The Internet as Effective Medium for Distribution of Integral Information to New Immigrants

A Scoping Review

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ABSTRACT

This Scoping Review, one of three prepared for the Dispute Resolution Office in the Ministry of Attorney General on matters pertaining to public legal information and education for new immigrants, discusses the effective use of the Internet for the provision of integral information to new immigrants.

The Scoping Review considers barriers to online information gathering that are systemic to any immigrant population. These include issues of *linguistic competency* in the dominant language(s) of the adopted country; issues of *cultural competency*; and issues of *illiteracy*.

It presents and compares common and accepted models for the distribution of multilanguage information online. It also considers the most common technical barriers to the provision of multilanguage information, as well as solutions to these obstacles.

Further, this Scoping Review offers examples of websites that use some of the approaches or tools outlined in the Scoping Review for providing integral information to immigrant audiences in multilingual and/or multicultural contexts. In addition, it presents a short discussion of the use of new and emerging web 2.0 and social media technologies.

EXECUTIVE SUMMARY

This Scoping Review, one of three prepared for the Dispute Resolution Office in the Ministry of Attorney General on matters pertaining to public legal information and education for new immigrants, discusses the effective use of the Internet for the provision of integral information to new immigrants. In addition, it presents a short discussion of new and emerging trends in online information provision, such as the use of social media tools, which are becoming more widely used by both governments and other information-providing organizations in engaging with their respective audiences.

The Scoping Review includes information gathered from available research in the fields of communications, library science, web design, web internationalization, information science, technology studies, immigration studies, settlement studies, media studies, and several other areas. It considers barriers to online information gathering that are systemic to any immigrant population. These include issues of *linguistic competency* in the dominant language(s) of the adopted country (in this case, Canada's official languages, English and French); issues of *cultural competency*, including research into the provision of online information in more culturally-appropriate ways and the development of online environments that accommodate a range of culturally diverse information finding practices; and issues of *illiteracy* even in the language of one's home country—this discussion includes a summary and examination of cutting edge research into online provision of information in the context of illiteracy or semiliteracy in either the dominant language of the adopted country or that of the source country, or both.

This Scoping Review offers critical comparison and analysis of several websites that have been identified as sites that follow some of the best practices for website design that are outlined in the previous section of the review. It also considers technical barriers to the provision of multilanguage information, as well as solutions to the most common technical barriers.

1 INTRODUCTION

1.1 ISSUE

This Scoping Review has been prepared for the Justice Services Branch of the Ministry of Attorney General, and is one component of a three-part investigation into matters pertaining to public legal education and information (PLEI) and new immigrants.

The goal of this Scoping Review is to present evidence relating to the frequency and effectiveness of the use of the Internet and Web 2.0 technologies to provide new immigrants with integral information. While the research is grounded in the context of PLEI provision and distribution, the research presented here takes a broader focus, to include other types of integral information, in an attempt to determine whether fields other than PLEI are utilizing innovative or unique online methods to engage new immigrant communities, which PLEI providers might be able to adopt.

The research question as it was initially posed was essentially threefold; firstly, it asked to what extent and with what frequency immigrants are using internet and Web 2.0 tools to seek integral information; secondly, it asked to what extent government and other organizations are using internet and Web 2.0 tools to engage immigrant groups in the provision of integral information; thirdly, it asked what the evidence showed regarding the best methods of presentation of information, in a web environment, for culturally and linguistically diverse audiences.

1.2 SCOPE AND METHODOLOGY

A jurisdictional scan was performed, from which several leading jurisdictions were identified where important research into these subjects is being or has been performed. These include the United Kingdom, Australia, the European Union, the United States, Iceland, and Finland. The review sought government documents and academic studies detailing research into the subject of best practices for provision and distribution of integral information, via the Internet, to immigrants or non-official language speakers.

The literature review considered academic and grey literature[1] in the fields of communications, library science, web design, web internationalization, information science, technology studies,

[1] Grey literature is defined as "Information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing i.e. where publishing is not the primary activity of the producing body." The term refers to publications that are not published commercially or indexed by major databases (UBC Library 2010). Grey literature may include, but is not limited to the following types of materials: reports (pre-prints, preliminary progress and advanced reports, technical reports, statistical reports, memoranda, state-of-the art reports, market research reports, etc.), theses, conference proceedings, technical specifications and standards, non-commercial translations, bibliographies, technical and commercial documentation, and official documents not published commercially (primarily government reports and documents) (Alberani, 1990).

immigration studies, settlement studies, media studies, and several other areas. The review had the following aims: to determine the information needs and practices of immigrant groups; and to determine what the available evidence states regarding best practices in multilingual and multiculturally-appropriate web design.

In determining the framework for this review, the researchers relied heavily on the work of Nadia Caidi, a professor of Information Studies at the University of Toronto, whose work in the area of new immigrants' information practices is extensive and seminal. Caidi identifies several key categories of information that are most sought by new immigrants, and the researchers took these as their guiding framework in determining the areas of focus for this research. See *Appendix A – Top Information Needs of New Immigrants* for Caidi, Allard, and Decheif's (2008) catalogue of the information needs of new immigrants.

Further, a web scan was performed which sought to identify websites that appear to be utilizing some of the best practices, useful standards, and effective approaches as identified in the literature. Several examples are offered in the discussion below, along with a critical evaluation of the effectiveness of the sites in offering linguistically and culturally appropriate information.

These scans should be considered thorough but not exhaustive. It should be noted that there is very limited research into the area of immigrant and multilingual or multicultural web usage. It should also be noted that British Columbia was found to be the acknowledged leader in the area of PLEI provision to immigrants, and that there is very little publically-available research into the subject in other jurisdictions.

Of those organizations providing PLEI and other integral information in languages other than English via web technologies, a significant number of them are using ad hoc approaches, with limited to no evidence gathered beforehand and little to no evaluation performed to gauge the effectiveness of their approaches. In contrast, a significant amount of research has been performed in British Columbia on this subject. This research is not included in this review, as the PLEI for Immigrant Research Committee for whom this research has been prepared has indicated that the state of PLEI research in British Columbia is well-known and therefore outside of the scope of this review.

Every effort has been made to ensure that the information located is strongly representative of the state of the field; however, because of the breadth of inquiry into numerous fields of expertise and research, it should be noted that an all-encompassing analysis of all available related information is impractical. Instead, representative research has been selected through a careful collection procedure.

2 DEFINITIONS

Culture
"The thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups" (OMH 2001). All individuals have a culture, and some individuals are associated with multiple cultural groups simultaneously. Cultural categories and groups often are thought of in terms of race, ethnicity, and/or country of national origin. Similarly, an individual's "cultural identity" often is associated with groups of individuals along racial and ethnic lines.

Cultural Competency
Refers to an ability to interact effectively with people of different cultures. Cultural competence comprises four components: (a) Awareness of one's own cultural worldview, (b) Attitude towards cultural differences, (c) Knowledge of different cultural practices and worldviews, and (d) cross-cultural skills. Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures.

Culturally and Linguistically Appropriate Services
Services that are respectful of, and responsive to, the specific needs and preferences of racially, ethnically, culturally, and linguistically diverse populations (OMH 2001).

Information Practices
A concept within Information Studies that suggests that individuals locate and use information in complex ways to address a variety of "information needs". Savolainin (2008) defines information practice as "a set of socially and culturally established ways to identify, seek, use, and share the information available in various sources such as television, newspapers, and the Internet" (p. 2).

Language
A method of communication that uses a system of sounds, symbols, and gestures that are organized in a patterned way to express and communicate thoughts and feelings. Language is a part of culture and involves both verbal and written communications.

Web 2.0
Commonly associated with web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web. Examples of Web 2.0 include web-based communities, hosted services, web applications, social-networking sites, video-sharing sites, wikis, blogs, mashups, and folksonomies. A Web 2.0 site allows its users to interact with other users or to change website content, in contrast to non-interactive websites where users are limited to the passive viewing of information that is provided to them (Wikipedia). Other common methods of interaction include the ability to upload information, the ability to receive notifications via RSS feed, and the ability to tag.

3 BACKGROUND

> *"One of the most significant forces of change on PLE is the growing acceptance of the World Wide Web (the Internet) as a medium of communication and a dominant source of information and learning opportunities. The Internet is less than ten years old but already it offers PLE new ways of creating, sharing, and managing knowledge, of reaching far-flung audiences and of engaging and supporting communities of interest."* (Gander, 2003)

However, as Gander goes on to say, the Internet has also affected fundamental understandings of the function of PLE[I] and has highlighted the narrowness of previous understandings about the needs and interests of various publics as they relate to PLEI. "The physical, psychological, and structural barriers that used to keep the public from accessing resources found only in law libraries are all but eliminated on-line. With the Internet, anyone can now take advantage of ready access to legislation and cases, long thought to be of value only to someone with legal training" (Gander 2003).

Further, governments around the world are currently moving towards "E governance" and the provision of information and services online. Several of these E governance strategies include provisions to address barriers to accessing these online services and information that stem from the cultural and linguistic diversity of their citizens. For example, the federal governments of the United States and Australia, and the European Commission all have policies to ensure that government information is available in multiple languages online. On an even larger scale, "web internationalization" efforts are underway by organizations such as the Worldwide Web consortium (W3C), the goal of which is to re-balance the information available on the web in order to reflect the linguistic and cultural diversity of the web community.

Based on research performed on behalf of the PLEI Working Group[2] in British Columbia in 2005, it was found that providing PLEI in other languages and ensuring information is culturally sensitive were particular challenges. Literacy was also among the issues identified in that research (CS/Resors Consulting, Ltd., 2005).

[2] The PLEIWG is a group of organizations that provide public legal information and education resources and outreach services in BC. The members are: Legal Services Society; The People's Law School; Law Courts Education Society; Centre for Education, Law and Society, The Law Centre, Law Students' Legal Advice Program; Ministry of the Attorney General; Ministry of Public Safety and Solicitor General; B C Courthouse Library; Canadian Bar Association (BC Branch). The Working Group is committed to working together to: co-ordinate the efforts of member organizations to provide effective and efficiently delivered legal education and information programs to all British Columbians.

Since PLEI activities are client-focused, and the provision of legal information and education is tailored to the specific circumstances of the individual in need, the importance of providing information in languages other than English or French is of utmost importance in the case of new immigrants. Since those seeking access to legal information and education are likely to be under stress, are likely to face multiple barriers, and may be unfamiliar with the legal system, it is paramount that the information provided to them be clear, easy to understand, and easy to locate. Ensuring that information is available in a client's language, is properly translated, and is located in an environment that is easy to navigate, culturally sensitive, and welcoming will ensure that additional stress is minimised.

Some immigrants arrive in Canada with fluency in one or both of the Canadian official languages. These immigrants have access to a wider range of existing PLEI and services than do immigrants who are not fluent in either of the official languages. In general, since the majority of information dissemination projects are intended to be client-centred and ideally designed to satisfy the needs of the individual, all information distribution methods targeted towards new immigrants should follow these guidelines:

- All information materials should be multilingual
- Information should be delivered in multiple formats (e.g. print, audio, visual etc.)
- Information should be presented in an easily understood and culturally sensitive manner
- Information should be easily accessible to all new immigrants
- Distribution methods should mirror target group's information-seeking behaviour

Shula Klinger, in a paper prepared for the Legal Services Society in 2007, offers the model represented in Figure 1, which situates culture as the overarching and most significant area of concern in providing PLEI.

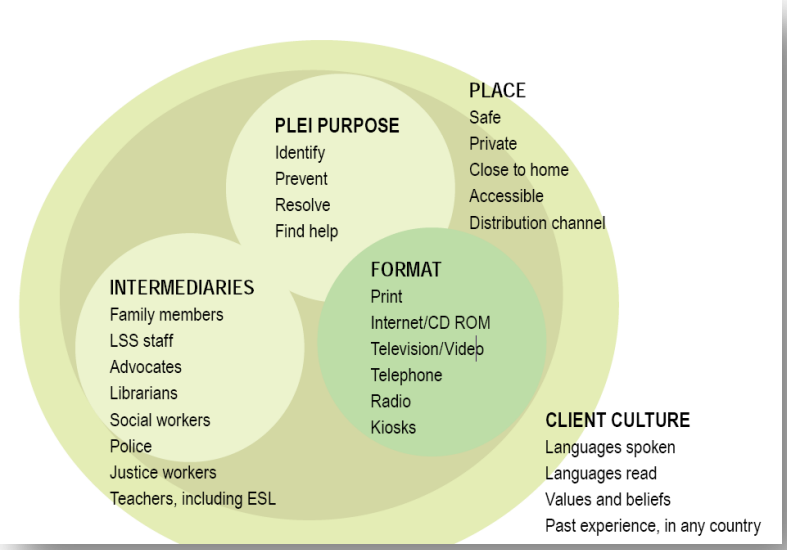


Figure 1: From Legal Services Society 2007

Further, the *Department of Justice Policy on Public Legal Education and Information* states that "the Department recognizes that many Canadians face barriers in obtaining information about the law and how it affects them because of factors or circumstances, such as living in an isolated area, having a disability or because of cultural or linguistic differences. The Department strives to take these particular needs into account in providing PLEI." However, while the Department does some research and development of products in multiple languages, it relies primarily on the provincial PLEI organizations that it funds to address issues of language and culture at a more local level, through the development of their own resources (personal communication February 5, 2010).

