Connecting Community-based Providers Through a Business Registry

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The community and voluntary sector is a complex web of service and information providers, ranging from government agencies to small, single issue support groups. This presents a number of challenges for those working (and volunteering) in the sector and for citizens looking for a particular service. There is a clearly articulated need amongst both providers and local government to coordinate such groups and create improved conduits for the dissemination of information and communication.

A Business Registry enables organisations to publish information about their activities so that their products or services can be discovered by anyone searching for them in the registry. Transactions can also be integrated to enable the full range of e-commerce activities. The publish and search features of a Business Registry are ideal communication channels for connecting community-based providers.

This paper discusses a pilot project to extend the concept of business registries by applying them in a model which collates and codifies information relating to community-based providers.

Keywords

Community and voluntary sector, community informatics, business registry, communication channels.

1. INTRODUCTION

The community and voluntary sector within a local government area comprises organisations which frequently utilise the services of each other. Opportunities are often missed through the inability of one community service organisation to connect with an appropriate voluntary service provider. These problems are similar to that which businesses encounter in endeavouring to look for suppliers or customers. There are technologies which enable businesses to publish information about their products and services in a way that can be easily discovered by another company in search of those products or services. An example is the UDDI (Universal Description, Discovery and Integration) Business Registry. This technology has been implemented successfully for a number of years and public registries are maintained by IBM, Microsoft, SAP, and ITT Communications. In this paper we investigate the possibility of applying this technology in an innovative way to the needs of the community and voluntary sector.

In this paper the role of community informatics in connecting community and voluntary service providers is discussed. Community Informatics (CI) is the study of "how ICT can help achieve a community's social, economic or cultural goals" (Gurstein, 2000, p.3). The features of a business registry which can be adapted for use as a community registry are then identified. This is followed by a discussion of a project in which a prototype community registry was set up as a private node using internet technologies that are aligned with current best-practice.

2. COMMUNITY AND VOLUNTARY SECTOR

The community and voluntary sector is a significant asset, providing information, support and services to New Zealanders. The sector runs on goodwill and very often with limited resources, which limited its ability to become an effective user of ICT. Effective use is defined as "the capacity and opportunity to successfully integrate ICT into the accomplishment of self or collaboratively identified goals" (Gurstein, 2003, p.9). Groups operating in the sector have cross-over skills and will benefit both themselves and their clients by collaborating and networking. ICT is a potentially useful communications tool, allowing voluntary organisations to become producers of knowledge, publishing their own viewpoint. However, publishing is not enough as there remains an imbalance in terms of communicating that information effectively to those who seek it. Whilst strong ties already exist amongst voluntary agencies on a

physical level, an opportunity exists to connect such organisations as they transition online such that they are better able to make use of new technology (Williamson, 2003).

3. BUSINESS REGISTRIES

A registry is defined as "a place or office where registers or records are kept" (The Concise Oxford Dictionary, 1990). According to this definition, a business registry is a place where business records are kept. An example is the Yellow Pages which is a paper directory of telephone numbers of businesses classified according to business type. Online business registries exist which extend the services provided beyond merely publishing and searching to transacting (Morrison, 2002). The UDDI Registry is one example where registrants can publish information relating to their business on the internet which can then be discovered by other registrants and a B2B transaction carried out when the required conditions are met.

UDDI technical standards are set by its OASIS Technical Committee. The latest is Version 3 which was released in August 2003 (UDDI, 2003). UDDI Versions 2 and 3 public registries are operated by Microsoft, IBM and SAP. Access to these registries is free.

4. COMMUNITY REGISTRY

The ease with which businesses can publish and search for services through a UDDI Registry was viewed as a desirable feature for connecting the community-based service providers in a local government environment. However, it was decided that the services would not be exposed to global searches in the initial stages. The UDDI node connecting the service providers would not be connected to a public registry and would thus operate as a private node that would be accessible only by registered users.

4.1 Approach

It was decided that the techniques used should be aligned to current technical best-practice so that it can be scaled up into the public UDDI registries should the need arise. This is supported by Version 3 implementation which envisaged federations of 'user-focussed' private registries as a distributed registry (Geyer, 2003).

It was recognised that there was a need to educate the community service providers in the use of the registry. The interface therefore needs to be one that is simple to use. It was decided to use the SMBmeta model for developing an XML-based web-hosted registry. SMBmeta is an initiative to assist small and medium-sized businesses communicate information about location and the type of business to search engines and other web services (TrellixTech.com, nd). The information model of SMBmeta is a subset of the standard UDDI registry model comprising the White, Yellow and Green Pages. This is considered better suited to community service providers without extensive IT expertise.

4.2 Technique

The applications are driven by the Information Model. It has been codified through the XML-schema associated with the project. The SMBmeta schema was used for the prototype. However the Information model will be modified to reflect the needs of the community service providers after the initial trial period. This approach is in accordance with designing the application for effective use of ICT as discussed by Gurstein (2003).

From these schema, the following information can be technically automated and controlled:

- Data capture and validation of data records for each user in the community
- Query validation
- Presentation.

XML and XML-Schema control the data while XML-Schema, XML and XSLT control the output presentation. XML and XSLT will be used to automate the generation of data capture and query language.

A flexible native XML database, Xindice (Apache Software Foundation, 2004), was used to allow flexible deployment and the concurrent support of multiple schema. XPath was used as the query language as it is the emerging standard for hierarchical data.

4.3 Prototype

An initial functional prototype has been constructed. An information model has been developed based on the SMBmeta model. RELAX NG, the basis for SMBmeta, has been mapped to XML-

Schema and a number of exemplar records have been created. Using the schema, prototype forms were auto-generated using Multicentrix Schema-Forms (Multicentrix Technolgy Sdn. Bhd., 2003) and through XSLT.

The following were created for a desktop HTML environment:

- A subscribe and publish form
- A query form
- A presentation layout.

4.4 Demonstration setup

The community registry prototype was setup on a Pentium III Windows NT4 personal computer running Java 1.4.2. Apache Tomcat server was used to run the web layer of the application. Apache Xindice database was used to store the community registry information which were coded in XML.

Two user client access points have been created for searching and publishing through a web interface. Accessing the query page will cause a web page to be downloaded, then activated and data accepted. The application servlet in Tomcat is then called, the query decoded, and the Xindice database accessed through the API and the output xml data is passed through an XSLT filter to convert the output to HTML before sending it to the client.

The community registry has been demonstrated to officers in the local government body who were responsible for coordinating community service providers. The ease of querying and of submitting data through the internet impressed the officers sufficiently to gain their support for the project.

5. CONCLUSION

A simple and easy to use tool for publishing community services using the internet has been created based on the UDDI business registry model. The community registry enables searches for community services within a local government area to be carried out easily.

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