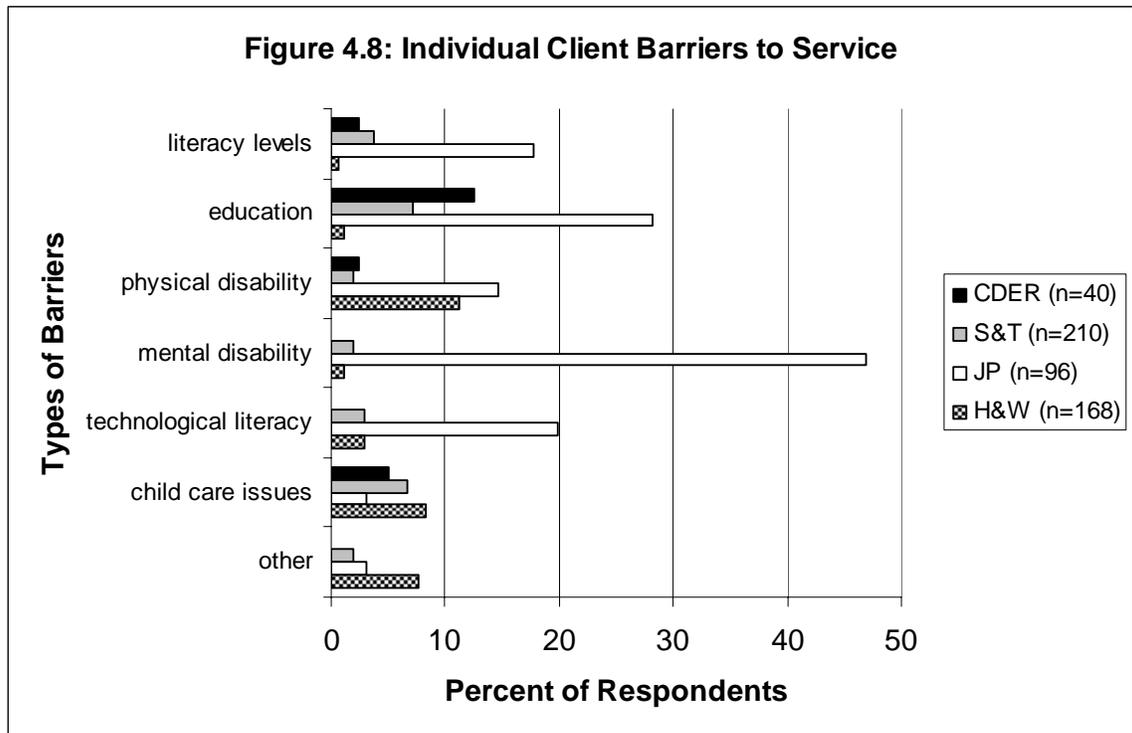
Low levels of access to ICT were a considerable barrier to using ICT for information and service delivery for all of the organizations. Those clients without Internet access cannot access information and services on-line. Clients had varying levels of home Internet access. The high cost of computers and the Internet was the primary reason clients gave for not having either at home. In some cases, clients with a bad credit rating or no credit rating at all were unable to buy ICT.

Figure 4.7 depicts the percentage of those respondents who use their home computer to connect to the Internet. When we interpret these results we realize that there are a number of interrelated issues around access and technologies. Although only 30 per cent of respondents from the community development and employment resource organization have home Internet access, this site actually prefers Internet methods of corresponding and information seeking/receiving. It is important to note here that many of the respondents are using Internet resources at the organizations.



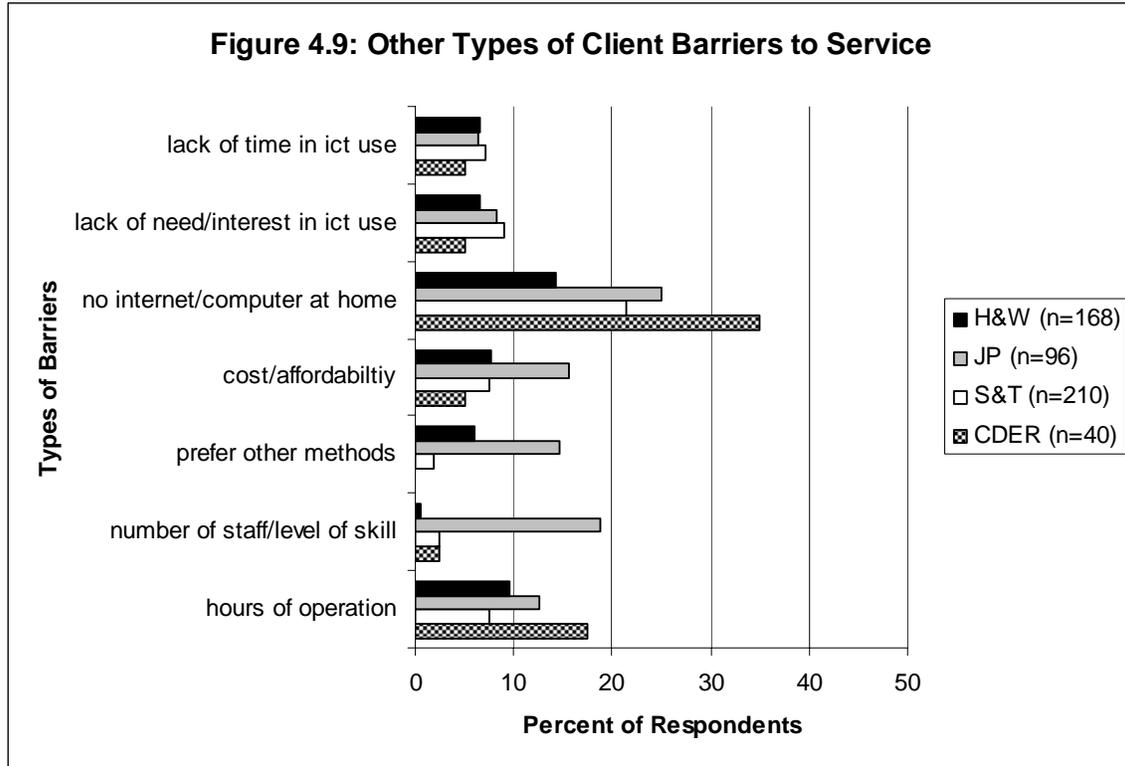
Community Development and Employment Resources (CDER), Skills and Training (S&T),
Job Placement (JP), Health and Wellness (H&W)

Client barriers



Community Development and Employment Resources (CDER), Skills and Training (S&T),
Job Placement (JP), Health and Wellness (H&W)

Clients of all four organizations face a myriad of barriers, or challenges, that make it difficult for them to access or use the services and information provided by the respective organizations. Two of the most common individual barriers among all clients are low education and literacy levels as indicated in Figure 4.8.



Community Development and Employment Resources (CDER), Skills and Training (S&T), Job Placement (JP), Health and Wellness (H&W)

Barriers also include no Internet or computer at home, cost and affordability, as well as hours of operation for computer access indicated in Figure 4.9. Figures 4.8 and 4.9 reveal additional challenges and barriers specific to the clientele of each organization.

The health and wellness centre clients had the highest level of home ICT access, with 70.6 per cent having a computer and 61.9 per cent having Internet access at home. The skills and training organization clients had the next highest level of home ICT access, with 63.8 per cent having a computer and 50 per cent having Internet access at home. Of the job placement organization clients, 54.3 per cent have a computer at home, and 33.3 per cent have Internet access at home.

Of the employment resources and community development organization clients, 38.5 per cent have a computer at home, and 30.0 per cent have Internet access at home.

Clients without home computer and Internet access can - in theory - use public access sites. However the free computer access points in the communities studied are heavily used, sometimes making it difficult for clients to access the Internet at all. In the employment resources and community development organization community, there is no public Internet access set up for the visually impaired. Staff at the job placement organization explained that public Internet access points are not often appropriate for their clients who have mental health issues.

