HALINET 2005:

Open source and open for partnerships!

Brian Bell
Oakville Public Library/HALINET

February 2005

HALINET 2005: Open source and open for partnerships!

HALINET (HALton Information NETwork) is a consortium of the public libraries of Burlington, Halton Hills, Milton and Oakville and the educational institutions in the Region of Halton, just west of Toronto. This is a description of the various database-driven web services that have all been developed by the HALINET partners – many of which are available as open source code – or can be shared directly on the same server.

Member libraries work closely with a wide variety of community service organizations. We assist them in the creation and maintenance of their databases on shared servers donated by member organizations. The file for each organization contains records input according to templates custom designed for their data entry and information retrieval needs. The data is updated by the staff and volunteers for those agencies and not by the staff of the HALINET members, unless they are pertinent projects such as the Newspaper or local history indexes that are actually being maintained by the libraries.

In the past 5 years, a growing number of other libraries and community information centres throughout Canada and the United States have begun to use some of the software developed here in Halton. For example, a separate consortium, called the Community Information Online Consortium (with members from BC to New Brunswick) formed in early 2000 to carry on the development work on the Community Organization database that was developed originally by HALINET and HIP (the Halton Information Providers) partners. More recently, the Ontario Public Library Network (OPLN) has adopted the community newspaper and genealogical indexing module and will be distributing it for use by members throughout Ontario. Libraries, archives and historical societies in New York State, Illinois and Ohio have also begun to use the newspaper module.

Design approach
These applications have all been designed with a common, technically mature set of standards and assumptions that:

- library staff and other community groups and individuals should be able to input and maintain databases on their own authority directly over the Internet via Forms through a Web browser. The Data Entry and Management Tool allows authorized members of the community from diverse groups such as Community Information Centres, Genealogical Societies, Cultural Groups and Educational Agencies to simultaneously enter and update their own records in the shared databases over the Internet completely independently of library staff and each other. Agencies, such as the Community Information Centres, Chambers of Commerce, Social Planning Councils, archives, historical societies, etc. should be able, when appropriate, to maintain a database of authorized individuals who have clearance to maintain specific databases.
- the databases and scripts should be standards compliant and will eventually all be migrated from the MSsql/asp to the LAMP environment.
- where anonymous input directly from individuals is appropriate, (eg. for community events), designated agencies, such as the Chamber of Commerce will have authority and tools to validate the content of the entry and authorize it for public display.
- the overall design takes into account URL links among various community databases e.g. CIC directory records to volunteer opportunity records to individual organization pages.
- the role of HALINET is as an electronic publisher. We provide the suite of "do-it-yourself" tools for the community, and our growing number of partners further a field, to enter and maintain their own data. HALINET applications are designed to allow those organizations to store their data centrally on one or more servers and provide a common Web-based interface for the community.
- each participant has the ability to customize the look and feel of the 'view' that they present to their users allowing them to 'brand' the service as their own.

- members of the public can search for that information through a simple, Web browser interface. There is a unifying meta-search interface for the overall suite. The user is also presented with a "one place to look" interface incorporating Z39.50 and other customized search functions that allows the library to customize a drop down menu of subject and target options as well as an easy exit directly to the Internet. This interface serves, among other functions, to link traditional catalogue searches with the new web-based databases around the world.

Individual Halton Databases
The HALINET partners have created a large number of databases for a wide variety of formats including: photographs, atlases, maps, and pamphlets that libraries, historical societies, libraries, or museums may want to offer for display over the Internet. The services in this first group are special purpose database applications designed for use by a single agency working independently.

There is a growing database representing the collection of books, deeds, documents, photographs, memoirs, videos, maps and other items in the collection of the Milton Historical Society. This includes a complete set of digitized fire insurance maps from 1927. There is also a growing number of scanned images of maps from the Halton Historical Atlas and other map sources as well as a growing digital library of scanned local history texts which now includes over 200 pages. On-line versions of our local historical pamphlets, from Acton to Terra Cotta, were created by the Esquesing Society. Special Features from Historical Newspapers about communities in North Halton from the turn of the century were also created by the Esquesing Society along with reprints of full text Newspaper Articles Various articles from The British Whig, the Colonial Advocate, Guelph Advertiser, Streetsville Review, and the Daily Leader.