Given this, the need for British Columbia PLEI organizations to be cognizant of and able to utilize best practices in online information distribution in languages other than the Canadian official languages is significant.

4 DISCUSSION

4.1 B.C.'S IMMIGRANT POPULATION

In 2008 (the year for which the most recent statistical data is available), British Columbia received 17.8% of the total number of immigrants to Canada in that year, welcoming more immigrants than nearly all of the other provinces and territories (Ontario received 44.9% and Quebec received 18.3% of the total number of immigrants, respectively). As Table 1 below shows, among immigrants to British Columbia between 2006 and 2008, the majority of immigrants over the age of 25 had college- or university-level educations.

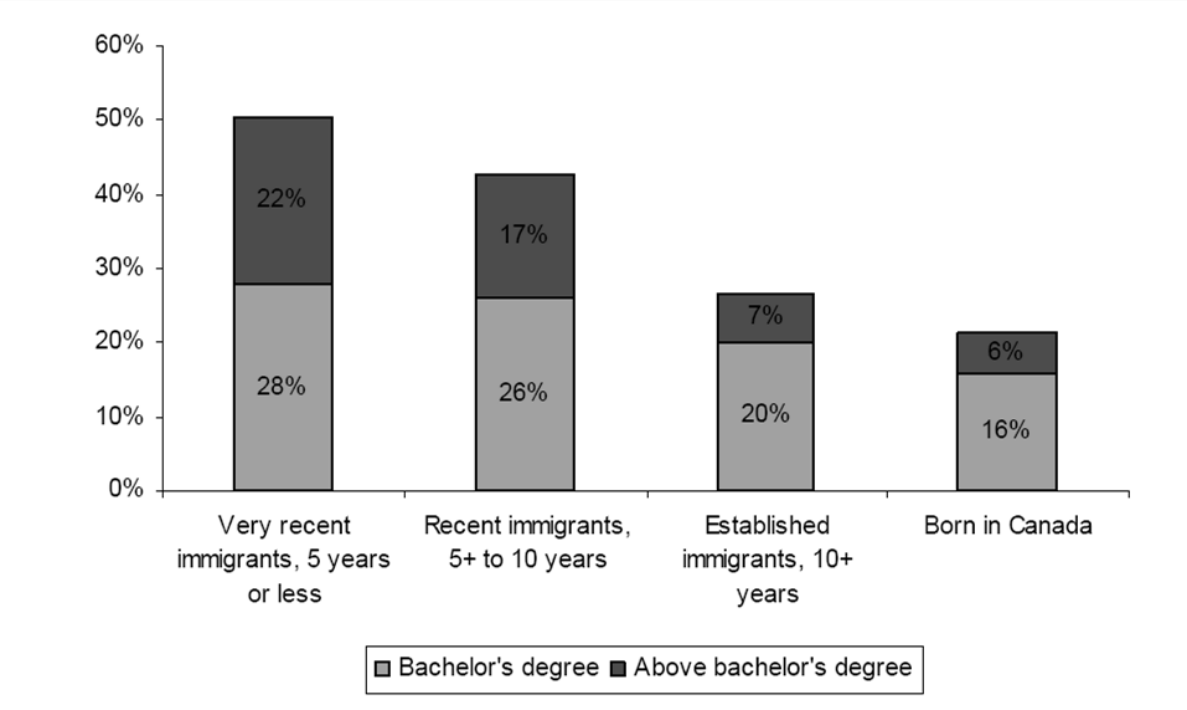
Table 1: Data Source: Citizenship and Immigration Canada

Immigrants To B.C. (Aged 25 and Over) By Level of Education at the Time of Arrival, 2006-2008			
Highest Level Of Education	**2006**	**2007**	**2008**
High School or Less	26.80%	27.10%	25.00%
College or Trade Certificate	22.00%	21.40%	22.60%
University Degree	51.20%	51.50%	52.40%
Total Immigrants to B.C. (Aged 25+ Yrs)	100%	100%	100%

Further, on average, landed immigrants to B.C. are much more likely than Canadian-born British Columbians to have a university education. As represented in Table 2, the number of immigrants with a university education has historically outpaced the number of Canadian-born British Columbians with a university education, and the trend has only grown stronger in the past few years; new immigrants are significantly more likely than either established immigrants or the Canadian-born population to hold a university degree. In 2006, very recent immigrants to B.C. were more than twice as likely as Canadian-born British Columbians to have a university degree—50 percent compared to 21 percent.

In 2006, 11 percent of British Columbians aged 25–54 did not have a high school diploma or a postsecondary credential. The proportion of the population without a high school diploma or a postsecondary credential is the same for immigrants and Canadian-born British Columbians.

Table 2: Proportion of Population Holding a University Degree: Immigrant and Canadian Born
Source: http://www.bcstats.gov.bc.ca/pubs/immig/imm072sf.pdf



There were slightly more females than males in the immigrant population of B.C. in 2006: of 100 foreign born persons residing in the province, 52 were women. A majority of B.C.'s foreign born population were middle aged, with persons in the retirement ages representing the next largest group. Similar to what has been indicated by other immigration statistics, the 2006 Census also confirmed that recent immigrants to B.C. tended to be younger.

More than half (56.7%) of the immigrant population in B.C. who arrived in Canada during the last five years prior to the 2006 Census were in the 25-54 age group. It has also been shown that recent immigrants to B.C. tended to have a younger median age than the overall population in the province.

Approximately nine in every one hundred foreign born persons in B.C. had no English language ability. Recent immigrants—those who landed between 2001 and 2006—reported an even higher percentage (14.8%) of English language deficiency. In 2006, nearly half of the B.C. foreign born population stated neither English nor French as the language they spoke most often at home.

Table 3: Top 10 Source Countries of Immigration to B.C., 2004-2008 (Based on Country of Last Permanent Residence)
Source: http://www.welcomebc.ca/shared/docs/communities/immigrationtrends2008.pdf

Top 10 Source Countries of Immigration to B.C., 2004-2008 (Based on Country of Last Permanent Residence)									
2004		**2005**		**2006**		**2007**		**2008**	
Mainland China	11,048	**Mainland China**	13,725	**Mainland China**	10,930	**Mainland China**	8,259	**Mainland China**	9,900
India	4,066	**India**	5,746	**India**	5,966	**India**	5,180	**India**	5,474
Philippines	3,013	**Philippines**	4,176	**Philippines**	3,738	**Philippines**	3,953	**Philippines**	4,997
South Korea	2,273	**South Korea**	2,519	**United States**	2,436	**United States**	2,632	**South Korea**	2,903
United States	1,496	**Taiwan**	2,235	**South Korea**	2,320	**South Korea**	2,390	**United States**	2,655
United Kingdom	1,397	**United States**	1,954	**Taiwan**	1,922	**United Kingdom**	2,212	**United Kingdom**	2,521
Iran	1,366	**United Kingdom**	1,398	**United Kingdom**	1,718	**Taiwan**	1,870	**Taiwan**	2,090
Taiwan	1,359	**Iran**	1,297	**Iran**	1,701	**Iran**	1,286	**Iran**	1,278
Russia	511	**Pakistan**	662	**Pakistan**	571	**Japan**	592	**Japan**	601
Japan	508	**Japan**	554	**Japan**	567	**Singapore**	511	**Singapore**	592
Other Countries	9,991	**Other Countries**	10,504	**Other Countries**	10,214	**Other Countries**	10,072	**Other Countries**	10,939
B.C. Total	***37,028***	*B.C.* ***Total***	***44,770***	*B.C.* ***Total***	***42,083***	*B.C.* ***Total***	***38,957***	*B.C.* ***Total***	***43,950***

Table 3 shows that the immigration patterns over the past several years have remained fairly constant in terms of the source countries of the foreign-born population of the province. Table 6, in section 4.5.1, below, further focuses on the countries of origin of immigrants to B.C. since 2006.

4.2 IMMIGRANTS' USE OF THE INTERNET

Existing surveys and research that explore the use of the Internet by immigrants suggest that immigrants have high levels of home computer and internet use (Veenhof, Wellman & Hogan, 2008; Aizlewood & Doody, 2002). Statistics from the General Social Survey 2000 and the General Social Survey 2003 indicate that immigrants are more likely than Canadian-born individuals to use the Internet to communicate with friends and family. Veenhof et al. (2008) note that immigrants have, on average, relatively high levels of education, which is a factor associated with increased internet use.

The table below, provided by Veenhof et al. (2008) compares the activities performed on the Internet by Canadian-born individuals and immigrants. As can be seen from the table, immigrants are equally as likely as Canadian-born individuals to use email, and to use the Internet to communicate with the Canadian government. Newer immigrants are slightly more likely to use the Internet to search for Canadian government information.

Table 4: Selected activities of home internet users, by immigration status, Canada 2007

	Canadian-born	Immigrated 1997 or later	Immigrated before 1997
	% of home users performing activity		
Communication			
Email	92.3	92.9	88.6
Using an instant messenger	50.4	62.0	38.8
Communicating with Canadian government	25.4	25.7	26.3
Contribute content (blogging, discussion groups, photos)	20.9	17.4	16.7
Make telephone calls over the Internet	6.4	26.8	12.5
Local information			
Obtaining weather reports or road conditions	71.2	65.9	61.4
Viewing the news or sports	62.1	75.0	65.4
Researching community events	44.4	45.0	42.6
Other information			
Travel information or making travel arrangements	65.4	66.4	68.6
Searching for medical or health-related information	59.5	53.3	55.5
Searching for Canadian government information	51.5	54.6	49.0
Job search	30.7	58.8	28.6
Leisure			
General browsing for fun or leisure (surfing)	78.3	62.4	67.8
Obtaining or saving music	45.6	53.8	31.5
Playing games	41.4	31.9	25.5
Listening to radio over the Internet	27.6	33.5	26.3
Downloading or watching television or movies	19.1	34.1	18.5

1. This table covers individuals aged 16 and older who said they used the Internet from home for personal use in the 12 months preceding the survey. A very small proportion of Internet users who lived in Canada at the time of the survey but did not hold landed immigrant status are excluded from the table.

Source: Statistics Canada, Canadian Internet Use Survey, 2007.

Caidi, Allard, Dechief, and Longford (2008) also indicate that there is evidence that immigrants are more likely than the Canadian-born to use the Internet in a public place, as well as being more likely to use social networking sites and to produce web content such as blogs and wikis.

4.3 INFORMATION NEEDS AND INFORMATION PRACTICES OF NEW IMMIGRANTS

It is important to note that immigrants are an "extremely diverse" group of individuals and communities, "whose needs, experiences, and strengths vary significantly depending on various factors, including: education, age, sex, country of origin, family status, and their knowledge of English or the dominant language in their new country" (Caidi, Allard, & Quirke, 2010).

Interestingly, however, a number of studies have shown that, "in general," immigrants' information needs "[remain] relatively similar across [...] source countries" (Caidi, Allard, & Quirke, 2010; see also George, 2002; George et al., 2004; George & Mwarigha, 1999). Another study (Chivhanga, 2005) conducted in Finland noted that the information needs of immigrants from Thailand, Somalia, the Gambia, Nigeria, Zimbabwe, Zambia, and Malaysia were virtually identical.

According to Caidi, Allard, and Dechief (2008) new immigrants pass through three distinct stages of information needs: immediate, intermediate, and integration. New immigrants, as they have been defined by the Ministry of Attorney General for the purposes of this project, include immigrants who are newcomers who are in the process of settling into Canada and have not yet become Canadian citizens. Their needs are therefore described substantially by the first and second of Caidi et al.'s stages. During the immediate stage of information needs, new immigrants are most concerned with obtaining information pertaining to issues such as housing, food, transportation, and methods of overcoming language barriers. The intermediate stage involves seeking information about topics such as accessing legal and municipals services, employment training and opportunities, and health care. The third and final stage of information needs includes any information, such as information regarding "host" culture and politics that will assist new immigrants in successfully integrating into their new country (Caidi, Allard, and Dechief, 2008).