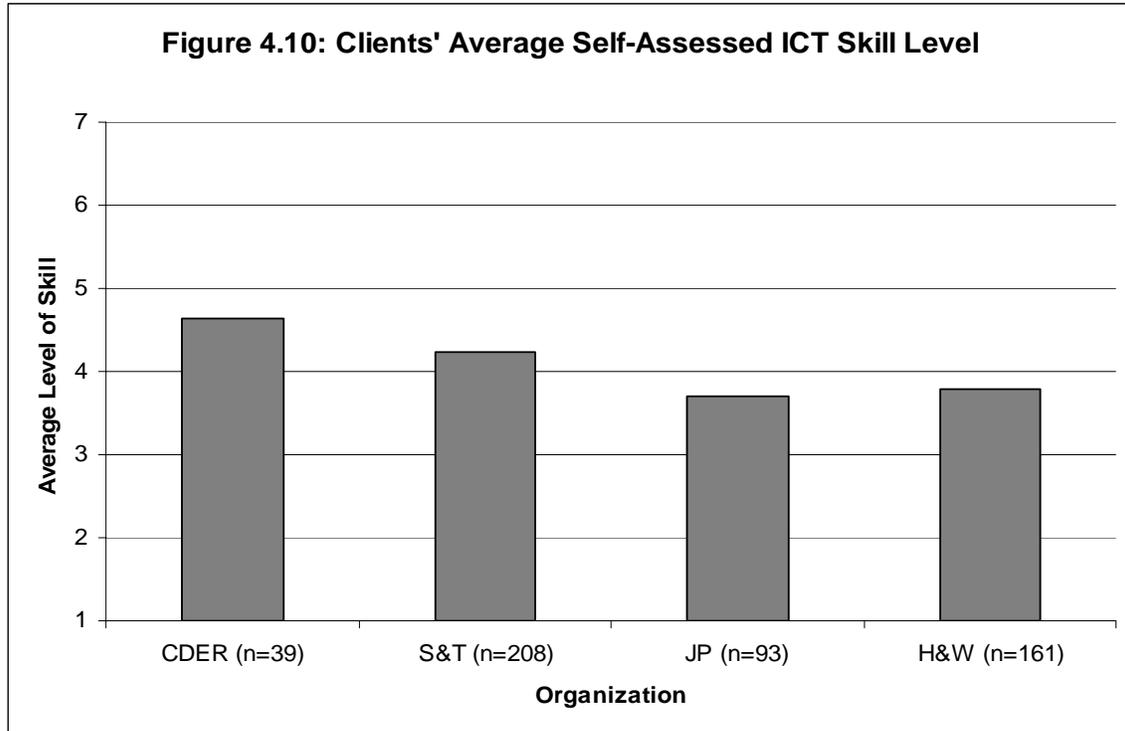
Clients may not be able to access computers in libraries because libraries do not provide appropriate support. For minority-language clients of the health and wellness centre, although Internet access is available at local libraries, these computers have keyboards and operating systems in the language of the majority, and the library staff may not be willing or able to assist them in the minority language.

Three of the organizations – the job placement organization, the skills and training organization, and the community development and employment resources organization – provide clients with access to dedicated computers and the Internet to conduct job searches and access information for skills upgrading and training. However these organizations do not have sufficient capacity for ongoing maintenance of these computers, as will be discussed later in this section. At times, there are not enough computers available in these organizations to meet client demand, resulting in long waiting times and frustration for clients. Clients of the community development and employment resources organization line up at 10 a.m. to use the computers and Internet. The skills and training organization has plans to start requiring clients to book appointments to use a computer and to access the Internet.

Many clients have cell phones but these are expensive and sometimes clients cannot afford to use them. The clients of the job placement organization move house frequently and many do not have telephone answering machines, making it difficult for staff to use telephones to reach clients. The organization's staff members explained that:

Probably the biggest barrier is that most clients don't have a phone and those that do have a phone can't afford to have an answering machine. So it is a big fat waste of time having to phone back fifty times to get a hold of a client (Job placement organization SI-1).

Clients' low capacity for using ICT is another significant challenge to service delivery using ICT. Some clients were very proficient with computers but many were not and would need training in order to access and use ICT more effectively. Literacy levels vary among clients, so providing written instructions for using computers would not be adequate. Many clients do not use computers, do not want to use computers, or are not familiar with computers.



Community Development and Employment Resources (CDER), Skills and Training (S&T),
Job Placement (JP), Health and Wellness (H&W)

Clients assessed their own level of ICT skill using a Likert-like scale of 1 to 7. One indicated the least amount of ICT skill, while 7 indicated the highest level of ICT skill. Figure 4.10 illustrates the average for each organization's clients. We note that the community development and employment resource organization and the skills and training organizations' clients rate themselves somewhat higher in skill.

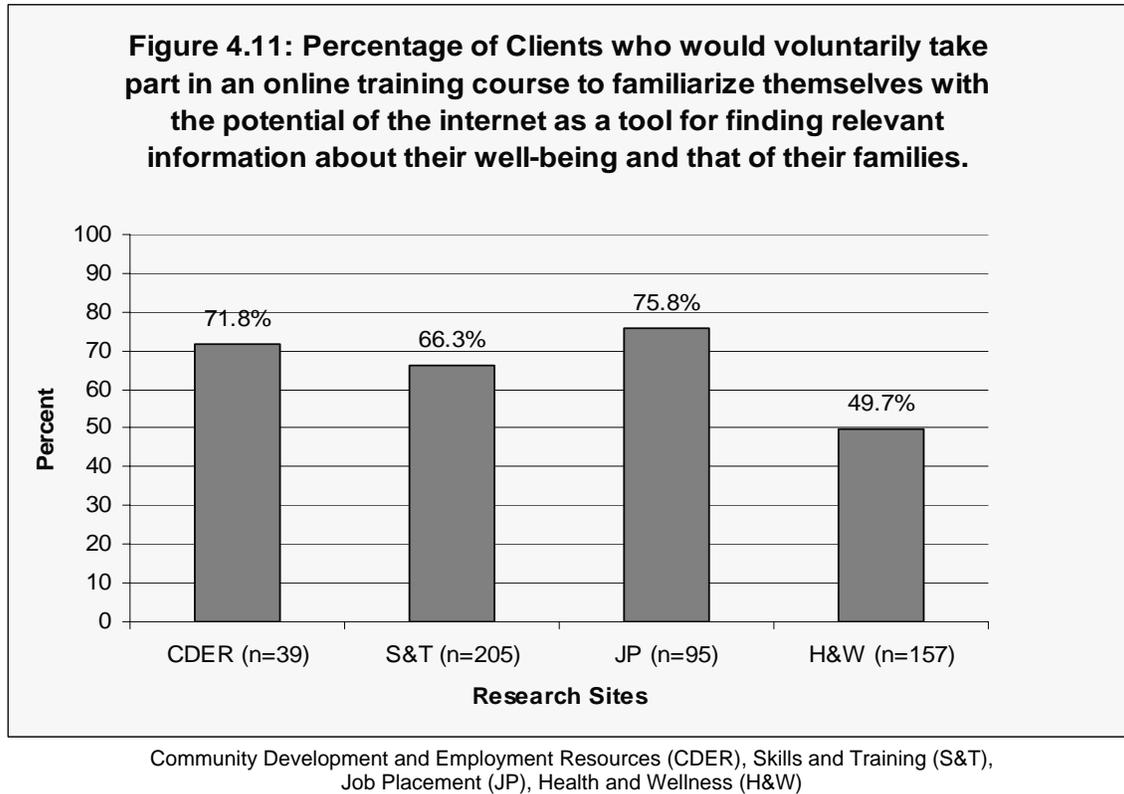


Figure 4.11 shows the percentage of clients who would voluntarily take part in an on-line training course to become familiar with the potential of the Internet as a tool for finding relevant information on their well being and that of their families. The job placement organization clients, who also rated themselves in the lower skill category, were very interested in taking part in an online course. We should also look at these results in conjunction with barriers to service that clients face.

Clients of the health and wellness centre – the only organization studied that did not provide clients with dedicated computer and Internet access - expressed interest in accessing the Internet at the health and wellness centre itself, where staff would be available for informal coaching on computer and Internet use.

