Web 2.0 strategy in libraries and information services

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Web 2.0 challenges libraries to change from their predominantly centralised service models with integrated library management systems at the hub. Implementation of Web 2.0 technologies and the accompanying attitudinal shifts will demand reconceptualisation of the nature of library and information service around a dynamic, ever changing, networked, information access paradigm. To fulfil that promise, our workforce must become more flexible, applying sophisticated and continually refreshed information technology skills to a service model in which libraries become less static and more responsive to evolving client expectations and needs.

'Asps. Very dangerous. You go first.'

So Indiana Jones was advised by Sallah in the first movie of the series as he was about to be lowered into a vault full of writhing snakes (*Raiders of the Lost Ark* 1981). And so is the response of many library and information professionals and their organisations when radical change is suggested. The long continuities in library and information service value service to clients (at least those currently using the proffered services), maintaining the record and ensuring bibliographic control. But those important commitments can also inhibit readiness to innovate or accept change. Although it is true to say that our organisations and activities continue to change, many of us frequently find it difficult not only to accept major change but even to recognise its approach.

Web 2.0 is one of those times when we confront a sea change. The ready adoption of IT applications in libraries – from the use of MARC through the PC revolution to the Internet – has been a remarkable story through which libraries have evolved into instruments of the information society. But its impact has been constrained by the continuation of attitudes reflecting the former,

print oriented, library models. Those attitudes reflect a predominantly centralised service model in which we have the content (locally held or remotely linked) that our clients may access through a server-based architecture. Even when we have adopted client-server or other distributed IT infrastructures, we have continued to employ essentially star topologies, with integrated library management systems at their hubs, a centralised paradigm which has shaped our services and our thinking about them.

Web 2.0 changes all that. Its spirit moves us to a truly distributed architecture in which the Net becomes the platform (O'Reilly 2005). It takes us beyond linking to remote information resources, licensed or freely available, and into providing digital and haptic environments which enable our clients to obtain information, whether locally held or remotely accessed, in a facilitated and supported fashion. It turns us, as librarians, into navigators of a shifting universe of information, a less constant but perhaps more rewarding and valuable role than that of curator (without at all diminishing the importance of curation). Like Indiana Jones rushing through his adventures, our navigators of the information society must apply considerable skill and a deal of sang-froid to their work which will, likewise, enable others to follow. And, again like Jones, the journey into this changing Web 2.0 enabled mode of operation poses considerable challenges, some of which can be threatening and include encountering different mores and the accompanying operational and legal conundrums.

Web 2.0 thus takes us and our libraries and information services into an environment where it is not sufficient to place books and journals on shelves or subscribe to e-resources 'just in case' of need, nor to have document delivery or other 'just in time' services poised to meet unanticipated demands. It renders our services less pre-structured and more navigational, designed to enable exploration of a largely unknown informational universe rather than a known, 'controlled' collection.

Web 2.0 adoption in university libraries

Reaching towards this metaphor, the university librarians of the Libraries of the Australian Technology Network of universities (LATN – www.latn.edu.au), decided in mid 2007 to examine their engagement with Web 2.0. The six university library members (Auckland University of Technology, Curtin University of Technology, Queensland University of Technology, RMIT University, University of South Australia and University of Technology, Sydney) were surveyed on the status of their exploration and implementation of Web 2.0 technologies.

The survey, which was formulated by Ainslie Dewe at Auckland UT asked about the elements of a vision for supporting Web 2.0 services at the University of Edinburgh (Adie 2007) that comprised:

1. **Centrally supported wiki services:** What is your institution doing to support an environment where users can request the creation of a wiki for which control is devolved to them?

2. **Blogging service:** What blogs are available through your library to support learning and teaching?

3. **Guidelines and policies for use of Web 2.0 services:** What do you have in place to guide Library staff and students in the use of any Web 2.0 services you host?

4. **Internal collaborative tools:** What web tools are you using within the library to facilitate collaboration between staff?

5. **Information and support on Web 2.0:** How are you promoting, developing awareness and understanding about the nature, benefits and opportunities of Web 2.0?

6. **Communities of practitioners:** How are you using discussion forum services and other methods to foster interaction amongst client groups and staff?

7. **Facilitate and promote web feeds:** What are you doing to support and promote feed reader software (RSS)?

8. **Maintain a Web 2.0 technology watch:** What are you doing to maintain active engagement with environments such as MySpace and Facebook to note and disseminate innovative uses in academia?

The results indicated that LATN members were at an early stage of the adoption cycle. There was some use of university provided wiki services including functionality in learning management systems such as Blackboard and some consideration of externally provided services. Blogging was employed to a limited extent for internal communication within some of the libraries with one using a blog to provide a public 'news & events' service while most operated some RSS feeds which were primarily of a 'news' nature. To a degree, blogs and wikis were employed to share information and promote collaboration internally, especially for projects, part-time staff, information literacy and staff development. One was using Microsoft Sharepoint to share documents. Some were using podcasts to deliver information or services and there had been some consideration of tagging and investigation of platforms such as Encore and Primo. The initiatives were mostly limited to the libraries but a few were open to other parts of their universities and there was some interaction with students.

All were maintaining a watching brief and encouraging enthusiasts. A range of activities to support investigation and use of Web 2.0 technologies were being provided for library staff. They included presentations, discussions, sharing information via blogs/wikis/intranets and one had conducted a '23 Things' style course. Several were beginning to form working groups but no communities of practice had been formally recognised within the libraries although in some they were beginning to emerge. Some information sessions had been provided for university students and staff.