The findings of the Chivhanga study support Caidi et al.'s findings: study participants from each ethnic group identified housing, education, employment, transportation, legal, and health information as crucial to meeting their initial settlement needs. Participants also acknowledged the importance of information about Finland's culture and system of government in helping them become fully settled in their new home (Chivhanga, 2005).

Appendix A – Top Information Needs of New Immigrants outlines Caidi, Allard, and Dechief's catalogue of top immigrant settlement needs.

It should be noted that there is almost no research that examines differences in information needs or information practices in terms of gender, and very little reliable research that examines differences in terms of age. Many immigrants arrive in our country with fluency and/or literacy in either English or French, as well as competence in Canadian or similar culture. Presumably, these populations will be more able to take advantage of mainstream information and education. On the other hand, new Canadians who not have complete fluency or literacy in either of the Canadian official languages or standard Canadian culture will require a more specialized service approach. In the context of this Scoping Review and the research it presents, the focus will be on

providing information and education in the context of low literacy and limited fluency in official languages, and in a culturally-specific context.

It is also important to note that there are various additional factors, other than fluency or literacy in Canadian official languages and culture, which can create barriers to a particular immigrant individual's ability to locate and make use of information. These can be categorized as either structural or social barriers, with structural barriers including such things as language proficiency and also lack of knowledge of how systems work, as well as limitations that arise from one's immigration status. Social barriers include such things as social isolation, differences in cultural values or understandings, and communication problems. Importantly, some immigrants may have limited language proficiency not only in English or French, but also in the language of their origin, or they may speak the language fluently but have literacy problems that prevent them from being able to fully access written materials.

Despite the fact that there are a number of organizations, both governmental and non-governmental, that provide services to immigrants, "there is little research that examines the extent to which immigrants are able to adequately access and make use of government, settlement, and ethno-cultural information and services available to them" (Caidi, Allard, & Dechief, 2008, p. 4).

Much of the reviewed literature noted that conducting a needs assessment should be one of the primary activities immigrant service agencies undertake prior to the development of any integral public education and information program or service (Lindberg, 2005; Chivhanga, 2005). A needs assessment can aid community centres in identifying the specific type of integral information required by particular immigrant groups, as well as in determining the most effective methods for disseminating this information (Lindberg 2005; Chivhanga, 2005). For example, the Refugee and Immigration Legal Service organization based in Australia uses focus groups and roundtable discussions with local multicultural and settlement groups to assess the current needs of the immigrant populations they serve. This type of consultation allows public legal education workers within the organization to develop high quality PLEI programs and services for their clients (Refugee and Immigration Legal Service, personal communication, January 20, 2010).

Research undertaken by the Legal Services Society (B.C.) in 2007 found that the use of online information should also be supplemented by print information:

> While we recommend that all information be on the Web, core information for clients and some self-help must be in print. Many in our client group don't use the Web to find information and many intermediaries, even if they have access to a computer, lack the time and financial resources to download and print PDF files for their clients.

The research suggests that new immigrants tend to use the Internet to locate information mostly in the pre-immigration stage, and that after they arrive in their new country they begin to rely much more on word-of-mouth and personal contacts to satisfy their information needs (Caidi, Allard, & Quirke, 2010). However, it also shows that immigrants use the Internet most often to locate information that is "more time-sensitive and critical" (Caidi, Allard, & Quirke, 2010). Further, in contrast to the Canadian research, Chivhanga (2005) lists websites at the top of his

taxonomy of useful sources of information identified by immigrants to Finland. We can therefore assume that integral information is being consumed by immigrants online, at least in some measure.

It is very important to note that immigrants identified friends, family members, and other community "gatekeepers" as the primary source of information, and that online sources are therefore most often consulted only after interpersonal information sources are found not to have the required information.

However, it was also repeatedly stated in the literature that both immigrant service users and service providers had found that the most effective use of internet technology in distributing integral information was in combination with face-to-face interaction. In such a situation, the information located on the web serves to reinforce the validity of what the service provider has said, as well as fulfilling another important need as identified in the literature, which is known as "redundancy."

Redundancy, in this case, does not carry the connotation of "excess;" rather, information is provided several times, in several formats, or through several means in order to ensure that there are minimal misinterpretations, maximal absorption of information, and thorough understanding of the concepts presented. For example, this may involve "multiple forms of communication" such as verbal and printed or on-screen information (Ciadi, Allard, and Dechief, 2008). In the health field, this is sometimes referred to as "positive redundancy," and is considered an effective method of providing improved health services, especially in the context of limited language proficiency.

4.4 Main Barriers to Accessing Information

New immigrants encounter several barriers to accessing integral information. Some of the main barriers include language, the diversity of the immigrant population, and a lack of familiarity with the information resources available in the "host" country.

Language barriers were a recurring theme throughout the literature as numerous service providers and new immigrants acknowledged the difficulty in distributing information to individuals with different linguistic backgrounds. Although much of the reviewed literature noted that new immigrants in Canada and other jurisdictions are increasingly well-educated, there are still significant concerns regarding immigrants' literacy levels with respect to the language of the "host" country (Cortinois, 2008; Cohl & Thomson, 2008). For example, of the 424,000 immigrants that arrived in British Columbia between 1992 and 2001, over half could not write, speak, or read English and the vast majority of these individuals relied on their children or friends for interpretive and translation services (Stampino, 2007). It should be noted that while these literacy numbers are improving—for example in 2007 close to 70% of adult immigrants in British Columbia possessed official language proficiency—language barriers still remain a source of concern to service providers tasked with distributing key information to new immigrants (Hiebert & Sherrell, 2009; Simich & Fu, 2004).

There is another concern expressed within the literature relating to the issues of language and literacy. Some of literature noted there are certain populations within immigrant communities who are not literate in their native tongue; therefore relying on the provision of written

multilingual materials to distribute integral information may not be effective (Geronimo, Folinsbee & Goveas, 2001; D'Elia, 2008). Immigrants and refugees with poor literacy skills in their first language are at a considerable disadvantage when attempting to access important information. In one study conducted in Toronto, for example, immigrants with low literacy skills in their first language indicated they felt socially isolated and overly dependent on friends and family members. These individuals also recommended that service providers and governments develop other ways, such as educational audio-visual products, to disseminate important information to immigrant communities (Geronimo, Folinsbee & Goveas, 2001).

The significant cultural diversity of new immigrant populations is another challenge for both immigrants and community service associations in accessing and distributing information. Every immigrant has different information needs, and attempting to satisfy the information needs of all immigrants is a daunting if not wholly impossible task for many organizations already struggling to operate with minimal financial and human resources (Karim, Eid, & B'béri, 2007). As previously mentioned, much of the reviewed literature stressed the importance of a needs assessment prior to the development and delivery of information distribution services and programs. Such an assessment can assist service organizations in identifying and addressing the most pressing information needs of their target immigrant population, which can result in a more efficient and effective use of resources (Lindberg, 2005; Chivhanga, 2005).

While cultural diversity can pose challenges to service organizations attempting to distribute integral public information to new immigrants, it can also create barriers to information access for immigrant populations. For example, some immigrants originate from cultures where it is deemed unacceptable or inappropriate to seek assistance from individuals and organizations outside of one's particular ethnic community (Duryea & Grundison, 1993; Vucetic, 2006). Some segments of immigrant populations may also be distrustful or unsure of government authorities and service providers in their adopted nation, due to experiences of corruption and violence within similar institutions in their native country. It should be noted, however, that an increasing number of service organizations and immigrant communities are working to overcome these cultural barriers to accessing integral information largely through educational campaigns and more direct involvement from community leaders in distributing key information to new immigrants (Caidi, Allard & Dechief, 2008; Duryea & Grundison, 1993).

Another significant impediment to accessing and distributing public information is immigrants' general lack of familiarity with the information resources available to them upon their arrival to a new country. The majority of the reviewed literature indicated that community organizations and governments must do a better job at ensuring new immigrants are made aware of the numerous services and information sources available, although the literature also acknowledges that such a task would involve many of the same complications mentioned above (Karim, Eid, & B'béri, 2007; Caidi, Allard & Dechief, 2008).

4.5 Ethnic and Linguistic Considerations in Web Design

Although in the section above, much of the discussion was grounded in the premise that, although as a group immigrants are "extremely diverse," the information needs of new immigrants do not considerably vary across ethnic, linguistic, or cultural lines, at this point in the

discussion, specific cultural and linguistic considerations will become significant. By first establishing which are the most prevalent ethnic and linguistic groups among immigrants to British Columbia, and then using evidence from the fields of communication studies, web design, technology studies, and others to show in what manners broad cultural groups are best able or prefer to receive information, the discussion sections below place the available research directly into the specific context of British Columbia's immigrant population.

Although it must be recognized that the categories "language" and "culture" are inexorably related and cannot be considered as mutually exclusive elements, the following sections attempt to show which considerations are most important in creating web environments which are culturally and linguistically appropriate, and they do so by discussing considerations specific to cultural appropriateness firstly and considerations specific to linguistic appropriateness secondly.

There will be areas of obvious overlap and elements of similarity in these two approaches. However, there is evidence that certain ethnic groups have cultural features that predispose them to certain communication preferences, independent of the linguistic features of their language. There are certain generalizations that can be made about the communication preferences of members of ethnic groups, which are better delineated according to their ethnic origins (and thus their cultural affiliations), and other generalizations that can be made regarding multilingual web design, which do not consider cultural specificity, but rather focus on multilingual accessibility and design strategies and practices.

4.5.1 Cultural Considerations in Web Design

Website design involves "a specific set of instrumental or technical, economic, social, aesthetic, and symbolic attributes or qualities of a website that contribute to its users' satisfaction, which in turn depends on the users' cultural habits and values" (Hermeking, 2000). "A culturally well designed website may be defined as communicating the right information at the right place with the right layout in the right manner and in the right time according to the culture of each of its users" (Hermeking, 2005).

For researchers in the fields of anthropology, communications, and business, Edward T. Hall's concept of "high context" and "low context" cultures and languages is widely acknowledged as being the basis for understanding and ensuring effectiveness in intercultural interactions. Hall's (1976) basic premise is as follows:

> High context transactions feature pre-programmed information that is in the receiver and in the setting, with only minimal information in the transmitted message. Low context transactions are the reverse. Most of the information must be in the transmitted message in order to make up for what is missing in the context.

What this means is that in cultures that are considered to be "high context," paraverbal cues such as tone of voice, the use of silence or the pace of speech; nonverbal cues such as body language, postures, gestures, and facial expressions; and metaphors and implicit messages are of importance to the meaning of the verbal message. In low context languages, on the other hand, speech is more direct than indirect and the majority of the important information in a verbal communication can be transmitted by the words themselves. This does not imply, of course, that

body language is completely meaningless in low context cultures, but only that the verbal portion of the communication can still have a clear, complete, and explicit meaning in the absence of the complementary tone, body language, facial expression, etc.

Hofstede (1991) theorizes that high individualism is very often connected to "low-context" communication, whereas collectivism very often is connected to "high-context" communication.

Thought patterns are another key component of intercultural communication. Thought patterns "refer to forms of reasoning and approaches to problem solution and can differ from culture to culture" (Choe, 2001, cited in Würtz, 2005). According to Würtz (2005), while low context cultures "tend to emphasize logic and rationality, based on the belief that there is always an objective truth that can be reached through linear processes of discovery," high context cultures tend to believe "that truth will manifest itself through non-linear discovery processes and without having to employ rationality."

Table 5: Features of High and Low Context Communication Styles

High and Low Context Communication Styles	
High Context	**Low Context**
Explicit	Implicit
Verbal	Facial expressions, use of silence, tones of voice, body language, non verbal and paraverbal cues
Textual	Situational
High individualism	High Collectivism
Linear reasoning	Non-linear discovery

This theory of difference in communication styles becomes very important in the context of multilingual web design, and especially in a field such as public legal education and information, because of the necessity to establish a relationship of trust, respect, and authority between the client and the PLEI organization or service worker. In order for a member of a high context culture to feel comfortable, to trust the information and its source, and to grasp the full meaning of the information, that information will have to be presented to them in a manner that addresses these more complex communication needs.