Staff at the health and wellness centre expressed concern for the large senior clientele, many aged 75 years and older, who were intimidated by many information technologies. For example some clients had trouble with telephone messaging. A few clients were terrified of computers and cell phones.

Many clients of the job placement organization do not know how to type so cannot use a keyboard. Many need considerable support to learn how to use computers. Although the job placement organization has neither the funds nor the staff for client computer training, staff

members try to make the time to provide ICT support for clients. For clients with cognitive difficulties, learning computer skills requires a systematic approach, which takes time. Staff members pointed out that some clients are very afraid of computers and do not want to conduct an on-line job search. When this occurs, staff members try to introduce the client to the technology slowly on a step-by-step basis.

Most clients of the skills and training organization who took part in the focus panel preferred to learn how to use ICT by having experienced staff or counsellors show them how. One participant explained, “hands-on is a lot easier to learn than reading a pamphlet or a book about new technology” (Skills and training organization-CF).

Clients in the skills and training organization focus group expressed frustration with not having ICT support when problems arise, including difficulties with outdated web sites and dealing with pornographic web sites. One staff member explained that some clients are very fearful of technologies such as fax machines and cellular phones. Many who live in rural and remote communities are apprehensive about using on-line services to complete an application. In addition, a number of the older people in these communities are very resistant to technological changes and uncomfortable doing on-line job searches.

Another barrier identified is clients’ need for reliability and confidentiality of data. Clients responding in the surveys expressed concern with security and reliability of health information on-line. A related challenge is ensuring that the technology does not interfere with the confidentiality of the client-patient relationship:

A simple example could be the senior who all of a sudden sees the home care nurse coming in with their laptop, doing client notes on the computer. For a senior who is not very comfortable with technology and who just hears these stories, all of a sudden that can become very intimidating. So you have to be very careful that ... you’re sensitive to the clients and the people you’re serving (Health and wellness centre SI-8).

This discomfort is not limited to computers. Another example of this is asking clients to leave a voice mail in situations where the client wants to speak to someone personally and does not feel comfortable leaving a message on a machine.

4.5 STAFF AND ORGANIZATION BENEFITS OF AND BARRIERS TO USING ICT FOR SERVICE AND INFORMATION DELIVERY

Staff and organization benefits

Three of the four organizations were able to identify benefits to ICT use for information and service delivery. However, none of the organizations was using ICT to its full potential.

The primary benefit of ICT for the health and wellness centre is easy access to the provincial government's health network and database. Staff at the centre regularly uses ICT - including the telephone, voicemail, e-mail and the Internet - for research, networking and to facilitate daily communications. The centre has experienced benefits from innovative use of technologies. Its use of on-line interactive learning modules, such as defibrillator programs used as teaching units for staff, has been effective. The health and wellness centre's participation in a pilot video-conferencing health network program has also had promising outcomes.

The job placement organization has found that e-mail and cell phones are effective ways for staff to liaise with other community workers and referring agencies. A local community economic development list-serve keeps staff plugged-in to local resources and information. Networking by e-mail has helped the organization develop more extensive links with various levels of government.

One of the major benefits of the Internet to the skills and training organization is getting information to clients more quickly. Given its rural location and its remote satellite offices, Internet access is essential for providing services and information to clients as well as for inter-staff communication. The organization does almost everything on-line, from accessing funding and developing proposals, to obtaining job applications.

Staff members at the community development and employment resources organization were divided over the benefits and problems of ICT use. Staff did not identify any specific benefits of ICT to the organization and staff. They saw potential benefits, but cited a lack the resources to realize them – for example the organization has considerable accumulated client data it cannot analyze because it does not have the software or staff trained in using the software.

Staff and organization barriers

All four organizations experienced barriers – and three experienced considerable barriers - with their ICT software, hardware and internal networks.

The health and wellness centre internal e-mail system is virtually unusable. Some staff members do not have computer access. Not all of the staff use the same e-mail system, with some on the proprietary provincial government health and social services system, and others using web-mail. Any suggestion of greater technical capacity is consistently met with a caution that human resources budgets cannot suffer in order to expand technological services.

The job placement organization has significant ICT hardware, software and network barriers and lacks capital funds for computer equipment and necessary infrastructure upgrades. Before it can upgrade its ICT systems, it needs to upgrade its electrical power supply, which is prohibitively expensive. Not all staff members have computer and Internet access at work, making it impossible to communicate internally by e-mail. There is no central server, and the client database is long overdue for an upgrade and so crashes consistently. The job placement organization has acquired computers through donations or private foundation grants and it has many older computers incapable of running newer versions of even basic software. After attempts to upgrade the phone system, staff concluded it needs a complete overhaul, which the organization cannot currently afford.

I would say that our phone system is really terrible ... in terms of people calling in... So that poses a problem because it is very difficult for employers and clients to contact us. Sometimes especially employers, it makes a really bad impression if they can't get a hold of us. That would be the main problem that we are facing right now I think (Job placement organization SI-5).

The skills and training organization staff members were unanimous that the organization does not have adequate ICT hardware and software capacity to deliver client services and information. Some of the fax machines in the satellite offices do not work properly. Not enough computers are available for client job bank searches and resume writing. Client demand has resulted in long waiting times. Staff spoke of not having computers at all or not having enough computers. In one location, the seven staff members share one computer. Because of funding constraints, the organization purchases the least expensive computers. Other problems were described as outdated computers, cheap computers, computer crashes, inadequate technical support, no high-

speed access, dial-up access tying up the phone line, and in some locations, dial-up access being very slow.

The most obvious ICT-related challenge facing the community development and employment resources organization is inadequate ICT hardware, software and internal networking. The organization is planning to upgrade its computer network to allow staff to share files electronically, share the printer, and send internal e-mail, but lacks the funding. Its telephone system is inadequate to the extent that it is often difficult, sometimes impossible, to reach staff by phone. The computer network was not operational at the time of the fieldwork and there was only one printer, accessible by a single computer. There is no internal e-mail system and not all staff members have an e-mail address. The organization lacks software for anything other than basic operations. Staff members often compile reports on their home computers. Its e-mail system is not reliable to the extent that some staff members have stopped using e-mail for contacting clients. Another explained that his computer was not reliable after having been permeated with a virus.

It has been better in the last couple of weeks but I don't rely on it, I can't rely on it. It's like having a shovel where the handle keeps twisting off. You use it because you have to but you don't want to undertake anything really big with it because if it fails on you you've got nothing (Community development and employment resources organization-SI-2).

Except for the health and wellness centre, the organizations experienced considerable ICT system maintenance and development barriers. The health and wellness centre has access to ongoing ICT maintenance and support from its government partners. Keeping up with the ICT systems imposed by government is a challenge for the organization. When systems are abandoned because they either do not function or are incompatible, the repeated investment of time and effort for staff training and learning is also lost. One staff member said that: "They're coming in with new systems and new adaptations every number of years" (Health and wellness centre SI-7).

ICT problems cause considerable stress at the job placement organization. Computer crashes are common. Some days the computers do not work and nobody knows why. It has tried using volunteers from the private sector for computer support, but that solution was unreliable and slow. Without computer support staff, a receptionist or administrative support staff, all ICT issues are dealt with by the co-directors or program staff. It cannot find sustainable funding for computer support, ongoing maintenance, and hardware and software upgrades.

At the skills and training organization, there is inadequate IT technical support for computer and network troubleshooting and maintenance. One staff member described how “we just kind of go on a wing and a prayer.” (Skills and training organization SI-7)

The Community Access Program (CAP) site at the community development and employment resources organization does not have a computer maintenance budget, challenging the organization to find funds elsewhere for repairs. The computers, many of which were donated when already old, are incapable of running current versions of software, so computer crashes are common. Organization ICT problems cause considerable stress – there is no receptionist, administrative staff or computer support staff, so all ICT problems must be dealt with by management and program staff.

Two of the organizations expressed privacy and security concerns related to delivery of information and services using ICT.

Staff members at the health and wellness centre expressed reservations about privacy and security issues, specifically, divulging personal information on the web. Although staff articulated these concerns as frightening, it did not deter staff from using the Internet or accessing the web. The issue of confidentiality and security of information exchanged over the Internet is a major challenge. ICT makes information more readily available than it is with paper-based systems, leading to situations where client information is potentially available to more people than before. Clients need to feel secure that confidentiality will be preserved.

