TransAct: technology and the community

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Abstract

This broadband project, the TransAct Trial, was the concept of the ACT Electricity and Water Authority Corporation (ACTEW). As a result of this trial, the ACT Department of Urban Services, the ACT Public Library and Information Service (ACTLIS) - that is one of the Department's Agencies - and the University of Canberra, have been closely involved in the development of a number of related Internet sites, including an interactive site developed by youth in Aranda.

The TransAct Trial has enabled ACTLIS to test new technologies for delivering information services and to explore different ways of working with sectors of the ACT community. Models have been established for ongoing links with education and with youth which can be applied to other community agencies and organisations. Outcomes for ACTLIS have been a cohesive website (which now requires redevelopment) and the need to develop marketing strategies to ensure that electronic services offered by ACTLIS are utilised to the maximum.

Public Library Service in the Electronic Environment

"If utilised effectively, the Internet is the greatest information resource that a public library has at its disposal. Those public libraries that provide equitable access to the Internet and investigate ways of value-adding the Internet will play a key part in assisting their communities to reap the benefits of the Information Age" (Scully, Internet Access: Core or Value-Added Service? http://www.slnsw.gov.au/plo/pubranch/papers/policy.htm).

Numerous articles and studies are being produced concerning information technologies, digital resources and public libraries. A scan of the current literature indicates a growing role in the provision of Internet services and digital resources by public libraries. There is debate about whether the Internet will supersede public libraries altogether, as well as debate about public libraries serving as a community Internet centre. In this context the public library is a place of first resort and a place of last resort. As a place of last resort the public library can ensure a safety net providing Internet access and services for those who cannot afford access at home.

Broadband technology offers public libraries the opportunity to become a place of first resort in the information seeking process at the community level. Using videoconferencing and internet technology, extension services can be designed to reach people at their point of information need. Lipow (1999) argues that reference librarians are an endangered species by the mere fact that they are remote from users, when the Internet can provide immediate assistance. Lipow notes that, as users seek information when they recognise that they have a need, reference librarians must be able to offer a service at the point where that need occurs. Reference librarians have the expertise that will enhance a user's information seeking process, and unless they want to lose their role altogether, they must explore some of the options that the new technologies offer. Users need the kind of indepth help and searching expertise that these professionals have been trained to provide.

Lipow paints a scenario in which she describes "a searcher at a workstation somewhere in or out of the library is looking for information but isn't finding it, or doesn't know where to start, or is in some other way stuck. On the browser is a flashing link labelled 'click here to talk to a librarian'" (1999, p117). On the click the searcher can talk to a librarian using videoconferencing technology to explore the information need. The technology not only enables remote users to gain direct access to librarians, but it also solves the user's need for assistance in finding the information. Nothing the Internet yet has to offer can replace the contribution made by the skilled human intermediary in the information seeking process.

Some academic libraries in the United States have piloted this technology for reference services, with positive results. Those library and information professionals involved have concluded that such technology is successful in reaching remote searchers who have information needs (Lessick, Kjaer and Clancy, 1997, pp1-9; Pagell, 1996, pp21-26; Westwood, 1997, pp43-45). Lesser, Kjaer and Clancy also noted that the technology assists the reference librarian to instruct the searcher in the successful use of searching tools and they also recognised the potential of this technology as a consulting tool.

Lipow agrees with Lesser, Kjaer and Clancy (1998, p9) about recognising the potential of this technology as a consulting tool. However Lipow places some of the responsibility for the solution of the problem with reference services. She argues that reference librarians need to export their skills to the business community on a fee-for-service basis, for, it is through serving the 'haves', that they will then be able to fund services to the 'have nots' (1999, p120).

The Strategic Forum from the 1995 (Australian) National Public Libraries Conference developed *A National Plan for 1996-2000* which stated in its preamble that: "in future libraries will have to position themselves to serve the needs of business". The national public library system must balance the community role of libraries with a new information management function and the expanding needs and expectations of the business community" (p4). Public libraries are recognising their role in developing services tailored for business. For example, ACTLIS has established a Business Reference Service in one of its eight library sites, which is targeted especially at home based businesses after careful research into which business sectors the service could assist. This service is described at http://www.business.gateway.act.gov.au/documents/dir86/doc502786.html.