As Ahmed, Mouratidis, and Preston (2009) point out, until very recently the majority of study in the area of web design have focused on low context cultures such as "Western and North American," while "disregarding possible cultural discrepancies." Very little attention has been paid to the consideration of culturally-determined communication styles.

Given that the norm in the web environment is to communicate in a manner that is considered "high in content and low in context," i.e., mostly through text, standard North American practices in web design may create problematic spaces for communication of information to members of higher context cultures. Whereas for low context cultures, written communication can provide all of the necessary information, in high context cultures, more information may be required. Figure 2 illustrates the communication preferences of a sample of world cultures.

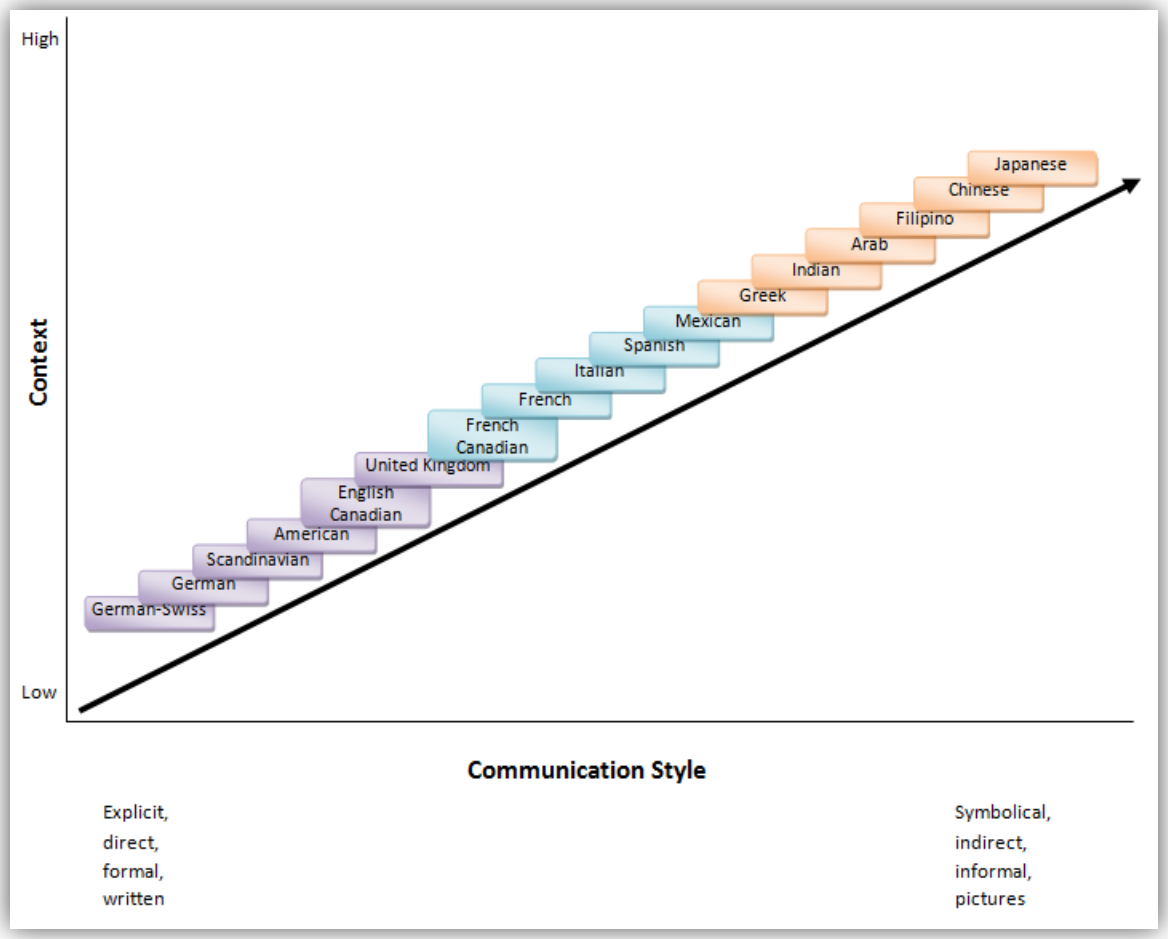


Figure 2: Content/Context Communication Preferences
(Adapted from Hermeking (2005))

Table 6, below, illustrates the source countries of all reported immigrants to B.C. in 2008. Given that the majority of immigrants represented here come from higher context cultures than English-Canadian or French-Canadian cultures, it is clear that high context communication preferences should be taken into account in serving these populations and especially when serving them in an online environment.

Table 6: Adapted From BC Stats, 2008

Immigrant Landings to B.C. – January to December, 2008			
	Vancouver Area	**Rest of B.C.**	**Total**
Europe	4,147	1,589	5,736
Africa	893	208	1,101
Asia	30,051	1,839	31,890
China-Mainland	9,595	319	9,914
India	5,134	350	5,484
Taiwan	2015	70	2,085
Hong Kong	530	20	550
Australasia	402	186	588
N & C America	2,330	1,011	3,341
U.S.A.	1,765	892	2,657
Caribbean	160	53	213
South America	622	106	728
Oceania	296	15	311
Not Stated	72	12	84
All Areas	38,973	5,019	43,992

It is easy to extrapolate from the contextual preferences in face-to-face communications and to apply the theory of contextual communication to the online environment. In order to replicate non-verbal and paraverbal cues, for example, textual information might be supplemented by images, videos, or interactive elements. In a study of websites in high and low context cultures, Würtz (2003) made the following observations:

> "[...] there is evidence that HC [high context] websites are more likely to use images to convey information, in contrast to LC [low context] websites. This is most evident with relation to navigation elements. For example, links to other pages on the Japanese website were represented by images instead of text, in contrast to the Scandinavian websites which were more likely to opt for text rather than images to guide the visitor of the site. [...] There is a tendency for the values expressed in imagery to be consistent with those prevailing in the culture of the countries."

Würtz also found that animation was used more often in websites of high context cultures; she also found that there were differences in navigation on the websites, which correspond to the

linear and non-linear nature of the thought patterns of members of high context and low context cultures. Hermeking's finding support this:

> High-context cultures often [present] text-limited layouts including more colored [sic] backgrounds, larger pictures, and a much higher rate of animated illustrations or moving visuals in particular. Multimodality tends to be somewhat higher in High-context cultures, including jingles or occasional options for downloads of video or radio interviews, for example.

Since high context cultures also use more non-linear patterns of reasoning, and are accustomed to a slower speed of information presentation, this may affect web design in terms of page navigability. For example, Würtz found that websites from higher context cultures used more sidebars, menus, and windows than pages from lower context culture did. These elements offer more entry points into the site, and more paths to the information sought, supporting the high context preference for more non-linear navigation. She also found that low context sites presented much more textual information initially, whereas high context sites might use mouse-overs to reveal text. Again, this is evidence for the preference of image over text. Further, as Hermeking finds in his similar study, in high context webpage design, "explicit navigation support is rare since neither a strictly ordered route through the less detailed site structure nor very quick orientation is necessary. Implicit symbolic cues, however, support an intuitive navigation."

Table 7, below, summarizes Würtz's observations.

Table 7: Summary of Würtz's Observations

Parameter	Tendency in High Context Cultures	Tendency in Low Context Cultures
Animation	High use of animation, especially in connection with images of moving people	Lower use of animation, mainly reserved for highlighting effects e.g., of text
Promotion of values	Images promote values characteristic of collectivist societies	Images promote values characteristic of individualistic societies
Level of transparency	Links promote an exploratory approach to navigation on the website; process-oriented	Clear and redundant cues in connection with navigation on the website; goal-oriented
Linear vs. parallel navigation on the website	Many sidebars and menus, opening of new browser windows for each new page	Few sidebars and menus, constant opening in same browser window

4.5.2 Linguistic Considerations in Web Design

This section discusses the most effective means of representation of key government information online, for individuals whose first language is not English or French. Importantly, it must be noted that there are, broadly, two primary means of accessing online information among individuals whose first language is other than English or French (Vicnet 2007):

- **Direct access**: an individual can locate information independently because all text and links to information are in the required language.

- **Mediated access**: translated information is contained within an English or French language website, usually in PDF format, and a person with sufficient English or French literacy is required to navigate information on behalf of a community member.

Although in most contexts, providing direct access to information is preferable to providing mediated access, for the obvious reason that no intermediary is required and the individual user is able to access information in their language of choice, in terms of the distribution of PLEI and other integral information to immigrants, it has been shown repeatedly in the literature that "whether materials are published in print or online, word of mouth and/or face-to-face support make a big difference to client outcomes" (Legal Services Society 2007, p. 22).

Thus, mediated access certainly plays an important role in the distribution of this category of information to this community, and is therefore a preferred method of presentation and distribution.

The Council of Australian State Libraries Working Group on Electronic Multicultural Library Services (2004) delineates five website models that they describe as being commonly used for multilingual websites. Other than the language level model, these involve various combinations of presentation of information in English (or French) as well as in other languages, and therefore represent various levels of mediated access. They are as follows (pp. 25-26):

> **1. Resource level model**
> The web site is organized into a series of narrowing topics and subtopics. All site navigation is in a monolingual environment. When you finally drill down to a specific resource, you are presented with all the available translations of the resource. This model requires a high level of English (or French) literacy and is best suited for mediated access to the resources.
>
> **2. Language level model**
> The web site is organized by language. You drill down through a series of topics and subtopics in the target language, until finally you access the required resource in the language. Language level access is a model suitable for people with low English or French literacy skills (assuming they are literate in their own language).
>
> **3. Dual access model**
> The site structure is based on the resources level model, coupled with language specific site indices or a search mechanism. This allows a person accessing the site to search in their own language for resources in their language.

4. Harvested portal model
An alternative model would be to use bilingual metadata standards and harvesting protocols to harvest metadata from a number of government departments or agencies by a central multilingual portal. It would be possible to dynamically [generate] a browseable directory of resources or provide a multilingual search interface to the metadata, allowing the end user to locate resources in their languages across a number of government websites.

5. Bilingual model
At the top most level of the site's directory structure, [one] is able to select [one's] target language. [One can] then drill down through a series of narrowing topics. Information at each level is bilingual (in the target language and the dominant language). This model facilitates both mediated and direct access to the resources.

6. Parallel model
This model combines the resource and language models. It is possible to navigate to a resource using any of the language interfaces, then move from that resource across to the same resource in an alternate language. The parallel model is the most resource intensive model to develop, since all web pages and resources need to be translated into all languages supported by the web site. It facilitates both mediated and direct access.

The current reality of the online provision of translated government information is that government departments and agencies use mediated access and resource level models. This prevents clients with limited English skills from accessing the information directly (Council of Australian State Libraries Working Group on Electronic Multicultural Library Services, 2004).

Clearly, the parallel model has distinct advantages over several of the other models, though it does require significantly more resources to build and to maintain.

4.5.3Barriers to Direct Access

In a study undertaken in 2007 by the Victorian Government, the objective of which was "to analyse current practice and make recommendations for improved provision of multilingual web-based government information" (p.4), the researchers found that there were a number of barriers to providing direct access to multilingual government information online. In order to enable direct access to multilingual information by users in culturally and linguistically diverse (CALD) communities, that information must not only be "signposted" in the community language (meaning that any navigational markers on the site that lead to the information sought must be in the language of choice), but must also be searchable, accessible, and easily navigable.

Limitations of Content Management Systems

An important consideration in the presentation of multilanguage information on the web is the ability of the content management system (CMS) to handle websites in multiple languages and to process characters that are not included in the standard ASCII (Latin alphabet) character map. In order to be multilanguage compatible, the CMS must support Unicode Transformation Format (UTF) schemes, which are character encoding schemes that are capable of representing any

character in the Unicode standard (any character in most of the world's writing systems). Although most modern CMSs are designed to handle Unicode, the report nonetheless highlights this as a concern—and it is one that governments should consider in developing websites which will distribute multilingual information. A CMS may also fail to provide for the possibility of complex scripts, such as right-to-left scripts. One result of using a CMS with too many limitations is that PDF format is often used as a fallback solution. However, because of its increased discoverability and accessibility, HTML is highly preferable for the presentation of multilingual material. There are also a number of reasons, beside the limitations of CMS software, that the use of PDF format is so prevalent. These are discussed below, along with more information about the limitations of the use of PDF format to present multilingual information.