Staff members at the job placement organization have concerns about ensuring confidentiality of digitalized client files; the organization does not have the ICT expertise to ensure that these files will remain secure.

Staff members at the community development and employment resources organization identified other barriers. Blocking pornography sites is a problem for the public access computers at its Job Centre facility. Currently, if the centre blocks the porn sites, a number of health sites are also blocked. The physical constraints of space limit the organization in its attempts to deliver services using ICT. For example, it has a video camera that staff would like to use for doing mock interviews for job seekers, but currently there is no space to set up the equipment to conduct them.

4.6 STAFF ICT CAPACITY AND TRAINING

The ICT capacities of the staff members varied among the organizations. Of the four organizations studied, the health and wellness centre has the highest staff ICT capacity. Most staff members consider themselves to be technologically proficient. The organization benefits from an in-house information officer-web master on whom the other staff rely for help when needed. Other than the web master, employees at the centre are self-taught on computers and are, for the most part, satisfied with their levels of proficiency. As part of the provincial government services network, the health and wellness centre can access ICT technical support.

The health and wellness centre has no formal policy for staff or volunteers for ICT training, but does think strategically about ICT. It has identified that the upcoming integration of its IT systems with that of its program partners will require staff ICT training to ensure that the new systems are adequately and properly used. An ongoing challenge related to staff ICT training is the lack of funds to replace a staff member in training, with the result that staff members are expected to undertake training while also doing their jobs:

You cannot have training while you're doing something else. So the person has to be replaced and that ... incurs costs. They expect you to do the job, and then you know... you learn at the same time. As the phone rings five times and then, you know, you answer a whole bunch of other things, so that is not a good way to learn (Health and wellness centre SI-4).

Many job placement organization staff members do not have adequate ICT skills and need more ICT training. Despite the fact that most staff has had some software training, there are no in-house troubleshooting skills to deal with common computer glitches, adding to the general stress levels and time pressures. The computers crash regularly, and nobody at the organization knows how to fix them. Many staff members indicated that, funds permitting, they would be interested in receiving more ICT training such as conference calling or PowerPoint presentations. No staff member has the skills to maintain the job placement organization web site.

Similar to the health and wellness centre, the job placement organization is not able to send staff for ICT training because it cannot afford to replace them during the training. The organization has few funds available for training staff and there is no ICT training policy.

Most of the staff members who recently joined the skills and training organization came with an ICT skill set in a number of software programs along with Internet and web training. However ICT maintenance is a challenge - the organization needs in-house computer support personnel to provide continuous information technology services, including maintenance.

The skills and training organization also has no specific ICT training policy in place. Information technology training sessions do occur for the Employment Assistance Services (EAS) offices administrative staff. These one or two-day courses conducted at the community college include training in Microsoft Office and Corel applications. Advanced workshops for Microsoft applications have also occurred, but as one staff member explained, only a few sessions have taken place because of the lack of funding.

The staff ICT capacity at the community development and employment resources organization is variable. Some staff members are proficient in ICT. Others have never received computer training, or have basic computer skills and believe it is faster to write a letter by hand. Some do not like using computers or dealing with technology such as automated phone systems. One staff member described the training situation:

There has really been no training. I am sure everybody is using Word differently from one another. We're not kind of learning from each other and improving the effectiveness, the efficiency (in the) way we use those tools. Others, like Excel or the use of the Internet, everybody is just doing their own thing so there has never been any kind of sitting down, exchange of ideas, any training courses and so on... (Community development and employment resources organization-SI-7).

The community development and employment resources organization has neither funds for staff training nor an ICT training policy in place. Any ICT training that staff had was gained elsewhere, such as high school, university or other organizations, before starting work there.

5 INFORMATION SEEKING AND DECISION MAKING

5.1 INTRODUCTION

One goal of the CIRP was to understand how staff in the community organizations viewed information, and the creative solutions to problems of accessing information critical to the community organizations and the clients they serve. It was important, specifically, to understand the staff *information environment*, which is defined by the types and sources of information that staff members use in their jobs, how they access those sources, and what unique problems exist for them in accessing information.

A research methodology called “Information Environment Mapping” (IEM) was developed. Anecdotal evidence suggested that people often find creative solutions to everyday problems that may not be obvious to those outside of their organizations or lines of work. Examples included the use of cell phones or web-mail for communication to compensate for the lack of a stable residential address.

The IEM methodology creates a problem solving setting in which respondents are encouraged to reveal unique perspectives on their information needs and any creative responses they employ to deal with challenges they face in getting at and using information. This methodology was adapted from a human-computer interface evaluation technique called *cognitive walkthroughs*.

5.2 RELATED WORK

Wharton et al. (1992 and 1994) proposed the Cognitive Walkthrough (CW) methodology as a low cost usability evaluation method for human-computer interfaces (HCI). The IEM methodology does not focus on HCI. It is adapted from the CW to observe personal perspectives on information using a problem solving approach.

The IEM methodology is also related to user requirement gathering activities within systems analysis methodologies. The prime example of such methodologies is the *unified process* (see Ambler, 2005). Unlike requirements gathering, however, no assumptions are made about desired functionality in using the IEM approach. It is the current view of an information environment that is of interest. This may include the current views of respondents with regard to changes they would like to see in their environment, but the methodology itself poses no assumptions in this context.

5.3 MODEL

The IEM methodology was designed to capture views of existing information environments, where the views are not determined solely by technology. Problem solving in the CW style was used to encourage a thorough discussion of one's environment. Staff members were encouraged to reveal both the non-technical and technical natures of their environments.

A staff person given a task will perform a process of information seeking and decision-making. This process is depicted in *Figure 5.1* as the following steps:

1. determine the types of information needed to perform the task;
2. consider the potential sources of this information;
3. identify the corresponding means of access or transmission of the information source identified in step (2);
4. choose sources of information based on influences and constraints faced within the organizational and social environments;
5. access, process or transmit information from sources identified in step (4);
6. reach a resolution point for the task using information obtained in step (5).

This process is not necessarily linear. Steps in the process may be revisited as necessary. Each individual in our model is said to have a unique *information environment map* described by the distinguishing characteristics of this process for that person.

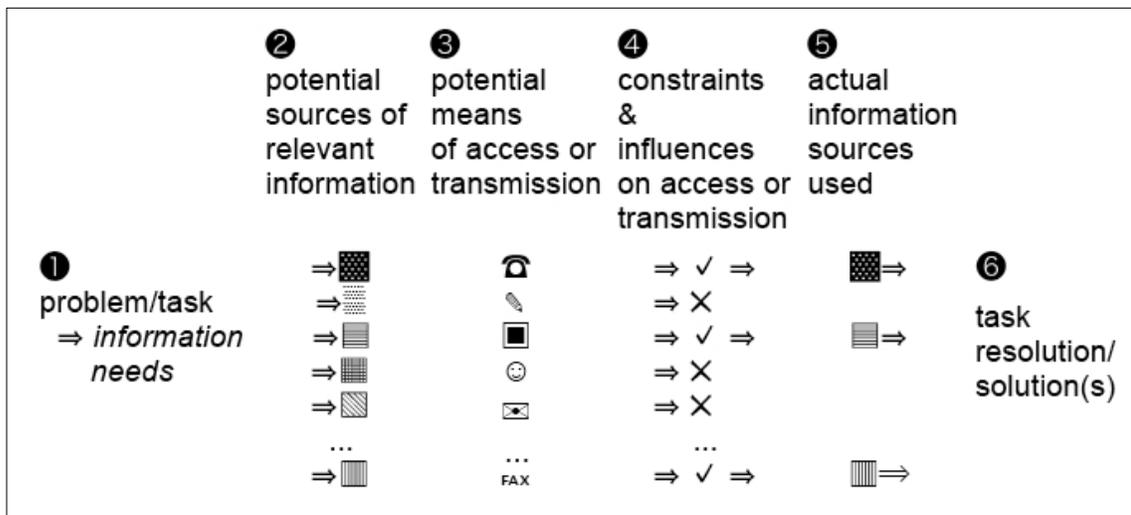


Figure 5.1: An information environment map (IEM)

Each IEM is represented using a three dimensional taxonomy of information derived from McCreadie and Rice as shown in *Table 5.1* (1999a & 1999b).