One of the contentious issues currently facing, not only public libraries, but any information service attempting to reach its clients through the use of advanced information technology, is the issue of 'user pays'. It may be that to afford the bandwidth to offer these services, public libraries will have to charge potential users something towards the cost of the service delivery. This of course raises questions in relation to the seemingly everlasting divide between the information rich and the information poor. It also highlights the paradox, that while the newer technologies have the ability to connect people to information in unprecedented ways, they also have the ability, because of their cost, to isolate people from information which may be vital to them. The role of the public library in providing access to networked resources for the more disadvantaged sectors of the community places its services as those of the "last resort".

User education is another strategy that public libraries can undertake to encourage users to try the services and to raise the level of user education in network literacy. As well as enhancing the information seeking activities of their remote clients, librarians are also in a unique position to assist them in the development of their information and network literacy skills. Public libraries, according to the final report *Public Libraries and the Internet: Study Results, Policy Issues and Recommendations Final Report* (1994) by the National Commission on Libraries and Information Science, should be promoting network literacy (p. 46). Network literacy is the ability of an individual to use computer and telecommunications equipment to identify, access and obtain information that is available through the Internet (McClure, 1993). Increasingly, individuals who are network illiterate will find themselves at a significant disadvantage. There is, therefore, a role for public libraries to offer network literacy opportunities to their communities. Their role in doing so has a strongly developed history in terms of access and equity issues for their local communities.

The TransAct Trial - Description

The TransAct Communications Project (referred to as the TransAct Trial in this paper) was established as an advanced communications network which was recently piloted by the ACT Electricity and Water Corporation (ACTEW) in the Canberra suburb of Aranda. The purpose of the pilot was to evaluate the technology with a view, possibly, to making it available right across Canberra. The suburb was selected, following a telephone survey, on the basis of the residents' evidence of interest in the concept and their keenness to participate. Over 200 homes were connected with participants trialing a variety of services (Taylor, 1999 p13).

The technology used was a "fibre to the curb" (FTTC) or a Switched Digital Broadband network. In Sydney and Melbourne, "hybrid fibre-coaxial (HFC) cable systems have been utilised by Telstra and Optus, but suffer from a lower volume shared capacity architecture. Under these systems the demands of each additional user on the system in any particular area

slows the throughput to everyone else" (Lo Bianco and Vivian, 1999, http://www.csu.edu.au/special/raiss99/papers/cvivian/). These problems have been avoided by TransAct through using high capacity optic fibres to within 300 metres of individual homes. Each house was capable of receiving up to 51 mbps downstream and sending 1.6 mbps upstream and had its own dedicated bandwidth back to a Gateway Site in a neighbouring suburb, which connected Aranda to the rest of the world.

A number of services were available as part of the pilot, with varying costs to the participants. The telephone service, which offered free calls on the TransAct network itself, charged 20c for all other local calls and offered competitive rates for long distance calls. TransAct has a telephony switch installed in the Operations Centre and it is anticipated that a number of telephone companies will offer local and long distance calls within Canberra when the network is fully operational. As well as all of the capabilities of the Telstra network, these telephone services have additional features including cheaper conference calls.

Some of the Aranda participants piloted video services including a discreet set of Foxtel pay TV channels for which they paid $34.95 per month. Two free European channels were also available and two channels from Sound Screen Australia (formerly the National Film and Sound Archives). Future plans include the possibility of accessing virtually unlimited television channels, a tourism channel, a distance learning channel and free to air television that would ensure a perfect picture, without an antenna, to any home in Canberra.

Perhaps the most popular service offered was the high speed data service available through the Internet Service Providers (ISPs), Spirit and Ozemail. It is hoped that eventually most ISPs will offer access via TransAct. On a network such as this, TransAct will be the network provider, but not the service provider. The high speed data service will provide a permanent link to the Internet as well as access to high speed data transfer and will be priced according to the speed provided (Taylor, 1999 p13). Technical details concerning TransAct are available at its website at http://www.transact.actew.com.au/technical/Techinfo.html.