Limitations of PDF Format

Using HTML format to present multilingual information is preferable to using PDF format because HTML-encoded text can often be located more quickly and easily than a PDF file, and can also be easier to read on-screen (Vicnet 2007, p. 52). Some of the reasons that the use of PDF is so widespread are:

- PDF is seen as a relatively easy and universal format to distribute documents for downloading and printing;
- PDF is seen as a common and familiar document format used by target groups;
- PDF is a good format for official regulatory forms; and
- PDF is seen by many as a preferred format for representing complex script languages, in order to limit the risk of accidental corruption of the translated text (Vicnet 2007, p.43).

There are several important limitations to the use of PDF format for multilanguage information (Vicnet, 2007 p. 44):

- PDF files are high-resolution files created to be suitable for commercial printing. This is not optimal for reading on a computer screen and, when in full colour, is costly for an individual to print on a home printer.
- PDF files are often large files which take a long time to download for users with low bandwidth and dial up internet connections.
- Use of PDF files is dependent on the user having a copy of Adobe® Reader®.
- PDF files that contain text in form of an image sometimes are not tagged with metadata, which means that the information contained within them is not searchable.
- PDF files are often buried within the website without navigational signposts to locate them.
- PDF files sometimes are not generated in an accessible format. For example, people with a visual impairment would not be able to view text with a screen reader or a basic text-enlarging application.

Technical Barriers

A number of technical barriers to direct access exist. These include barriers related to the discoverability (or searchability) of the information, as well as barriers related to the navigability of the site in the chosen language. Barriers to discoverability include a lack of metadata, and metadata being provided only in English. Being unable to search the site using keywords in the

chosen language is a clear barrier to access. Lack of multilingual metadata will also prevent the site from appearing in the search results provided by search engines such as Google. This is strongly correlated to one of the most-often cited barriers to the provision of PLEI information in general—that there is a multitude of information available, but that those who seek it do not know where or how to find it (see, for example, Chivhanga, 2005).

Barriers to navigability include the use of English language signposts, descriptions, or document titles, and also the absence of multilingual navigation options from the front page of a website. The need to navigate—in English—to another page of the site in order to locate multilingual content is a clear barrier to direct access.

4.5.4 Solutions

CMS

In addition to ensuring that they are using a CMS that is capable of handling websites in multiple languages and UTF encoding schemes, an organization should also ensure that the staff uploading information to the CMS are properly trained in the use of UTF encoded content to provide multilingual information. The Worldwide Web Consortium (W3C) Internationalization Activity has developed a number of resources that can aid in this training. Organization-wide web standards should also be developed or updated to ensure that there is a consistent and understandable approach to supplying content in languages other than English (these standards would include the recommendations offered in the sections below).

PDF

As has been noted in the introductory portion of section 4.5.2, the current reality is that most integral information is presented in a resource model scenario, usually with translated information offered in the form of PDF documents. While section 4.5.3 outlined some of the barriers to the use of PDF documents, these barriers are easily overcome through ensuring that a few simple steps are followed in the creation and presentation of the PDF files.

PDF files can be used in some instances, and with some considerations given. It is possible to overcome some of the barriers to the use of PDF mentioned above, simply by "creating them in an accessible and more usercentric format" (Vicnet 2007, pp. 44-5):

- When intended for web use, the file size needs to be as small as possible, allowing it to be quickly downloaded.
- When intended for end-user printing it is preferable for PDF files to be in black and white.

- Computer screens are low-resolution devices, therefore, it is practical to regenerate the PDF in order to create a small, low-resolution version.[3]
- It is possible to create accessible PDF files that will work with screen readers and other adaptive devices, or which can be converted to alternative formats such as plain text or HTML.
- When appropriately tagged with metadata, a PDF file can be located through a key word search.

According to the Victorian study, "PDF files are most suited for situations where information is to be printed." Just as when PDF files are used to distribute information in English, preliminary information and navigation should be in the chosen language, in HTML format, and easy to read on the computer screen, "so that the user experience [of multilanguage users] is not limited to a list of links to PDF files" (Vicnet 2007, p. 44).

This is an important consideration, given that, as has been noted earlier, the web environment should be one that engenders trust, shows respect of the clients' needs and situation, and illustrates the authority of the information presented. The user experience in the multilanguage areas of the website should be as inviting and as user-friendly as possible, and should match the English or French pages in terms of carefulness of design and thoughtfulness of presentation. To be most effective, where necessary, page design will follow the suggestions made in section 4.5.1 regarding information presentation preferences of high context cultural groups.

Discoverability

In order to facilitate the discoverability of information through search functions within the website or through searching using a search engine (such as Google), documents and content must be tagged with metadata or contain a sufficient amount of textual content to allow a full-text search. Further, the metadata should be supplied both in English and in the community language. This facilitates searches by keywords in the chosen language. The Victorian research study found that keyword searches in community languages were very common among seekers of information—both community users and service providers.

Navigation

Links from English pages to information presented in community languages should be offered in both languages. Symbolic images meant to represent multilingual information may also be helpful. It is strongly recommended in much of the literature, however, that flags not be used to represent language options, due to the fact that several national groups may share a common language. Document titles should also be presented in the community language. Signposting only in English leads to the need for an interlocutor in order to locate the multilingual information.

[3] It should be noted that this is only relevant when the text in the PDF is contained in an image, which should be avoided whenever possible (discoverability, file size etc.)

Further, a website navigation mechanism permitting navigation from the home page to multilingual content enables immediate and independent access by users, in their own language.

4.5.5Overcoming Literacy Challenges in a Web Context

The concern that some immigrant service users may not have sufficient literacy in either a Canadian official language or the language of their source country to be able to use and understand text materials has been mentioned several times in this Scoping Review. The following section details available research into the creation of electronic materials that facilitate the provision of information to semi-literate and illiterate users.

The use of video to replace or supplement textual educational resources is a common practice in a TEFL context and in other situations of low literacy. Video and audio sources can also be used in the web environment to replace or to supplement textual information. There are only a relatively small number of publically available resources that document research regarding the use of video and/or audio in a web context to address literacy challenges; the available research agrees, however, not only that video and audio are feasible alternatives to textual information for the non- or semi-literate audience, but also that their use in an electronic environment can have significant advantages for vulnerable populations.

Sherwani, Ali, Rosé and Rosenfeld (2009), drawing on the work of Walter Ong, suggest that cultures and individuals who rely on oral rather than written communications have different methods of thinking and learning, as well as communicating. They conclude that "information designed for literate users—virtually all written material—is not appropriate for oral consumption. Oral and literate users require content with different organization, presentation, and context." They outline several principles for the provision of information to oral users in an electronic environment, based on their study of the differences in perception and consumption of information among oral users and literate users. This list is provided along with short, verbatim descriptions taken from the research:

- **Information needs to be rooted in common experience with specific examples:** Ideally, new information should be described in terms of familiar cultural memes, and preferably using the culture's own oral formulae. Thus, instead of using a generic "mother," the information should draw on existing characters—perhaps a widely known maternal character in this case—in the community's folklore.

- **Narrative stories are more memorable and more effective at conveying information than neutrally listed bullet points:** Listing bullet points of information, such as how to improve cow yield, will not work as well as telling the story of a farmer who used a specific method and how he was able to increase his yield (Gandhi et al., 2007).

- **Rhythm aids recall:** Content with rhyme and alliteration is likely to be both understood and remembered by oral users more effectively than prose.

- **Linguistic style should be structured additively, not hierarchically:** While it is common in literate material, using subordinative conjunctions such as "while," "then," "since," and "although" is uncommon in oral users' communication. Complicated

sentence structures impose a cognitive load on the user. Instead, it is preferable to use coordinating conjunctions, such as "and," "or," and "so," which do not create hierarchy.

- **Redundancy needs to be embedded in the content:** Redundancy is an important part of oral communication, mainly because of the ephemeral nature of speech. The user should also be given ample opportunity to request repeated presentations of content that has been given before. It should be noted, however, that explicitly requesting repetition may be less natural for the oral user than having the correct amount of redundancy already embedded within the content.

- **Each and every word needs to be understood:** In an oral community that speaks one common language, there are no unfamiliar words, and oral users never face unknown words in daily life. Thus, even one unfamiliar word can confuse the user completely, and care should be taken to ensure that no such words exist in the system's content.

- **Abstract categories should be avoided:** Oral users do not categorize the same way as literate users, and do not think in terms of abstract categories (Luria, 1976). The use of categories should be minimized and if their use is essential, it should be kept in mind that the designer's choice of categories will most likely not match the expectations of the user. Also, hierarchies in information architecture should be avoided. Browsing multiple depths of information (e.g., as in a Web page, or when using navigation metaphors of "up a level") is difficult for oral users (Deo et al., 2004).

- **Requiring adherence to specific spoken words or phrases is less likely to succeed:** Oral users perceive speech as a continuous stream, rather than as discrete words.

- **Oral people do not internalize new information the same way as literate people:** Since internalizing new information is comparatively expensive for oral people—they cannot offload their memory requirements onto the technology of writing—it appears that they are more selective when choosing whether to internalize new information.

- **Oral people give more importance to the source of information than literate people:** Writing establishes "context-free language" (Ong, 1982), where information is not linked to any particular source. For oral people, however, all information is social and traceable to a person.

Many of these principles repeat some of the principles that have already been discussed, such as the need for redundancy, and several of them also coincide with the other research into nonliterate populations, as discussed below.

Medhi and Toyama (n.d.; 2006; 2007) examined the use of full context video, audio, and imagery in instructing non-literate computer users in the use of PCs. The subjects in their study, in addition to being illiterate, were also uneducated and many were first-time users of computers. Though many immigrants to Canada who have literacy challenges will have had some experience with computers (if not extensive experience), and also a higher level of education

than the research subjects in this study, the results of the research are considered to be foundational for all future research on the subject of text-free user interface design to address literacy challenges. In Medhi and Toyama's participant research study, subjects living in Bangalore slums— many of whom had never had any interaction with computers—were asked to complete an information gathering task using several different versions of a user interface developed by Medhi and Toyama. Again, although the research here focuses on the design of a PC user interface, the findings are applicable to website design as well, in that the method of user interaction and the type of task being studied by Medhi and Toyama are extremely similar to an informational website environment.

The findings showed that several factors led to increased rates of success in finding information among illiterate and semi-literate users. These included the following (Medhi and Toyama, n.d.):

- A **full-context video** explaining the broader context of the application and how it works, in addition to instructional material about how to use the application;
- Liberal use of graphics and **imagery**; use of **static hand-drawn representations with voice annotations;**
- **Consistent "help"** icon on all screens;
- **No** use of **text (numbers are okay);**
- **Voice feedback** on all functional units; and
- Aggressive use of **mouse-over** functionality.

Further, Medhi, Patabandighe, and Toyama (n.d.) found that, of all visual forms of representation, "static, hand-drawn representations with voice annotations" were the most effective.

> In the case of real photographs, the extraneous detail in the background confused our subjects. Photographs and video were also prone to be interpreted as the literal instance of the photograph, rather than a general concept. In some cases this was favorable to the understanding of a graphic while in others, there was confusion created because of direct association. In the case of dynamic representations like video and animation, placing a context-laying activity that was unrelated to the principal action cue caused confusion amongst the subjects. Our main result was that static- hand drawn representations with voice annotations were the best understood among all the media. So, for example, in trying to portray the concept of "fever," an overly simplified iconic representation might be mistaken for anger (or hot-headedness) or a type of illness; a photograph, on the other hand, could be mistaken for Mr. Rao's case of typhoid from last year. A semi-abstracted image of a person with a moist cloth on her forehead, was more likely than either of the other options to be taken to represent "fever" as an abstract concept.

Recognizing that hand-drawn illustrations require skilled artists to render, Medhi, Patabandighe, and Toyama have also developed an innovative tool to create cartoon-like images from photographs. For detailed explanation of this tool and its features, see the article, available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.86.5995&rep=rep1&type=pdf.

Applying these principles regarding user interface development for users with literacy challenges, in careful combination with the other principles outlined in this document that address cultural and linguistic concerns will result in the creation of a website that is useable and understandable by all segments of the immigrant population, regardless of their language proficiency or literacy in a Canadian official language or in the dominant language or languages of their source country.