Table 5.1 Information environment mapping taxonomy

Dimensions	Facets
Perspectives on information	Information as: <ul style="list-style-type: none"> • commodities • data collected within an environment • a representation of knowledge • data exchanged as part of a process • a data format
Means of access or transmission of information	Access or transmission: <ul style="list-style-type: none"> • to knowledge • via technology • via a process • via control or participation in making information • via social or organizational participation • through referral • as an intermediary
Constraints and influences on access or transmission of information	Types of constraints or influences: <ul style="list-style-type: none"> • affective • cognitive • economic • organizational • physical • social • technical

5.4 RESEARCH DESIGN

Each staff person was presented with a hypothetical scenario in which they were asked to solve a problem. The scenario was intended to closely relate to those they normally face in their work

environment. They were, however, usually broader than any individual's normal job functions. This was due to the impracticality of designing individualized scenarios, as well as the need to encourage respondents to draw deeper from the knowledge they have of their information environment by forcing them into slightly unfamiliar terrain.

Subjects were asked to construct a step-by-step plan for solving the problems presented in the scenario. For each step in their plan they were asked to identify three facets of the information needed to complete the step: (1) the type of information required to carry out the step; (2) sources of that type of information; and (3) the means, if not obvious, by which the information would be accessed (e.g. telephone, voice, e-mail). It was important for staff to identify non-obvious situations. For example, someone may only have to access a web page by having another person print and deliver it.

Scenarios were developed for three of the four organization based around the specific services they deliver. A general inventory of the information environment was made for the fourth site since its service offerings are very broad.

5.5 DATA ANALYSIS: INFORMATION ENVIRONMENT MAPPING

Four IEMs were performed and each was analyzed separately. In terms of participants, there were: nine at the health and wellness centre; seventeen at the job placement organization; eight at the skills and training organization; and, six at the community development and employment resources organization. A combined analysis is presented here.

PERSPECTIVES ON INFORMATION

Information as commodities

These organizations have used commodified information mostly in the forms of services, licensing and subscriptions. Some services are ICT-specific, such as a URL checking service, temporary technical support, and client services provided by external organizations. Telecommunications is another major category of services. Beyond basic telephony, these included Internet access, pagers and mobile phones for staff. Some services are provided by the organizations themselves at significant cost. The primary example is the publication of newsletters.

Licensing and subscriptions costs include: specialized software to support functions, such as fund raising; and specialized data collections, including local community resource guides and information about philanthropic organizations. Software updates have also been a significant cost.

Clients and staff sometimes bear the costs of information. Some clients, for example, have relied upon mobile phone service to maintain contact with their organizations. Other clients have been guided by their organization to take courses that have tuition costs. One staff person described paying for the cost of periodical literature and article reprints important to their job function.

Information as data collected within an environment

These organizations regularly make use of information from networking, where data that are critical to providing services are discovered or disseminated in an unplanned manner.

The types of networks cited by staff reflected all possible social combinations between staff, external organizations, and clients. The environments in which these information exchanges occurred have most often been “drop-in” face-to-face meetings or telephone calls. New relationships have sometimes been established through events sponsored by an organization, where invited persons bring information into the network. Data collection has happened during experiential activities that an organization provides its clients. One example is a community gardening program, where staff rely almost exclusively on “hands-on” training techniques. Observation of client behaviour in health-related contexts was cited as another type of data collected within an environment.

Information as representations of knowledge

These organizations have made use of various representations of knowledge. One significant finding is that printed material and oral information figured more prominently in this category than might be expected. Each organization identified a small number of printed sources of knowledge as central in the services they provide. In three of the organizations this was a collection of information that identified local community resources related to the services offered by the organization. The fourth organization identified a national funding sources guide. Only two of these sources were available on ICT, one on-line and the other as a downloadable file. Many staff in these organizations cited oral information exchange as more important than electronic forms such as e-mail. Exchanges in this form include all combinations between staff, clients, and external organizations, including face-to-face conversations and telephony.

web-based content, as expected, provides important representations of knowledge for these organizations, including: information on government departments, programs, and procedures; portals to information on local community resources and services; and web sites of key external organizations as well as portals to information relating to the service domain of the organization, such as health care, horticulture, or job training. The web sites of these organizations were also cited as important sources for staff.

Other common representations of knowledge used by all of these organizations included: electronic databases and data sets, such as *Statistics Canada* data; paper file systems including case notes; e-mail messages and e-mail lists; books, newspapers, and other types of periodicals. The use of chalk messages on sidewalks to announce community events was a unique example at one organization.

Information as data exchanged as part of a process

Organizations can be characterized by the processes they employ and information exchanges within them. Processes used by these organizations have usually been developed internally, and include: standardization of client intake; maintenance of client case notes; and administrative processes, including advisory board functions.

Most of these organizations use a standard form to collect information from new clients. Clients usually present themselves in person at an organization. Telephone and e-mail are used less frequently by clients to “sign up,” but they may be used along with an in-person visit as a follow-up.

Most of these organizations have defined specific processes for clients within their programs. Clients may have to complete training or orientation to take part in a program, for example, to obtain job placement services.

Processes are not always developed by the organization. Some have been mandated by external organizations. All of the community organizations must file reports to funders or service providers, which necessitates data collection and writing by staff. Some processes are the result of legal requirements. For instance, Federal law requires these organizations to obtain consent to access a client's personal information and to act on their behalf. Obtaining consent involves the filing of specific information, including signatures. Because these organizations act as intermediaries between their clients and external organizations, service offerings are dependent on obtaining

this consent. Other legal or policy-mandated processes cited were for involuntary interventions on behalf of a client and obtaining certifications for clients.

One problematic category of processes for these intermediaries is those initiated by reorganizations in external organizations with which they interface. Structural changes in an external agency often result in procedural changes that are dictated to the intermediary. New procedures and processes for a community organization, for example, may involve transferring client files to a new place in the external organization, which may result in delays for clients.

Information as a data format

The contrast between data formats supported by electronic ICT and non-electronic data types was of particular interest. Beyond basic telephony, all of these organizations have, in the aggregate, used all of the common electronic data formats anticipated in the taxonomy defined for IEMs. These include: databases, local or on-line; web content; voice mail; FAX; and e-mail.

web content, as expected, has been a widely used format in these organizations. This includes the authoring of content for organizational web sites as well as the use of reference information from a variety of on-line sources. Content generated via web services has also been gaining in use, including the completion of administrative tasks, such as filing benefits claims.

Some common data formats were observed only in subsets of the organizations. These include text messaging, video, and non-interpersonal audio. The health and wellness centre has used paging, and was the only organization to use TTY-based text messages for the hearing impaired.

Three organizations cited use of recorded video to support training programs. One organization offers a video library to clients for this purpose, and video records motivational messages from community members who have completed educational programs. Another organization uses video for teleconferencing. One organization cited the use of radio as a means of advertising its programs and events.

Non-electronic data formats used in these organizations included newspapers and specific documents that are routinely used by the organization. The most unique example of non-electronic data formats was sidewalk messages written in chalk to advertise events.

PERSPECTIVES ON ACCESS TO AND TRANSMISSION OF INFORMATION

Access to knowledge and Access to technology

Attention to *access to knowledge* and *access to technology* was given to identify non-trivial or non-obvious issues in an organization when it attempts to access, use or produce information vital to providing services to clients. Organizations cited the use of common electronic ICT as expected. These were: advanced telephone services, such as voice mail and conferencing; mobile telephony; database management; e-mail and e-mail lists; FAX; web browsers; web e-mail, and web search engines.

Subsets of these organizations cited the use of various other ICT. Examples of commonly cited ICT include: video playback; audio production for radio; paging; and software applications for specific administrative functions such as accounting. Less commonly-cited ICT include: TTY/voice relay services; web URL checker services; radio; and domain-specific software applications to support such functions as fund raising and web content management. Neither broadcast nor cable television was used by any organization.