Another important service provider for the project was the ACT Department of Urban Services which launched several online services with the TransAct Trial. All of these services were free for the duration of the Pilot. Supporting these services was a shopfront where Aranda residents were able to talk with Urban Services staff while viewing ACT Government information online. From the ACT Government website they were able to initiate an interactive video session and ask for assistance in searching for, and retrieving, ACT government information and services on the Internet. The ACTLIS is one agency within the Department of Urban Services, and ACTLIS management strongly supported the involvement of their staff in the TransAct trial. The results were The Virtual Library and the development of a number of websites which now form the core of the ACTLIS website.

ACTLIS and the TransAct Trial Project

The TransAct Trial provided ACTLIS with the technology and the opportunity, that allowed it to replicate Lipow's scenario. Through the development of The Virtual Library and a number of websites, the ACTLIS moved into an online service that started to reach its remote users. The virtual library offered online reference sessions using videoconferencing technology. These were available to residents of Aranda for one evening a week and staffed by ACTLIS to respond to their requests. Access to the ACTLIS award winning CD-ROM

Reflections of Canberra was offered to trial the experience of fast download times of graphics that the broadband technology could offer (Lo Bianco and Vivian, 1999, http://www.csu.edu.au/special/raiss99/papers/cvivian/). The ACTLIS also used this opportunity to trial interest in *Electric Library Australasia*. The advantages and limitations around the technology has been documented by Lo Bianco and Vivian in their paper *Creating Canberra's Virtual Community Library Service* at
 http://www.csu.edu.au/special/raiss99/papers/cvivian/.

Development of ACTLIS Website

The websites designed in conjunction with the TransAct Trial included Search the Internet site, Homework Help and Youth Online (YOL). The Search the Internet site, http://www.act.gov.au/services/actinfo/actlim/irl.html, was developed in response to an analysis of requests received for Internet assistance in the eight ACTLIS branch libraries over an 18 month period. It provides links to sites which assist ACTLIS customers to use and search the Internet effectively. It also provides links to sites collocated under subject headings – for example travel, Australia, medical sites, science and technology – focussing especially on Australian sites (Lo Bianco and Vivian, 1999,
 http://www.csu.edu.au/special/raiss99/papers/cvivian/).

The Homework Help site on the ACTLIS home page at
 http://www.library.act.gov.au/homework/ was developed in conjunction with local schools. The site was developed after the Children's Services Librarian for the North region thoroughly investigated, with ACT Department of Education and Community Services staff, the options to develop this site around the core principles of information literacy. The site successfully links public library resources with electronic resources and is the result of collaborative effort between the public library service and the schools. Teachers at Aranda's public and private schools provided input about homework topics and the information literacy process to assist the ACT children's librarians to create a site to assist both students and parents with homework.

This site provides an email link so that users can contact an ACT public librarian with a request for information. Online pathfinders are available to assist students with access to Internet sites, ACTLIS resources and other useful organisations appropriate to their assignments. The opening screen for Homework Help provides a step by step guide for the six steps in the Information Literacy process. Information Literacy is a major curriculum focus of the ACT Department of Education and Community Services. Teacher librarians in ACT public schools have invested considerable time and resources in educating both teachers and students in the information literacy process. The six steps are designed to assist students to follow a process of identifying the information they need through properly defining the topic(s) they are seeking. Once the appropriate information resources are found, these steps assist students to evaluate, organise and present the information, as well as assess the outcome.

Youth Online at http://www.arandacommons.com.au/yol/default.htm was a project that was jointly funded and developed by ACTLIS and the University of Canberra. Under instruction from experienced website developers, teenagers in Aranda developed a website to meet the interests of young people in the ACT. Topics on the site include careers and employment information, music entertainment and games, events and activities information as well as sport and the arts. This site now also can be accessed from the ACT Library Service's website and until December 1999 continues to be a joint project of the two organisations.