4.6 EXEMPLARY JURISDICTIONS AND SITES

4.6.1 The Development Gateway Foundation

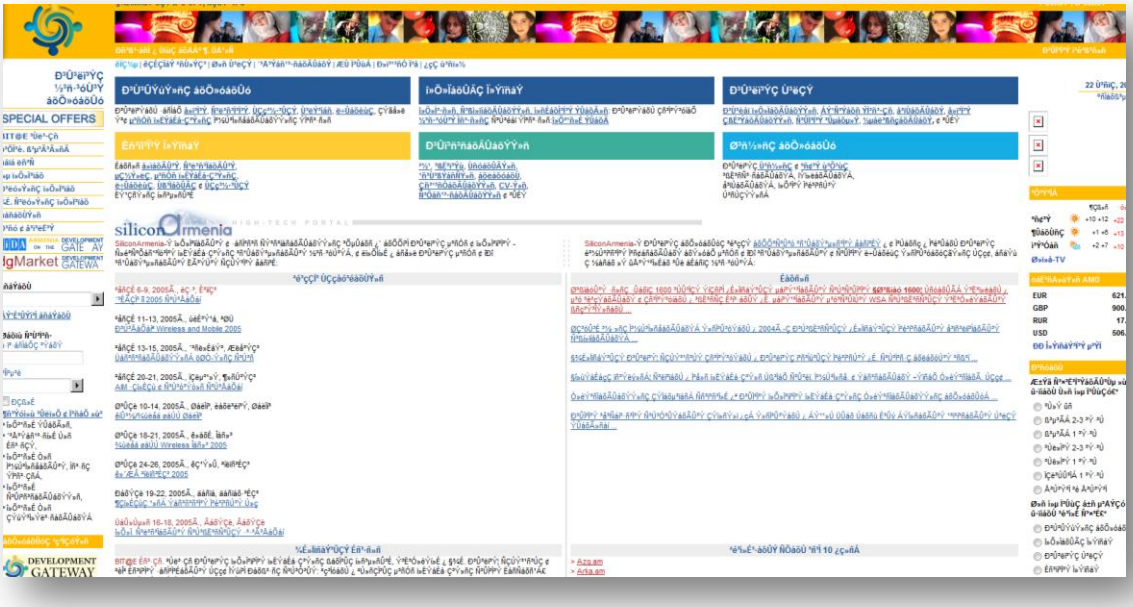
The Development Gateway Foundation is a nonprofit organization with the mission "to reduce poverty and enable change in developing nations through information technology." "To this end," according to their homepage, "Development Gateway Foundation provides Web-based platforms that make aid and development efforts more effective around the world." The various platforms, developed for country-specific audiences around the world, offer an interesting snapshot of the principles that are described throughout this Scoping Review, in practice. This section offers screenshots from several of the Development Gateway pages, with the goal of showing the contrasts in methods of presentation across culturally diverse audiences.

India

The India Gateway, represented in the series of screenshots above, is a strong example of a high context multilingual online information source for immigrants. Because it is an example of a

website created in a higher context culture, it is not surprising that it contains many of the elements discussed in section 4.5.1, which are preferred by high context cultures in a web environment. It serves as an illustrative example of these characteristics. It also incorporates networking capability and discussion forums, permits users to upload information, and makes use of a newsletter to provide updates, all of which are aspects of Web 2.0 functionality.

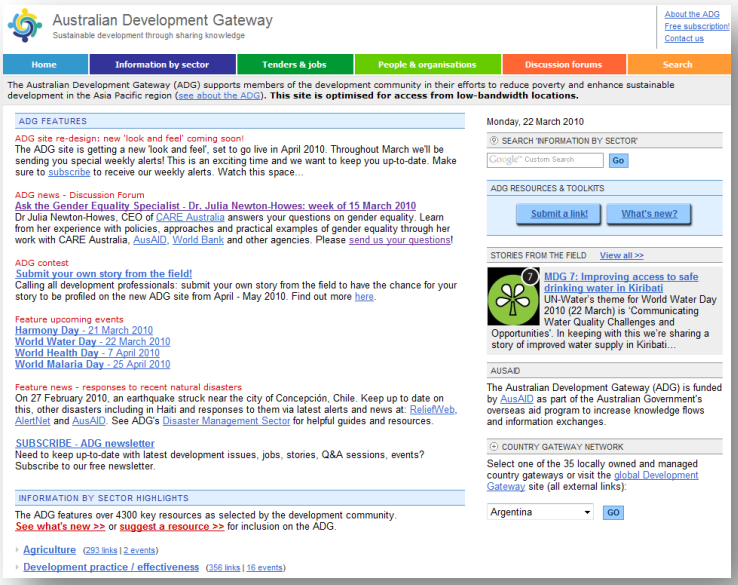
Armenia



Whereas the India Gateway makes extensive use of images, bright colours, and interactivity, the Armenian site is strongly reliant on text. The cultural differences in navigational preferences are also clear in the comparison of these two sites: whereas the India Gateway makes use of several layers of page navigation and permits users to arrive at the same page through multiple lines of navigation, the Armenian website is clearly based on a more linear navigation model. Armenian culture falls roughly in the middle of the continuum of high and low context cultures; on the graph represented by Figure 2, Armenian would appear in roughly the same position as French.

As such, we can see that there is still some use of imagery in order to create a sense of belonging, and to represent the cultural values of the site's users. This is in contrast, as we will see, to the Australian site, represented below.

Australia

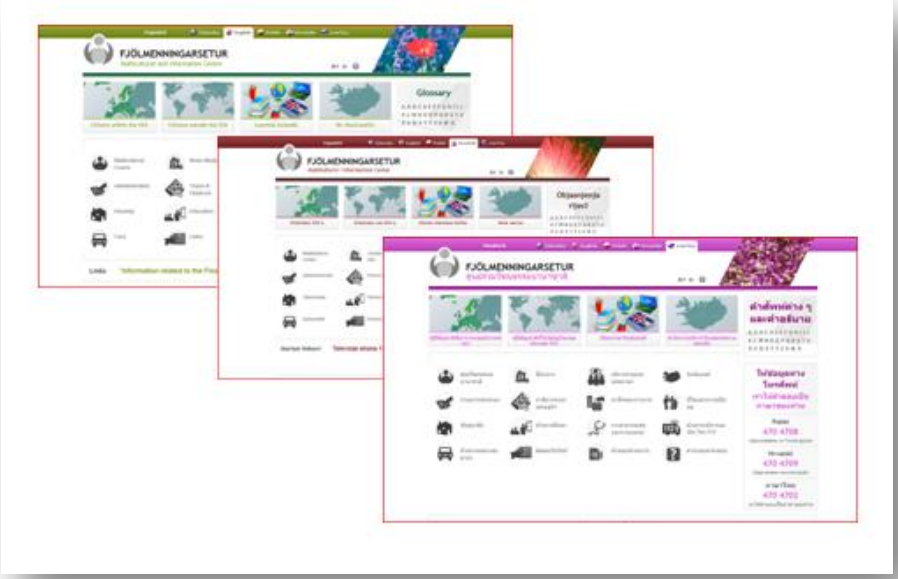


The Australia Development site is much more text-heavy than the India Development site, and, in contrast to the Armenian site, contains practically no graphical imagery. All site navigation is linear and based on text-based links from the homepage, which are represented in an organized fashion. The site is due to be updated with "a new look and feel" very soon—it may be interesting to revisit the site to see what changes are made and in what ways the new design acknowledges or differs from the principles of low context web design. The site permits user uploads and subscription to a newsletter, as well as user discussion.

These three sites offer a snapshot of the differences between informational sites that contain similar content, but which are designed with different audiences in mind.

4.6.2Government of Iceland

http://www.mcc.is



In 1996, the Icelandic government first passed legislation the aim of which was to position Iceland "in the forefront of the world's nations in the utilisation of information technology in the service of improved human existence and increased prosperity" (Iceland 2004). In 2004, the government introduced a more comprehensive e-governance strategy, titled "Resources to Serve Everyone," from which the government's multilingual online information strategy was developed. The current E governance strategy, "Iceland: The E Nation," which covers the period 2008-2012, indicates that one of the government's key measures of success will be the production of a set of guidelines for website content, which will emphasize the further inclusion of multilanguage online information.

Currently, a number of Icelandic government websites are available in languages other than Icelandic. The Multicultural and Information Centre website, represented in the series of screenshots above, is offered in Icelandic, English, Polish, Croatian, and Thai. It also has some limited information available in German, Portuguese, Vietnamese, Russian, Tagalog, Danish, and Lithuanian.

4.6.3Government of Finland

Finland's commitment to e-government first emerged in the 1990s and the country has been consistently using information and communications technology to enhance the nation's economic performance. It is also important to note that the majority of e-government strategies within Finland are developed and implemented within the much broader framework of public reform. The Ministry of Finance has the chief role of developing e-government policies and standards, and ensuring there is good cross-government coordination with respect to e-government initiatives (Organisation for Economic Co-operation and Development, 2003).

In 2008 the Ministry of Finance published the *"Quality criteria for web services"* which is designed to provide a practical tool for government agencies in the development of highly secure, easy-to-use, and completely accessible online services for the Finnish public. It should be noted that the five main criteria of "use," "content," "management," "production," and "benefits" are not legally binding, and serve as a series of guidelines and recommendations for public sector organizations wishing to create more efficient online services (Finland, 2008). Under the criterion of use, special attention is given to the issue of language, or more specifically it is recommended that online services match the particular linguistic needs of the target user group. The language selection function on webpages should be clear and easy-to-use, and language options should be located in the same place on every page (Finland, 2008).

http://www.infopankki.fi/

Infobank (Infopankki.fi) is a multilingual web service targeted at immigrants living in Finland as well as the authorities providing them with public services. The information on the website is available in 15 languages. The site contains basic information on everyday questions, including healthcare, social services, education, employment and links to other relevant websites offering comprehensive and complementary information. This national web service was launched in 2003, and receives approximately 50,000 visitors per month.

4.6.4EU-Imminent

http://www.eu-imminent.com/

EU-Imminent is included here despite its currently being under development, since, when it is completed, it will represent an excellent example of a multilingual online information source for immigrants, which will make significant use of Web 2.0 and social networking functions. EU-Imminent has been under development since late 2008, and is being constantly updated. An evaluation of lessons learned in the development phase is expected in October 2010. The site will feature—in addition to a comprehensive online course in developing a business in the EU—videos; audio podcasts; news and library resources; an ezine; and a networking feature that will allow site users to interact with other immigrants who are also developing their own small businesses. The videos and podcasts will feature immigrant entrepreneurs who will discuss their real-life experiences.

"Individuals from immigrant communities often face other barriers to mainstream business development through lack of language skills, unfamiliarity with institutional frameworks and absence of clear and targeted guidance. Targeted business support, especially in dynamic areas such as entrepreneurship is essential, if immigrants are to fulfil their potential as individuals and as contributors to economic growth and social stability" (Grove-White, 2010). EU Imminent will take a targeted and needs-specific approach to providing relevant and necessary information to their audience, in several EU languages.

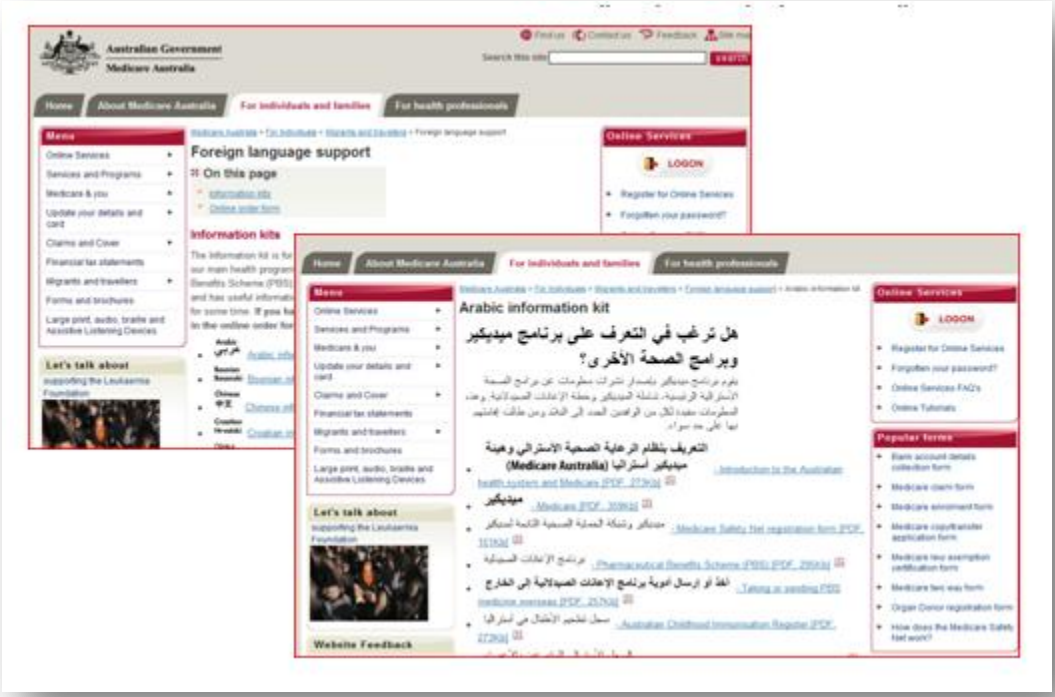
4.6.5Government of Australia

A growing number of government websites in Australia contain multilingual content largely due to governments' commitment to making more information and services available to the Australian public. As of 2007 for example there were over 60 instances of multilingual content on government websites in the State of Victoria. It should also be noted however, that despite the

increase in multilingual content in Victoria, close to 70% of websites with multilingual content require individuals with strong English literacy skills to locate the translated information (Vicnet, 2007).