Web services are a new category of ICT that most of the organizations are using. One organization makes use of a course content management system to support on-line learning by its clients. Some of these organizations perform administrative and legally mandated processes using web services.

Transportation was a non-obvious "ICT" used by these organizations in the sense that travel has been necessary for the face-to-face communication that is vital in these organizations.

Access to process

Several types of processes are commonly used to access information in these organizations. Organizations gain access to client information, as discussed above, through client intake and client consent processes. It should be noted that electronic ICT are not used by all of these organizations to maintain this type of client information as it is collected. This is often done on paper. Another type of process representing access to information that all of these organizations cited was the requirement to write formal reports to external funders or program managers. They represent accesses to information in that they are usually collaborative processes involving input from multiple staff members. The final type of process used to access information by these organizations is the publishing of newsletters.

Access to control or participation in formation of information

This is a special case of *access to process*, where processes that generate information require a high level of collaboration. These organizations all carry out such processes to publish newsletters, author and update their web sites, and write grant proposals and reports to external funders or partners. The latter two activities usually involve multiple staff integrating information about their areas of responsibility. Other examples of participation in the formation of information expand outside the organizations. One organization participates in an e-mail list for community organizations. Some organizational activities involve participation among clients and staff. These include job placement programs, where staff assists clients in writing resumes, applications, and other materials necessary to obtain employment. The horticulture programs at one organization are highly participatory and might be viewed as forming information as collective knowledge of environmental conditions and techniques among clients and staff.

Access to participation in a social or organizational context

Another important venue to access information occurs with social or organizational processes. Two organizations cited membership in regional or sector organizations as an example. The primary examples that were cited by all organizations as the most important means of exchanging information were the social interactions between clients and staff.

Access through referral (indirect access)

Most activities undertaken on behalf of clients can be seen as helping both individuals and whole communities to access life-critical information. These are indirect accesses to information by staff in that they do not process the information being accessed. These organizations, for example, assist clients in gaining access to programs conducted by external organizations.

Access as an intermediary

Some activities undertaken on behalf of clients involve processing information before it is delivered, whether to individuals or to the whole community. The expertise of an organization is applied to help clients understand or use information. Examples include the interpretation of: health information, current horticultural advisories, labour market conditions and training requirements, and the use of ICT.

INFLUENCES AND CONSTRAINTS ON ACCESS TO INFORMATION

Technical influences and constraints

Lack of access to a technology was the most common constraint for the organizations, such as the absence of networking infrastructure and data integration capabilities. As a result, staff devised both electronic and physical schemes for managing and sharing data, but there is still undeveloped potential. Many staff members want the ability to collaborate through the use of common versions of documents, for example. One organization does have an internal network and server that would allow this, but it has not been set up to do so. A related constraint is the inability to access office networks from the outside. Staff in several organizations indicated that the ability to work from home or other remote locations could increase productivity.

Some staff in these organizations must be mobile, which has influenced the desire to have mobile ICT. This is particularly the case with staff that regularly goes into communities to see clients. Other technical constraints are: software version conflicts, unreliable ICT, lack of software functionality such as statistical analysis and image processing for newsletters, computer viruses, and problems with e-mail such as list management. All of these constraints influence staff to improvise workarounds that allow them to remain productive.

Physical influences and constraints

Geographic barriers, specifically for clients who lack access to transportation and telephones or other means of communication, were cited in all of these organizations as impeding face-to-face and oral communication. Attempts at any communication have been complicated, however, by the reality that many clients have not had stable addresses. Electronic ICT in these cases was seen as necessary. Clients in some organizations are assisted in creating web-based e-mail accounts so that staff can communicate with them in a location-independent way. Staff in some of the organizations said that many clients rely on mobile phones to deal with not having a stable address. Postal communication using third-party addresses, such as homeless shelters, was still the only means to reach some clients without phones or permanent addresses.

A variation on geographic barriers exists at one organization because it serves clients across a wide geographic region. Transportation is often not a practical option in this case, which has influenced the use of ICT for distributed collaboration such as web-based tools and video conferencing.

Accessibility for clients with physical disabilities can also present a constraint on access to information. One organization lacked elevators and ramps, which limits the ability of some clients to access certain facilities and programs.

Cognitive influences and constraints

Adult illiteracy was cited at some organizations as a constraint. Staff members have assisted clients in these cases in obtaining services and training, towards becoming literate.

Linguistic barriers present a cognitive constraint on clients at one organization. This has required the development of special resources within the minority language. Another organization cited the potential for linguistic barriers in their community, given a diversity of language groups there. Staff were cognisant of resources available to assist clients who have language barriers should the need arise.

Lack of ICT skills has been a constraint on both clients and staff. This has influenced these organizations to support ICT training for its clients. Some staff saw a need for staff training that is specific to the types of community intermediary work they do. Other staff members want additional capacity to implement more complex functionality within their technical infrastructure.

Limits on technical support put other constraints on organizations. All sites have competent staff for very basic technical support, but their numbers are usually limited. These constraints influence the use of ICT infrastructure at less than its full potential. Productivity bottlenecks result when an organization's one technical support person is not available to fix a problem.

Affective influences and constraints

Staff in most organizations cited attitudes about electronic ICT that significantly influence the way they choose to communicate. A subset of staff voiced a general distrust of these technologies. One concern has been appropriateness. Many staff view technologies such as e-mail as inappropriate for most types of communication. Several staff insisted on formal letter writing for professional reasons.

Staff members rely on their attitudes about ICT to decide how to exchange information in a given situation. Many have felt that communication by voice -- face-to-face if possible -- is a more effective way to get meaningful information than e-mail. Some cited specific situations where

there is a need to sense emotion in a client. Many thought that accessing detailed and nuanced information required human agents, as opposed to web pages or e-mails. Important situational judgements also involved knowledge about the likelihood of reaching someone through various means. Mobility and transience of clients has influenced staff to use certain ICT in these situations, as discussed above.

Attitudes about clients themselves were also cited as influences in the way information is exchanged. Some staff felt that they must intercede for certain clients in dealing with external organizations due to perceptions about their abilities to do so on their own. Attitudes of outsiders, such as employers or landlords, were also cited as situations affecting how information is exchanged. It may be best, for example, for staff to intercede on behalf of clients.

Other affective issues cited by staff included: privacy; trust in the quality of information; and frustration in using ICT, such as web search engines.

Economic influences and constraints

Economic constraints are significant for these organizations and many of their clients. Organizations, as a result, are limited in the ICT infrastructure they have. This, in turn, limits information processing functionality and productivity. Use of in-house ICT was not always the best choice in the trade-off between productivity and cost, however. One organization decided to outsource the layout and printing of its newsletter to reduce cost. This brought the ironic concern that the outsourced version looked more expensive to the intermediary's donors, among others.

Many clients are impeded in their use of ICT, partly for economic reasons. Basic telephony is not affordable to some. Clients may also experience homelessness. Various means have been used by clients and staff to achieve communication as a result of these constraints, as discussed above. A significant proportion of clients in some communities have mobile telephones, according to staff. At one organization, however, staff indicated that significant numbers of their clients regularly exhaust their pre-paid service before they have money to replenish it.

Staff develop creative ways to work around economic constraints. One organization simply uses sidewalk signs written in chalk for part of its advertising. Several organizations assist clients in obtaining web mail accounts at their own computer centres.

Social influences and constraints

Staff members at these organizations rely on social networks to find and exchange information vital to their clients, such as checking with colleagues at other organizations on the availability of jobs or housing. Reliance on this level of information exchange is a response to the inadequacies of other sources of information, such as web sites, in providing timely and accurate information.

Other types of social influences were observed. Staff at one organization said that clients felt social pressure to continually upgrade their cell phones, which can exacerbate the existing economic constraints discussed above.

Organizational influences and constraints

Changes within external agencies or departments exert organizational influences on the exchange of information. For example, reorganizations within external organizations may require changes to administrative procedures within a community intermediary. Clients may experience significant delays as a result of their files being transferred within the reorganized entity. Staff said that the severity and frequency of such changes differs between organizations and sites. Some are better than others in helping these community organizations respond.