This Maritime History of the Great Lakes site is an ongoing experiment in the design of a digital library developed and maintained by Walter Lewis, an eminent Great Lakes Maritime historian, librarian at Halton Hills Public Library and software developer for HALINET. This service is an indexed collection of 1000s of manuscripts, maps, images, digitized books and full texts of value to those researching Great Lakes History - and is of importance at a national and international level.

As with the Maritime History of the Great Lakes mentioned above, the Empire Club of Canada Speeches Index and full text database has both a national and international perspective. Over many years, Gail Richardson, now a librarian at Oakville Public Library, worked as an independent MLS on contract with the Empire Club of Canada Foundation, to build an index to the speeches of this special collection, searchable by speaker, topic, keyword, and year of publication.

Other databases of interest to the local Halton community include, the directory of literacy providers, the Georgetown land records, and index to deeds, the Lorne Scots enrolment military record (containing nearly 10,000 entries), indexes to the census for Halton County (1842-1901), the Halton surrogate court Index (1855-1900), the Halton-Peel Ontario Genealogical Society cemetery index (containing over 12,000 surnames from 209 cemeteries), and Halton's historical nineteenth-century business directories

Shared Databases
For over a decade a goal of HALINET has been to provide more sophisticated, multi-user applications. This next section describes services that enable like types of organizations to work together to jointly maintain databases that they share in common. This has helped eliminate duplication of effort while providing the benefit of region-wide access through a single search. All applications are designed to ensure that searches can also be scoped to the individual municipality level.

The Halton Community Services Database service was developed in conjunction with the four Community Information Centres in Halton otherwise known as the Halton Information Providers (HIP). Particular care has been taken to provide WWW URL link fields that can point to the home pages of the various individual organizations, businesses and educational institutions listed in the various databases. The Community Information Centres in Halton now maintain a single master database describing not-for-profit organizations in Halton Region. The design is intended to allow other relevant databases, such as the Volunteers database, described below, to link back to these records to ensure that all data need only be gathered and maintained accurately once.

CIC managers are provided with the ability to manage their records in the database through a record maintenance module directly over the web. A special update feature allows members of the public to submit suggested changes and updates right over the World Wide Web directly to CIC staff. There is a record import/export interface that meets the Online Ontario standard.

This module contains a separate volunteer opportunity tracking service that was developed in conjunction with the Halton Social Planning Council Volunteer Centre. It is designed to build upon the organization records maintained in the separate Community Services Databases maintained by the Community Information Centres of Halton. The latest version allows the public to use a web interface to select volunteer opportunities according to their age, community, interests, and availability. A special search feature has been provided to enable Secondary School Students to find relevant opportunities to satisfy their mandatory volunteer requirements. Volunteers are able to contact the agency or agencies involved electronically through the web interface. The site's development was supported by Community Linkages program of the Ontario Ministry of Citizenship, Culture and Recreation.

As mentioned earlier, the users of this software formed the Community Information Online Consortium that now represents most of the urban Community Information Centres throughout the Province of Ontario and with members in BC and New Brunswick. This module has also been made to be Z39.50 compliant through a specialized crosswalk application (developed for us by CrossNet in England). A Z39.50 gateway links all of the CIOC member sites together providing staff and the public with a single, scopable search across all of the databases.

The Newspaper and Genealogy Index module is a unified index system for all of the local newspapers in Halton Region. The index entries are for specific articles, photographs and Birth/Marriage/Death entries. Staff and volunteers from all of the libraries are responsible for the indexing work for their community papers but share a common data entry interface designed for this purpose. It includes a substantial Authority control module for Thesaurus terms.

Many hundreds of thousands of index entries have since been added. Oakville and Halton Hills Public Libraries have also been scanning the full pages of their newspapers and linking the index to the page images for retrieval over the web.

The newspapers can be searched by keyword, name, subject or date. Users are able to browse by date and read from page to page, issue to issue through the entire file of images. More than 70,000 pages of newspaper images are now available on-line. Black and white images are from microfilm; colour images are produced by scanning directly from more recent newspapers. Discussions have begun with the local newspaper publishers about the ability to importing the PDF files directly in order to eliminate the scanning process entirely.

In order to provide high compression and easy navigation of the images, the libraries use Lizard Tech's MrSID (Multi Resolution Seamless image Database). Patrons are able to zoom in on the picture or article in which they are interested, and print just that.