Multilingual health information appears to be particularly popular upon the majority of Australian state governments, as Queensland and New South Wales provide substantial amounts of translated health information to the public. In New South Wales for example there is a government policy mandating the provision of multilingual health information for individuals from culturally and linguistically diverse backgrounds. The policy seems be a response to some of the stipulations outlined in the *Ethnic Affairs Commission Act*, which essentially outlines the State's commitment to ensuring individuals from culturally and linguistically diverse backgrounds have the best socio-economic outcomes possible (Government of New South Wales, 2005).

http://www.medicareaustralia.gov.au/public/migrants/language/index.jsp



http://www.mhcs.health.nsw.gov.au/publicationsandresources/audioandvideo/audiovideo.asp

4.6.6The United States Centre for Disease Control

http://www.cdc.gov/other/languages/

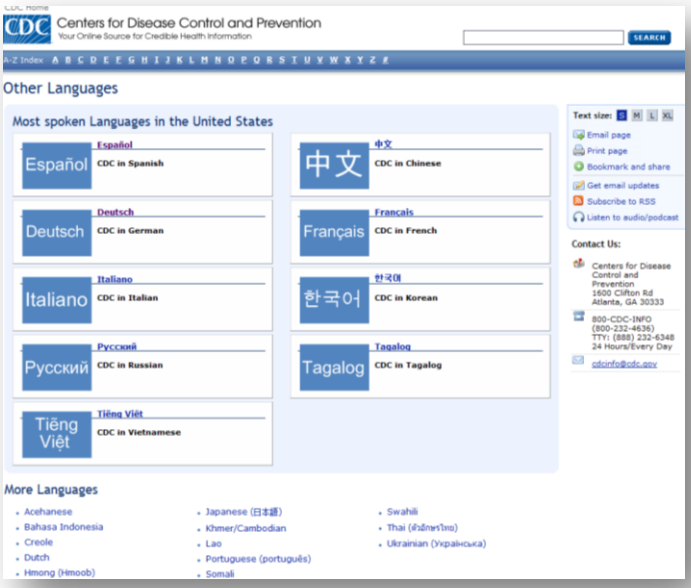
The CDC provides health information in a number of languages, including via podcast; currently they are featuring a number of audio resources in Haitian Creole.

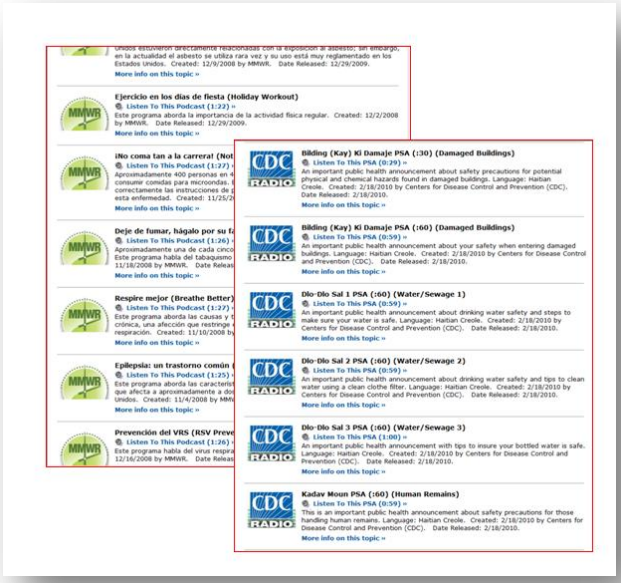
According to their website, the CDC strives to spread health and safety promotion and prevention messages to US immigrants and visitors, representing many cultures, in their own language when possible.

The CDC translates health resources into over 75 languages, including the top 50 most spoken in the U.S. Publications are predominantly provided in French, Chinese, Vietnamese, Korean, Tagalog, Italian, Russian and German. CDC brochures, posters, slide presentations, and Web pages on topics such as influenza, handwashing tips, *E. coli*, SARS, West Nile virus, and noroviruses on cruise ships have been translated into different languages.

Providing translation services is a key component of CDC's overall emergency response system. Translators provide culturally-specific, plain-language messages during emergencies and disasters.

The languages for the translation of emergency messages are selected according to the population affected. Translated messages are frequently distributed to specific groups such as emergency responders, healthcare providers, and public health professionals as well as to the general public.





4.6.7Government of UK

In March 2005, the United Kingdom Cabinet Office published a document outlining the national government's technical policies and standards for ICT interoperability across the public sector. All government organizations must adhere to the polices and standards contained within this framework to assist with the government's broader e-government strategy of providing better and more efficient public services (United Kingdom, 2005). Section 2.23 of this framework states that government information systems must comply with all relevant UK legislation and that all e-services must be completely accessible to people with disabilities, members of ethnic

minorities, and any other individuals who may experience digital and social exclusion (United Kingdom, 2005).

"Delivering Inclusive Websites" is another document published by the UK government on the issue of e-government and e-inclusion. Although the primary purpose of this document is to assist public sector websites in fulfilling the accessibility requirements outlined in the Disability Discrimination Act of 2005, there is also some reference to ensuring public sector websites are as accessible as possible to non-English speaking users. Section 69, for example, details the importance of including speech enablement technology within public sector websites to better serve individuals with learning disabilities and individuals with low English proficiency (United Kingdom, 2009).

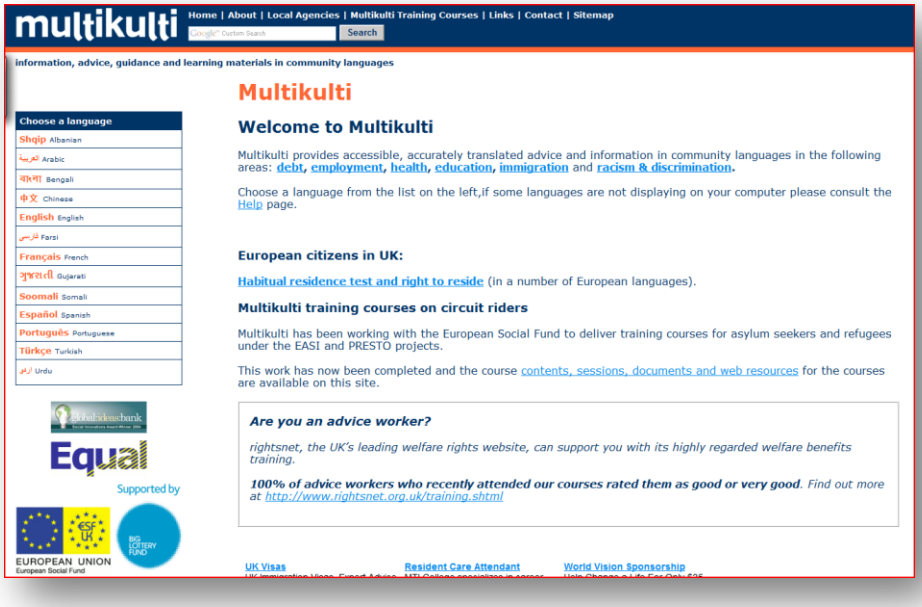
Multilingual government websites are addressed specifically in *"Guidelines for Government Websites: Illustrated Handbook for Web Management Teams"*. In Section 2.7 (Use of Other Languages) the document notes the importance of presenting online information in all appropriate languages as this will ensure information is distributed to the largest number of individuals possible. The document also states that the provision of multilingual online resources is also critical as it can help prevent certain groups of people from being unable to access important information due to linguistic barriers (United Kingdom, 2004).

In spite of this focus on multilingual online information provision in the policy literature, and despite the fact that the UK continues to support a general policy of web accessibility, in compliance with the W3C protocols for both language and disability accessibility, the researchers were unable to locate any government information online in languages other than English and Welsh.

There are, however, a number of private and nonprofit organizations in the UK that provide services to immigrants, and which do so in multiple languages. Some of these are profiled below.

4.6.8Multikulti.org.uk

http://www.multikulti.org.uk/



The Multikulti website project is managed by the London Service Alliance in cooperation with a number of stakeholders including the Multikulti Editorial and User Group and community translators. The goal of the project is to provide reliable and easily accessible information in the following twelve languages: Albanian, Arabic, Bengali, Chinese, Farsi, French, Gujerati, Portuguese, Somali, Spanish, Turkish and Urdu. The site includes translated information on the subjects of debt, employment, health, education, immigration, and issues regarding racism and discrimination. At present, Multikulti is working on developing more information materials on the subjects of immigration, health, and racism.

4.6.9The Refugee Council

http://languages.refugeecouncil.org.uk/

The Refugee Council website is an example of a "dual access model" and provides information on the asylum and refugee process in a number of languages including Arabic, Chinese, Dari, Russian, Tamil, Turkish and Vietnamese. Users are able to access information in their native language by clicking on the appropriate language on the homepage. The list of languages available is provided in both English and the user's language of choice. Information is provided in fully searchable PDF format, and signposted both in the chosen language and in English. Though it uses a text-heavy, linearly navigated approach (thus privileging a lower-context audience in terms of site navigation), this site is an outstanding example of an information resource that meets the needs of both individual community users and service workers who may be called upon to facilitate access to this information. The site contains a vast amount of useful information, appears to be well translated, and is clear, easy-to-use, and welcoming.

4.7 EMERGING AND FUTURE TRENDS

Governments worldwide are increasingly making use of social media tools such as Facebook, Twitter and YouTube to increase citizen engagement levels (Australian Government Information Management Office, 2009; Commonwealth of New Zealand, 2007; UK Cabinet Office, 2010). In the United States, the Obama Administration has been especially vigorous in its attempt to harness social media to engage citizens and enhance political participation, and currently hosts a set of very popular Web 2.0 tools such as a YouTube channel, Twitter feed, and Facebook page. In the UK, eGovernment initiatives have also concentrated on utilizing social media:

Through daily updates to social media networks, governmental organizations can both provide current information and updates concerning policy development, legislative processes, and social and political issues and receive feedback and submissions from users who may not have pursued communicating with their government through more traditional means.

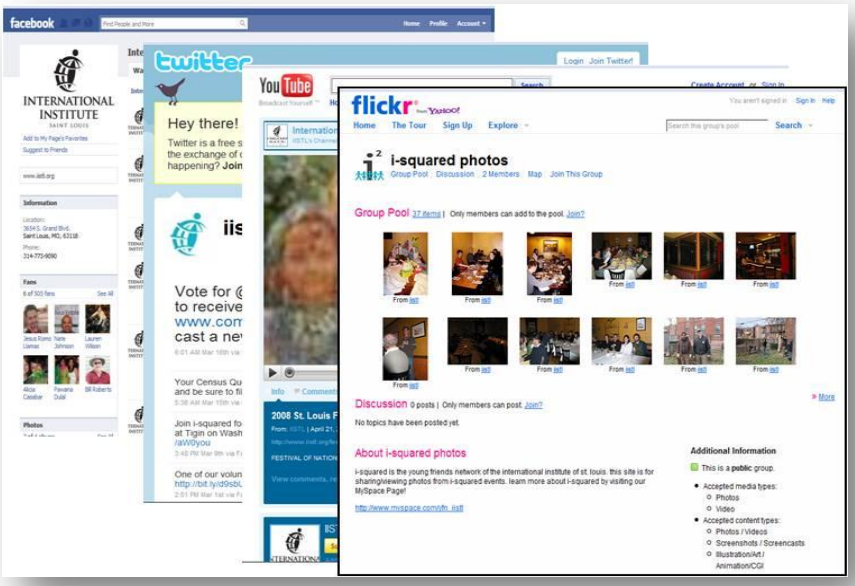
Although both the US and UK examples illustrate that social media tools and resources have become very popular means of linking citizens with their governments, social media tools have yet to be fully-developed as multilingual tools – while Facebook pages and Twitter feeds are available in many languages, currently there is no widely available translation tool integrated into either one capable of providing pre-existing content in more than one language automatically. In short, once a Twitter feed has been established in English, users either must read it in English or use a third-party translator tool to read it in another (such as the very popular Google Translate). Similarly, creators would have to publish multiple feeds using multiple accounts in order to make content available in more than one language. However, it should be noted that in many of the cases profiled below, blog posts and Facebook comments/posts designed for immigrant communities include user content in multiple languages, as many users are literate in multiple languages and post as such.