Opportunities for ACTLIS after TransAct Trial

Although the pilot project has now finished, ACTLIS plans to carry the momentum forward into a range of services designed to meet the challenges offered by the new information technologies. Some of the services are being offered in conjunction with the ACT Department of Urban Services. As one agency within the ACT Department of Urban Services, ACTLIS is able to benefit from the development of a centralised call centre, one of the initiatives of this department. The call centre will enable more routine library enquiries such as renewals and reservations, hours of opening, bookings, events and activities information to be managed through centralised call centre operations. This will be far more efficient than having the calls fielded by library staff in eight separate branch libraries while they are also carrying out information and circulation desk duties at the same time. Call centre technology also offers excellent tracking mechanisms to develop information for management and planning for ACTLIS. The integration of call centre and web based technologies promises an interesting future for agencies utilising call centre technology.

The model utilised to develop the Homework Help site will be extended and built on by ACTLIS to forge continuing links with schools for the better resourcing of the information needs of their students. Similarly, the development of the Youth Online site provided a model for the ways in which public library staff can work with youth, traditionally a challenging and elusive group for public libraries. Likewise, the same model can now be applied to other community organisations within the ACT. The potential to partner with other ACT organisations could result in the provision of significant ACT resources collocated at the one point, the ACTLIS website.

The TransAct Technology has proved that, given access to the infrastructure, public libraries can provide a broad range of new and innovative services in a networked environment. Videoconferencing technology, as US libraries experimenting with it have found, offers new opportunities for consulting. ACTLIS will seek out opportunities to develop consulting information services to business when the technology is eventually rolled out throughout the ACT. The foundation for this service already exists in the business reference service that ACTLIS offers to small and home based businesses in the ACT. This service is currently based around a collection of business materials and a librarian who specialises in offering reference and information services to this sector.

In 1999, Internet training courses for the general public, were offered by trained staff from ACTLIS. The problem of segmenting the whole ACT "public" for the purposes of marketing these courses has to be solved if the Internet training is to survive and thrive, as there are many competitors in this field of training. The timing of the promotion of the courses has also been critical. For example, staff had to gear up very quickly to promote Internet training courses during seniors' week, which closely followed children's book week activities.

Although the TransAct Trial has offered ACTLIS opportunities to explore leading edge technologies for the delivery of information and services, there are some prerequisites. It is essential to have access to the appropriate bandwidth to develop video applications. This trial was conducted in a librarian's home because the broadband cabling did not run past a public library site. The bandwidth ACTLIS currently uses is 64k which carries internet traffic together with access to the integrated library management system. As a result, all applications run slowly. Overseas experiences with this technology indicate the necessity to have people at

both ends who are very technologically literate; it may be difficult in the shorter term to easily develop the seamless solutions required. Staffing is important. Staff must be able to monitor a computer screen at all times as this will be the only flag that there is a client at the other end requesting the library's services. Resourcing implications are significant for providing a seamless service whereby a library client can click on a button at the web opac and/or other website and be immediately connected to a librarian to request information services via videoconferencing technology.

Challenges for ACTLIS

One of the main challenges facing ACTLIS as it seeks to develop its electronic services is firstly, making them known to the potential audience, and then encouraging the audience to make use of them. Reaching the community, without the massive advertising budgets of, for example, a Woolworths or a K-Mart, demands creative solutions. More and more the public library service must view itself as a business, and an efficient marketing strategy must become one of its core activities. Consultancy services and strategic partnerships are two options that could form part of those strategies. This approach calls for a certain type of leadership role from top library management. As well as professional knowledge, skills and attributes, the modern manager of a public library must be entrepreneurial and have excellent communication and negotiating skills.

That reaching the intended audience is not an easy task was highlighted by the TransAct Trial. For example, research results from that project show that although almost 90.0 per cent of the participants knew of the Virtual Library, Homework Help Service and the Youth Online, these services were used by only approximately 10.0 per cent of that population (Milne, 1999b p. 26). The demographics show that 59.0 per cent of the participants in the TransAct Trial were over 45 years of age and only 28.0 per cent were children under 18 (Milne, 1999a p.3), resulting in a population that might not make substantial use of the Homework Help or the Youth Online. But this population should have been one that made use of the Virtual Library.