Part of the Newspaper indexing module allows staff to index Births, Marriages, and Deaths. To date the Index of Births, Marriages and Deaths includes entries appearing in the Acton Free

Press (1875-1991), Burlington Gazette (1899-1986), Canadian Champion (Milton, 1862-1996) and Georgetown Herald (1861-1992) and a variety of Oakville newspapers. Over 250,000 entries have now been indexed.

Other libraries such as Brampton and Woodstock are now using this software and the Ontario Public Library network, through a grant from the Ministry of Culture, will be distributing it to its members as soon as the next release of the software is ready.

One of the most recent additions to our set of applications is the Halton Images service. The indexing module conforms to the international metadata standards for images. It also contains sophisticated thesaurus control, geographic name control, the ability to build 'display collections (including links to image collections elsewhere on the web if they match the 'theme' of the display) and the ability to easily create web photo essays such as the Images Canada photo trails.

The Burlington Public Library and Historical Society maintain a searchable photographic collection on the web which currently contains over 2000 images from the Ivan Cleaver Postcard Collection and the Burlington Historical Society Photograph Collection. The Milton Historical Society and the Esquesing Historical Society's now each have over 5000 images indexed and online. The Oakville Historical Society and Museum, in partnership with the Oakville Public Library, are each preparing to launch online collections and online photo essays numbering several thousand images.

Halton Images has been a partner in Images Canada for several years. Our Images project supports Z39.50 and qualified Dublin Core. We are already compatible with the Open Archives Initiative model for metadata harvesting the when Images Canada is ready.

The HALINET partners have also been working on some "value added" specialty services. The Ontario School Curriculum Resources (OSCR) database is a module aimed at students and their parents. A school project list can be browsed by grade and category. Links take the searcher to live searches in the library OPAC, to a list of 'best of' resources for that topic and related links to valuable web sites. This service is being promoted, at the moment, as a prototypical service of the type being championed by the Ontario Digital Library movement in Ontario.

Halton public libraries have been promoting literacy through love of reading for years with the local schools. We have developed a competitive game called Battle of the Books in which students from different school teams compete with each other for the most correct answers about a number books in that year's list. Library staff members throughout Halton are able to use a flexible database to develop, store, evaluate and share their list of 'Battle' questions from year to year over the web.

A web-based Readers' Advisory, allows staff throughout Halton to jointly maintain a "what do I read next" type service that leads searchers to their local library OPACs to check for availability.

High level search services
The next goal for HALINET was to gather together onto one search screen all non-bibliographic databases in a "one place to search" format. The Historical and Newspaper Records Search Form is an early pre-Z39.50 experiment in meta-searching. It enables users to search the over 700,000 records in over 20 local databases described above. It demonstrates the ability to target multiple databases.

The search passes a 'lowest common denominator' type of query to each database and returns a unified result set sorted by community. However, the methodology is proprietary and tailored to the specific databases in question. In order to overcome this limitation HALINET libraries became early adopters of the Z39.50 standard. The HALINET Gateway is a service built upon the DRA Z39.50 search engine. It incorporates access to a growing number of web-based databases

throughout Halton and the rest of the world. The Library catalogues of the 4 public libraries and the public school board have been Z39.50 accessible for almost 5 years through the Z39.50 component supplied with their current version of the Dynix library automation system.   The Community Information Databases, the Halton Newspaper and Genealogical Index, the Peel Newspaper Index, and the index to the speeches of the Empire Club of Canada have all had Z39.50 crosswalks designed for them to enable them to respond to Z39.50 queries.

Looking for partners…
The development work in Halton has always been treated as Open Source and the Halton partners are anxious to share these modules, and the experience gained, with other like minded organizations. Wherever data entry modules exist, they are web accessible so that many users can share applications on common servers. The database and application designs ensure that they are scalable. The development goal is that many hundreds or thousands of smaller libraries, archives, historical societies and others can index and 'publish' their local content to the web without the need for a sophisticated, locally installed application and storage environment on their site at all.

For more information about the HALINET partnership please contact:

Brian Bell, Director E-Services Development, Oakville Public Library
Office: 905-815-2027
Email: bbell@oakville.ca

February 1, 2005