Constraints sometimes exist on how consent documentation is transmitted. Obtaining consent to access a client's personal information, as discussed in the perspective sections, is often required by law. Some external organizations will not accept these in certain electronic formats, such as FAX.

5.6 SUMMARY

Staff members at all of these organizations had comprehensive views of their information environments. They showed that they were creative and adaptive to influences and constraints in accessing information they need to serve their clients. Priority is given to finding and using the best means possible to help clients. Staff members involved in the overall administration of these organizations tended to emphasize the use of ICT more often when discussing current situations in their organizations and when contemplating potential uses of existing technologies and imagining new types of ICT.

Most of the information used in these organizations is described as *representations of knowledge* within the taxonomy. Web content is a major format in this category, as expected. What was not expected was that oral and printed information were seen as equally important as electronic formats. Staff across all organizations cited the primacy of interpersonal exchanges as critical to finding current information of importance to clients. Another prominent perspective on information in these organizations was as *data collected within an environment*. Printed compilations of local community resources were also cited by most organizations as critical to the services they provide for clients. Most of these sources offer limited on-line versions. Another vital category of information sources includes sector-specific guides to funding sources and programs, which in some cases were available in both on-line and print formats.

Processes are the other major perspective on how information is viewed within these organizations, including client intake, obtaining client consent, reporting to external sponsoring organizations, and the publication of newsletters.

Most organizations use common advanced electronic ICT, including advanced telephone services, mobile telephony; advanced software applications, e-mail and web services. The use of other common electronic ICT was observed in various subsets of the organizations. This included web-based collaboration tools, text messaging, video, video conferencing, and TTY-based text messaging for the hearing impaired.

6 WAYS FORWARD

6.1 COMMUNITY INTERMEDIARIES IN THE KNOWLEDGE SOCIETY

Community organizations have an historical, highly effective role of providing relevant services to meet core socio-economic needs of community members. The roles of community intermediary organizations, to provide information and services to local citizens, have become increasingly important as citizens' needs change in the emerging "knowledge society."

These organizations are also very important resources for governments to meet policy and program objectives. Community intermediaries act as partners, sub-contractors and surrogates in the delivery of government information and services. In many instances, citizens seek and use information and services from a community organization, rather than directly from a government department or agency. The continually expanding mandates and activities expected of community intermediaries in providing government services have not been sufficiently supported by the various levels of government. The weakness in this virtuous circle of information and service delivery is at the level of resources: community intermediaries do not have the resources that they need either to meet the demands of citizens and to manage and distribute continually changing or inadequately developed government services and content. Resources that are required in order to effectively provide program and service delivery are: staff resources; information and service content development and dissemination; technology maintenance and upgrades; staff IT training; human resources development and support, and effective level of communications (e.g., access to high speed internet services, multiple channel service delivery, etc.).

Where formal relationships already exist, governments are increasing the demands upon, responsibilities of, and accountability by community organizations. However, these organizations have not received commensurate support with the required resources to be effective, and in some instances, sustainable over the longer term. With community intermediaries essentially doing the "work" for government, financial support should be provided to assist with at least some of the core operating and personnel costs of these organizations. Without this, the risks increase that service delivery will not be effective, the ability of the community intermediaries to adapt and change to meet the evolving needs of the public will be limited, and the sustainability and prospects for continuing operation of these organizations becomes a growing concern.

A real opportunity exists for the federal government and community intermediaries with the Services Canada initiative or, given that this initiative may not reach fruition in its current form, its underlying service strategy. The service strategy of Services Canada closely aligns with the existing strategies and processes employed by community organizations. These organizations are already providing information and services to the public. This would include, for example in language of use, multiple communication service channels, through “boutiquing” or packaging information and services around the specific needs of communities and citizens, etc. Pilot program delivery by Service Canada includes progressive and innovative initiatives to facilitate community-level services, including cost sharing of local personnel by government departments and non-staff resource support. Of mutual benefit to the federal government and communities/citizens would be the establishment of close collaborations and partnerships between Services Canada, or departments using the same service strategy, and community intermediaries. Such partnerships should address the service needs of the public, and provide various forms of support for addressing the critical resource problems experienced by community organizations.

There have been high-level investments by government into infrastructure and digitization of back-end services and content. While these are required components of a national service infrastructure, these have not had significant impact or value at the local, community level. Greater attention and resources should be devoted to service delivery at the community level, including the development of relevant content in different languages and formats, to meet the needs of Canadians as well as to ensure successful program delivery and thereby achieve policy objectives. As part of this, the federal government, individually, and in collaboration with provincial and territorial governments, should ensure the availability of relevant content in multiple use formats, available across Canada in the official languages as well as in minority languages.

Community intermediaries deliver many specific programs for government departments through contracting and similar arrangements, such as employment insurance, data bank job searches, employment training skills upgrading, work placement, as well as health information/services, among others. Government departments should provide increased resources, including financial, technical and content, and agencies to ensure that the community intermediaries have the capacity to provide service levels that contribute to successful specific program and policy objectives.

6.2 ORGANIZATIONAL ISSUES

The funding arrangements of each organization have a major impact on the delivery of services and information to clients. Funding for the three learning and employment resource organizations is a mixture of core, fee-for-service and program funding. Such funding arrangements are contingent, variable and not sustainable either for program delivery or for offering new programs in this or other service areas. Core funding is being phased out and replaced by fee-for-service, short-term program and project funding. These are inadequate to cover the current operating costs of each of these organizations. To make up core-funding shortfalls, organizations have engaged in extensive fundraising, which may or in most cases do not, result in funding increases.

The short duration of project funding at the learning and employment resource organizations has resulted in widespread job insecurity, working short-term contracts and no job security. As staffing decreases, so too do services to clients. There is inconsistency in salaries as a result of how the government funds different geographical areas; some staff members are receiving less pay than others for doing the same work because of where they are located. Low staff salaries have contributed to a rising rate of staff turnover. Salary increases are rare. At one of these organizations, staff has not had a salary increase for the past six years; at another organization staff received their first small increase in ten years. Staff members put in long volunteer, unpaid hours, and volunteers to help paid staff are rare, preferring to seek paid employment.

These funding situations also affect the organizations' ICT resources in all areas, be it software, hardware, training, access, or maintenance and upgrades. Yet, a number of grants and government programs exclude funding for these technologies and services such as computers, access to the Internet, high-speed services, etc. These generally unsustainable funding situations and the subsequent effects on staffing, ICT and Internet services have a negative impact on the capacity of learning and employment resource intermediaries' to deliver information and services to clients.

In contrast, the health and social services intermediary receives annual core funding from the provincial health department. This secure funding arrangement provides the organization with a significant advantage over the three learning and employment resource organizations, but there are still significant funding challenges. Although organizational funding is secure, the upcoming integration of its IT systems with those of its program partners will require staff ICT training to ensure that the new systems are adequately and properly used. An ongoing challenge related to staff ICT training is the lack of funds to replace a staff member in training.

The composition of the clients at each community organization is an important factor in delivering services and information. A majority of the clients have low- income levels of five to fifteen thousand dollars per annum. Two organizations serve clients who are young adults between the ages of 19 and 35. These clients have many basic needs including income, food, shelter clothing. Numerous challenges and barriers to delivering client services and information include: low education levels, high illiteracy levels; learning difficulties; mental health problems; physical disabilities; visual, hearing or cognitive impairments; no fulltime work experience; intimidated by technology.

A combination of language barriers and aging creates additional barriers. Receiving health services in one's first language, particularly as a person ages (clients 65 years of age and older), helps to ensure that diagnosis, treatments and services are understood. At this stage in a persons' life a lack of support and a lack of knowledge about health and wellness services often contributes to further isolation.

Services and information cannot be delivered the same way to clients with a mix of English speakers, Aboriginal peoples who speak different native languages, and recent immigrants to Canada. Currently the organizations do not have the capacity to address the needs of these, or other, non-official minority language speakers. The organizations provide many services as well as information to help address social and economic needs, but the study found that cultural needs have to be addressed as well.

The study also revealed that clients served by the community intermediaries value the importance of learning and employment resource services and health and wellness information. They are also very interested in receiving online services such as skills upgrading, lifelong learning, computer literacy and numeracy upgrading and health information and services.