While a number of social media tools are currently being utilized by and for immigrant communities around the world, most have been created and are used in the context of social justice activism targeted at immigrant rights, especially in the United States. Blogs, YouTube channels, Twitter feeds, and Facebook pages targeted at immigrant communities are also often used by nonprofit and independent citizen groups and organizations to connect advocates of immigrant rights and immigrant legislative reform with each other and with other interested parties and stakeholders, but generally these resources and tools are not officially connected with specific governments. Some examples are pictured below:

4.7.1International Institute of Saint Louis

The International Institute of Saint Louis (IISTL) is a non-profit organisation that helps refugees and immigrants to independence by teaching English, finding jobs, and providing adjustment services to overcome language and cultural barriers. Since 1919, the Institute has been providing a broad array of social services for new Americans. Annually, more than 8,000 new Americans receive services at the Institute, and nearly 60,000 St. Louis residents benefit from the agency's outreach efforts (International Institute of St. Louis, 2009). Currently all pages on the main IISTL website are available in English, Spanish, Bosnian and Chinese through a translator tool integrated into its homepage:

As is shown in the figure below, IISTL utilizes a number of the most popular social networking tools in order to connect immigrants to the information and resources they need, including a Facebook page, Twitter feed, a YouTube channel, and a Flickr account. The website also includes a regularly-updated blog from which users can receive RSS feeds notifying them when a new post has been created. I-Squared, the Young Friends Network of the IISTL, organizes many community events targeted at immigrant youth in St. Louis, and many members are active on IISTL's Facebook page. Photographs and information about these and many other IISTL-sponsored events are also available on IISTL's Facebook page.

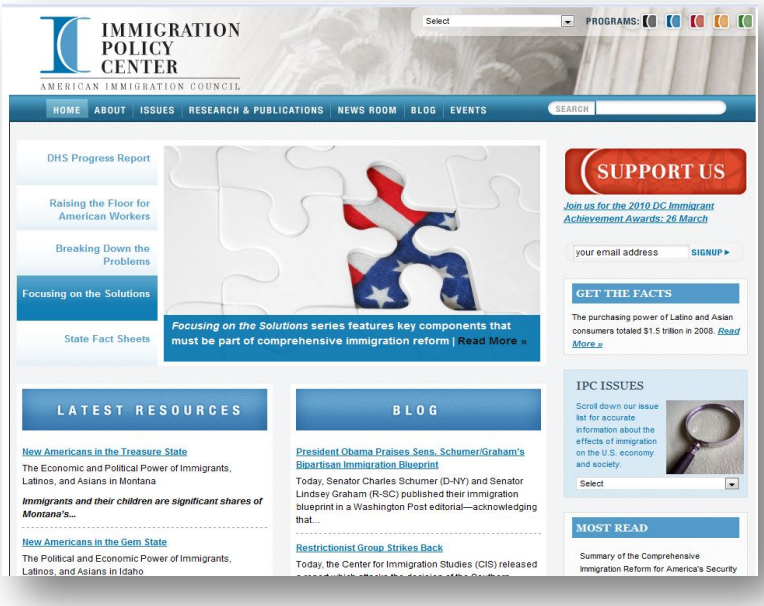


4.7.2Canadian Tamil Youth Alliance

According to its homepage, the Canadian Tamil Youth Alliance (CTYA) "is the largest combination of youth associations and groups nationwide with Tamil heritage, culture and language backgrounds. Together, through the alliance, we strive to educate and empower the youth in order to prepare them as transitional leaders of society" (Canadian Tamil Youth Alliance, 2010). The webpage functions as a central communications portal for members, and includes access to a blog, Facebook page, Twitter feed, and a LinkedIn profile, which are all designed to connect members of the Tamil youth community in Canada to each other and to the larger web community. The CTYA's Facebook pagecurrently has over 1,500 fans:

4.7.3Immigration Impact: The Immigration Policy Centre Blog

According to its homepage, the Immigration Policy Centre "is the research arm of the American Immigration Law Foundation (AILF). IPC was established in 2003 with the mission to provide policymakers, academics, the media, and the general public with access to accurate information about the effects of immigration on the U.S. economy and society. The IPC attracts nationally recognized scholars as research fellows and guest authors, and publishes timely reports on the role of immigrants and immigration policy."



As part of this mandate, the Centre publishes a blog that provides current information to readers concerning the developments of immigration policy in the United States, as well as information concerning anti-immigrant/immigration myths, economic issues surrounding immigration, and the current status of "illegal" immigration policy enforcement across the country. Users can subscribe to RSS feeds that inform them of new posts, new blog comments, or both.

The Immigration Policy Centre also maintains a Facebook page, which currently has just over 1,300 fans.

CONCLUSION

Importantly, it should be noted that available research into the use of the Internet and Web 2.0 technologies for the distribution of PLEI to immigrants indicates that to be most successful, internet information must be complemented by in person interaction, as well as the provision of non-internet informational and educational materials (CS/Resors Consulting Ltd., 2005). Thus although the use of internet and Web 2.0 technologies is emerging as a new and potentially effective trend in PLEI distribution, the importance of other media in distributing PLEI cannot be underestimated.

"Providing information," as Chivhanga (2005) points out, "is not an end in itself. It is a process that starts with defining the characteristics of the target audience, identifying their information needs, sourcing the content that will meet those needs, packaging the content in a language that the audience will understand, [and] delivering the information through an appropriate media platform."

This Scoping Review offers a snapshot of some relevant demographic characteristics of recent immigrants to B.C., in an attempt to relate the general concepts of information provision, web presentation, web design, and the use of web 2.0 and social media tools into the specific context of B.C.'s unique immigrant population.

Further, evaluations are an integral part of any information provision initiative, and are especially so in the context of immigrant communities. As the needs of the group change, the information provided must change with them. Since immigrants are a widely diverse group with diverse and individual needs, it is important to evaluate to what extent current programs are meeting their needs and in what way their needs may have changed. Further, it is important to be aware of how culturally appropriate the format of presentation is, as well as how useful the information presented. The research has shown that although many organizations are doing important work in the area of information provision, very few are performing evaluations.

This Scoping Review has endeavoured to show what the available evidence states regarding suitable methods of representation of online information to the majority of cultural groups that comprise B.C.'s immigrant population. It has also offered some acknowledged best practices in the field of multilingual web design more broadly. It addresses limitations in language and literacy, as well as specific cultural considerations. It has presented barriers to information provision, and potential solutions to these barriers. Further, it has supplied pertinent information about the use of new and emerging social media tools by government and immigrant-serving organizations.

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APPENDIX A – TOP INFORMATION NEEDS OF NEW IMMIGRANTS

Table 8: Adapted from Caidi, Allard, and Dechief, 2008

Top Information Needs of New Immigrants	
Top Settlement Needs	Top Non-Settlement Needs
language information (including information about training, translation, and interpretation services)	health information (including how to find a family doctor, treatment issues, information on condom use, needle sharing, AIDS information, and mental health information)
pre-migration information	employment information (including how to find employment, job training, how to write resume and cover letters, work safety, labour practices)
employment information (including job searching skills; special services to foreign trained professionals)	educational information (including literacy information, media literacy, GED information, scholarships and bursaries, career prospects, counselling, adult education, and continuing education)
housing information	political information and current events (especially news about the country of origin)
information about making connections in the community (including connections to professional associations, volunteer opportunities, mentoring, and community organizations)	language learning information (including information about ESL programs and materials)
information about the new culture and orientation to Canadian life" "	recreational information (including information about hobbies, entertainment and travel)
family support such as counselling and social services	information about transportation
education information	legal information
information about local institutions and services	information about identity construction (including how to position themselves vis-a-vis Canadian society)
information about obtaining essential documents (SIN and health card)	information about cultural or religious events

business information information provision in first language	computer help getting help with English (reading documents, correct pronunciation; translation) home repair tax/government information immigration information business opportunities banking information car/car repair information

APPENDIX B – THE BRITISH COLUMBIA PLEI CONTEXT

SOME BRITISH COLUMBIA PLEI WEBSITES

TRAC Tenant Resource & Advisory Centre

The Tenant Resource Advisory Centre (TRAC) is an educational charity that provides information about residential tenancy law in B.C. TRAC's website is a resource-level model that includes navigational signposts to print resources in multiple languages from its homepage. TRAC's website uses online video resources to provide information to illiterate and semi-literate individuals in sixteen languages other than English and French. The video content is based on the print materials also provided on the website. In addition to providing information to individuals with literacy challenges, then, the video resources also fulfill the function of positive redundancy for literate users; this repetition of information in multiple mediums (print and video) has been found to contribute strongly to the retention and understanding of information (see section 4.3).

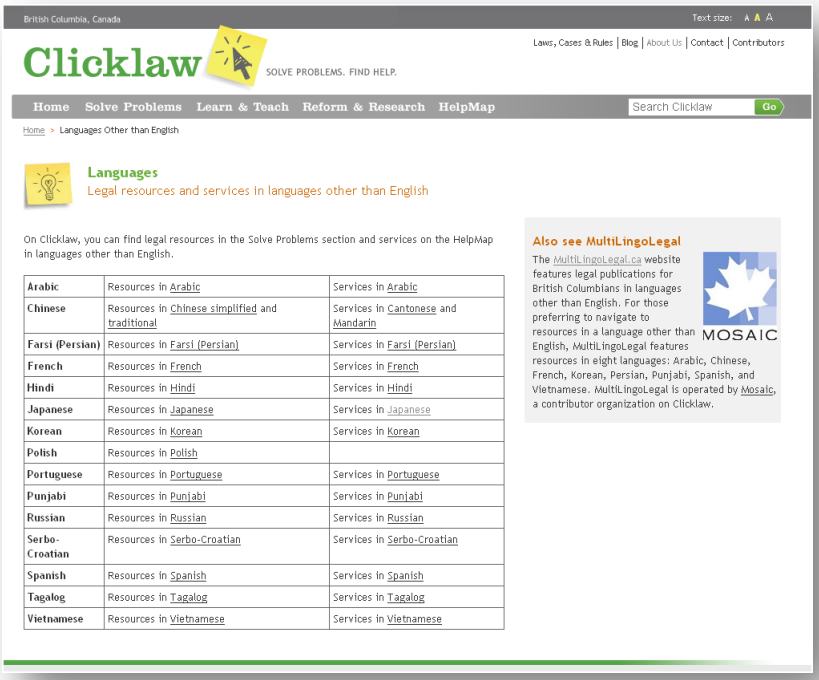
In dialogue with several local community organizations and settlement services, TRAC determined which language groups were most in need of video information, and ensured that

each of the identified language groups were represented in the videos they created. Funding from the Law Foundation of BC was essential in enabling TRAC to create these resources.

MultiLingolegal.ca

MultiLingoLegal.ca is “British Columbia’s online access to multilingual legal publications” (MultiLingoLegal.ca, n.d.). The site was developed by the Latin American Community Council and MOSAIC, in order to help address identified barriers to accessibility of Multilanguage information for newcomers to British Columbia. The site provides “comprehensive and critical legal information” in Spanish, Vietnamese, Chinese, Punjabi, Persian, Korean, and Arabic, as well as in English and French. The site presents as a language level model and provides a number of translated, printable resources in the identified languages. However, since items are signposted and searchable only in English, the site would be more correctly categorized as a resource level model.

Clicklaw



Clicklaw is a legal education and information website resource operated by Courthouse Libraries BC and sponsored by a number of British Columbia PLEI organizations. Clicklaw's mission is "to provide equitable access to quality legal information, education and help for British Columbians" (ClickLaw.bc.ca, 2010). Clicklaw provides information and education resources in fifteen languages, and is an example of a resource level model, best suited for mediated access and interaction with an English-speaking interlocutor.