Also of significance are the comments relating to future use of the Virtual Library. While 88.5 per cent indicated they would use the service if it were free, only 41.4 per cent indicated they would do so if there was a small charge (Milne, 1999b p.27). Figures like this must raise questions for managers of public libraries as they consider their options in relation to electronic services. Not only what services are possible to offer electronically, but what electronic services will the community value and use. To do this it is essential to have a good understanding of the demographic make-up of the library's community, including aspects such as age distribution, work patterns and also, if possible, community interests.

The issue of the cost of introducing electronic services cannot be ignored. As noted, Lipow makes the point well when she stated that if libraries don't begin to offer services that can be accessed at the user's point of need, others will step in and fill the gap on a fee-for-service basis. If this occurs, Lipow asks the very valid question, 'who will serve the have nots? (1998, p.120). Charging for public library services is always a difficult issue because public libraries have upheld their role in providing information freely to all who need it. However, it may be possible to charge users of high end technology services such as a range of virtual library services, to establish a financial basis for subsidising those services which ensure equity and access to other sectors of the community. Internet technologies can also be investigated in terms of providing remote access for those users of the public library service who are

housebound. These customers are currently receiving home delivery services by ACTLIS staff, thus ensuring that the public library service maintains its role as a place of 'last resort'.

Exploration of how information technology can be used to reach sectors of the community not always well served by public libraries and community organisations, is already being done in other parts of the world. Murtha for example, (pp 38-41) documents public library access for the blind and visually impaired using email support, Internet access to library catalogues and archives, and in-house workstations.

In implementing any new service a major critical success factor is the ability to communicate the value of the service to the potential users. When the potential user group is the community itself, this problem is exacerbated. What is the best way to reach a diverse, widely scattered group of people, many of whom are not already clients?

When planning the TransAct Trial, the Team considered these problems. Although the audience for the Pilot was not in a sense widely scattered, the Team had to 'sell' the concept to several hundred households. It decided a multi-faceted approach would be the best way to reach its audience and to ensure that the message was both received and understood. This included a direct mail-out to every household, public meetings and the establishment of a Shopfront at the local shopping centre that was staffed regularly, including some evenings and at the weekend. As the evaluation of the Pilot showed, the decision to adopt all of these avenues for communicating with the potential participants was justified. It was shown that a direct mailout was the best way to reach Aranda residents initially, but the Shopfront proved important for the provision of ongoing information and technical support (Milne, 1999b p4).

While a direct mailout seems a simple enough concept, and it does usually reach the intended audience, there is no guarantee that it will be read. It also presents a number of difficulties when technical issues need to be conveyed and explained. It is very hard to know where to 'pitch' the level of technical language in a written communication to the general community. This becomes relevant for the public library when it needs also to inform people about the level of computer technology they should have in their homes to support virtual services.

Email communication becomes possible when a select community group can be identified, but this too presents its own difficulties. For example, the TransAct research found that often an email message was read and deleted by another member of a family and the person for whom it was intended never saw it (Milne, 1999b p.4).

Perhaps the greatest challenge of all for public libraries as they seek to move towards the provision of electronic access to information is in relation to the skills and attitudes of their own staff. Staff training and development must proceed at the same time that new services have to be developed, while existing service levels are maintained. ACTLIS has just completed a staffing restructure. Implementation of the staffing restructure is proceeding with the move to a team based or matrix organisation. There are many challenges for ACTLIS in delivering existing services while regenerating the way the organisation works to reflect more modern approaches to organisational communication and management. It will be a challenge to achieve the vision for public libraries expressed at the workshop following the 1995 Public Libraries Conference to develop a national plan for 1996-2000. That vision stated "Every local Public Library in Australia will be a focal point for the community, a public space and the community's gateway to the information resources of the World for all Australians" (p.6).

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