6.3 INFORMATION AND COMMUNICATION TECHNOLOGIES

The role of the four organizations as intermediaries in e-government is specific to the particular social, economic, cultural and political contexts of their communities and the type of information and services they deliver. The one organization studied with adequate and sustainable core funding is also the best prepared of the four to deliver public information and services using the Internet. The other three organizations do not have the capacity to be effective e-government intermediaries. Building their capacity will require significant and ongoing funding and other resources in all areas of the organization including staffing, training, core overheads and ICT.

Community intermediaries take a multi-channel approach to delivering services and information. All the organizations have developed a wide range of channels – from posters and pamphlets to websites – to inform and provide services to clients and potential clients. The organizations provide most information and services by telephone and in-person, the channels providing the personal contact preferred by most clients.

Although all the organizations use ICT for operational use and delivering services and information, not all are doing this effectively. All four organizations have a website, but only two use them strategically and keep them maintained. Three of the organizations provide computers for clients to access information and services online, despite considerable challenges. Lack of high-speed infrastructure is a barrier to service delivery for the one organization providing services in a rural area.

The benefits for clients using ICT for information and service delivery include easier access to information and services, increasing their ICT skills for employment, and increasing their social capital when using computers in community settings. However the barriers of using ICT outweigh the benefits for many clients. The primary barrier is lack of access to the Internet – levels of home Internet access range from 70 per cent for clients of one organization to 30 per cent for clients of another – due to the high cost of computers and Internet use. Community Internet access is not always available or appropriate. Many clients have a low capacity to use ICT effectively.

Benefits for staff and organizations using ICT vary among the organizations. They include easier access to information, getting information for and to clients more quickly, and networking more effectively with funders and partners. The one organization with adequate and sustainable core funding has the highest level of effective ICT use and has the most successful outcomes with program and service delivery. Using ICT effectively presents very significant challenges for the other three organizations. ICT troubleshooting and ongoing maintenance is a common problem. Challenges include using and maintaining ICT software, hardware and internal networks, software glitches that no staff member can fix, not having enough computers or Internet connections, having old computers that crash often, and assuring an adequate electrical supply for ICT. Two organizations experience significant challenges with their internal phone systems that impede service delivery.

Staff ICT training is an ongoing issue for community intermediaries because of new emerging ICT and evolving requirements for service and information delivery. The one organization with adequate and sustainable core funding has the highest staff ICT capacity and is the best

prepared to ensure future staff ICT training needs are met. The other organizations face significant challenges ensuring adequate staff ICT capacity, primarily because their limited funding also limits their ability to ensure that staff is trained to use ICT effectively. None of the organizations have a staff ICT training policy in place.

All the community intermediaries studied face considerable challenges using ICT to deliver information and services. A multi-channel approach to delivery – with the emphasis on telephone and face-to-face personal contact – is clearly how community intermediaries will continue to operate in the foreseeable future. For the three organizations without adequate and sustainable core funding, using ICT effectively is clearly an overwhelming challenge. A substantial investment of financial, human, and technical resources will be necessary to ensure that these organizations will be able to effectively use ICT to deliver information and services to their clients.

6.4 INFORMATION SEEKING AND DECISION MAKING

The most significant types of constraints and influences on the access and exchange of information in these organizations are, without ranking: technical, affective, economic, and organizational. The most critical – and not necessarily negative – of these are: lack of access to current networking and data sharing technology, priority given to non-technical interpersonal communication, financial constraints faced by all organizations and many of their clients, frequent change within external sponsoring agencies requiring organizations to change the ways in which they access and process information. Physical, cognitive, and social constraints and influences are not insignificant. The most critical of these are: the existence of geographic barriers where some organizations are located or clients' lack of transportation, lack of training by both clients and staff in the use of ICT, and the necessity of relying on social networking by staff to obtain critical information for their clients.

An improvement in the ICT infrastructure of these organizations would enable staff to offer even greater levels of service. Improvements should focus on minimizing the communications difficulties faced by clients and increasing the administrative efficiency and capacity of these organizations. These organizations need software and networking infrastructure for performing statistical analysis, file sharing, and remote access by staff.

Improvements to information management are also necessary in the external organizations with which these organizations interface. The information architectures of external organizations should be designed and managed such that on-line documentation, reporting requirements, and

information about administrative procedures are easier to find and use. Architectural improvement to ICT systems in this area should also be designed to mitigate the impacts of frequent organizational changes by the external partners on these community organizations.

6.5 POLICY AND PROGRAM RECOMMENDATIONS

The following recommendations are a combination of the findings of the researchers and the views of the community intermediaries.

Federal and Provincial governments should formally recognize the role of community intermediaries as providers of government information and services. As part of this, these governments should provide support and training for the organizations' staff to better ensure that information provided to clients is accurate.

The various levels of government should establish better communications and planning mechanisms to develop a coordinated approach to funding.

There should be more consultation with and engagement of the community organizations, including the front line workers, in the development of policy by governments.

Policies and practices with respect to programs and contracts delivered by intermediaries should be revised to reflect the real costs and challenges of service delivery. Overhead costs, IT costs, accounting, support staff and other costs not currently covered by project funding needs to be included.

The process of program development and review should include close consultations with the community organizations and their staff who deliver the services.

Project time frames should be extended from short-term to medium and long-term so that the real costs of projects are covered and that the projects operate long enough to be successful.

Government programs should be flexible to accommodate community and individual circumstances and needs. Programs and services should be adapted to needs rather than the current situation, which has people being fitted into programs.

There is a need for better communication and provision of supporting materials and resources to community intermediaries by governments when they change their programs and services. The current delays and outright lack of good, clear communication of changes results in delayed service delivery and forces intermediaries to continually re-do work. Improvements are necessary to increase the efficiency and quality of service provision to clients at the local level.

Beyond how the intermediaries operate, the services they provide and the communications technologies employed, there remain deep-seated socio-economic challenges around literacy, poverty, education, skills, and disability, among others. There will be a continuing need to ensure that programs and policies provided directly to individuals and through community intermediaries are comprehensive enough to address these challenges. Government policy and program officers should practice ongoing engagement and consultation with front line workers in order to create a better understanding by all of community issues and needs, program and policy frameworks and options, and to improve the links and outcomes between policy, programs and citizens' needs.

If government services and information are going to be delivered on-line citizens want sites that are easy to use and secure. They also require reliable information, particularly health and wellness information and a guarantee that their personal privacy will not be compromised.

Funding

Federal and provincial governments should consider providing some level of core funding to community intermediaries to ensure that the organizations are able to continue to operate and to do so effectively.

Project funding rules by the federal government should be reviewed to consider the inclusion of ICT costs, ongoing ICT maintenance and support costs, and training costs for staff and clients.

Funding levels for projects and other initiatives should be sufficient to meet both the expectations of the funders and the needs of the organizations.

Funding support is required for the purchasing and upgrading of ICT and networking.

Funding support is required for ICT training for staff and volunteers.

There are still many rural and remote areas without high-speed service. The federal government should ensure that at a minimum, this level of service is available to municipal, social services (health) and community service organizations in communities.

The federal government should consider supporting the introduction and use of videoconferencing for health service and information in rural and remote areas. This initiative should include providing these services to minority language speaking citizens in these areas.

To ensure access to government services and programs for those without home Internet, governments need to consider providing financial support to keep open and maintain community access computers. The funding would need to include support for computer upgrades, maintenance, technical support, as well as staff and user training.

Funding is required to assist with hiring and maintaining staff for critical core activities in community organizations, especially those positions that involve managerial supervision and accountability, IT support, staff and client training activities.

Funding is required by organizations for internal client needs assessment analysis, as well as program and materials development.

Access and Content

The federal government needs to address the issue of phonelessness.

The federal government should address the continuing issue of the lack of high-speed services in rural and remote areas.

How information is provided to disadvantaged people needs to be improved, including how it is presented on the Internet.

More information programs are required to address socio-economic needs, such as health information and basic education among others.

Funding and other forms of support are required to translate documents and information into other languages (e.g. Aboriginal).

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