The question about guidelines and policies for use of Web 2.0 services provoked some bemusement since no specific guidelines and policies have been adopted and the libraries felt that they could rely on existing university web and IT usage policies, augmenting them if necessary.

Presentation of these findings at a September 2008 meeting of the Council of Australian University Librarians indicated that they were broadly representative of the state of Web 2.0 adoption across Australian and New Zealand university libraries (Byrne 2007). Some other libraries had taken particular initiatives, such as supporting a '23 Things' style course, but most were at the same watching brief stage. Comments from participants in master classes on Web 2.0 strategy conducted for staff from a variety of public, academic, school and special libraries and government and private information services in Australia and New Zealand through the second half of 2007 and first half of 2008 also confirmed the overall picture. By 2008, however, it became evident that understanding of Web 2.0 technologies and their library applications was growing and more experimentation with them became evident. Examples include Murdoch University Library's exploration of Second Life (Greenhill 2008) and other initiatives discussed at the 2008 VALA Conference in Melbourne. Participants in the master classes reported that they knew about the technologies but were feeling challenged to develop a strategy and secure the resources to enable implementation.

Making the COW moo

Determined to move beyond the watching brief stage, the LATN university librarians decided to work together to advance understanding and use of Web 2.0 technologies. A strategic collaborative approach across the six university libraries was taken in order to develop familiarity and confidence with Web 2.0 while building on and strengthening existing collaboration. Two tactics were adopted: the creation of a collaborative online workspace and the initiation of a shared learning program.

The Collaborative Online Workspace – popularly known as the 'COW' and featuring a friendly mooing cow – replaced the long-standing but passive and seldom updated LATN website. Conceptualised as a vehicle for experiential learning through use of the Web 2.0 technologies, the COW 'provides an online space where staff from LATN Libraries can work together on projects, share information and play in the Library 2.0 environment' (http://www.latn.edu.au/). It was constructed by consultants under the direction of Gabrielle Gardiner at UTS using the Drupal open source content management platform (http://drupal.org/) and offers a range of services commonly encountered on websites including access to meeting minutes and agendas, current projects, publications, surveys, news, professional development activities and a calendar.

At the COW's heart is the notion of 'communities'. They are the communities of practice which advance LATN's current strategic agenda across copyright, learning spaces, Library 2.0, quality and planning, scholarly communication, teaching and learning, and workforce planning. The communities provide online spaces where members of the LATN university libraries can work together, share information and gain access to Web 2.0 tools and resources in ways that will assist their everyday work commitments. The work of, for example, planning the annual LATN Teaching and Learning Forum is now carried out via the COW which enables those involved to learn about some of the Web 2.0 technologies through using them to do things they were going to do anyway and, in the process, builds a knowledge base which future forum planners will be able to access.

Library staff members are encouraged to participate in the communities, both when actively involved in the various projects and programs and when seeking information or merely interested. One of the LATN university libraries takes responsibility for each of the communities and each community has a moderator from each of the six university libraries. Despite the label 'moderator', their primary responsibilities are to add content and encourage use of the community but they might need to intervene in the unlikely event of a 'flame' or inappropriate content. The communities offer a range of Web 2.0 technologies, such as blogs/forums and books/wikis.

Thus use of the COW achieves three goals. It fosters collaboration among the staff of six university libraries dispersed from Perth to Adelaide to the east coast of Australia and across the Tasman to New Zealand. It provides a range of tools to record the collaborative work so as to inform future projects. And it gives the participants opportunities to share experience in using Web 2.0 technologies in real applications which will, it is hoped, assist the identification of viable uses for them in developing the libraries' services – and of course any pitfalls or areas for caution.

Motivating and equipping staff to engage with Web 2.0

But the tools are necessarily limited to those which are supported by Drupal and relevant to the priorities pursued by the communities. The many other technologies which come under the Web 2.0 rubric and which might have library applications – including Second Life, mashups and tagging – would not be used via the COW. It was clear that another tactic would be necessary to enable staff to familiarise themselves with some of these technologies and their potential. In addition, the LATN survey and other consultations showed that there was a number of enthusiasts but that most staff were uninformed and, in most cases, uninterested and perhaps somewhat threatened by the Web 2.0 technologies. If they were to join the Web 2.0 adventure, even after the 'asps' had been subdued, it would be necessary to provide a way to explore Web 2.0.

As elsewhere, adaptation of the '23 Things' provided that vehicle. Developed by Helen Blowers at the Public Library of Charlotte & Mecklenburg County (http://plcmcl2-about.blogspot.com/) in North Carolina, US, the '23 Things' is a familiarisation program which offers a pathway through a range of Web 2.0 applications for libraries and information services. It was introduced into Australia by Yarra Plenty Regional Library in Melbourne and has been adopted and adapted by many library organisations as far apart as the California School Library Association and the State Library of Tasmania. Most have used it for staff development but some, such as the Community College East Gippsland and East Gippsland Shire Library (2007), have employed it in community building. The program uses a tutorial format each week beginning with a brief explanation of a new Web 2.0 topic which is followed by discovery exercises and then a 'Thing', an activity, to complete. Although it can be completed by individuals, it is best undertaken by cohorts who share their experiences and keep each other motivated to complete the program even when distracted by work or personal commitments. The LATN version, 'Learning 2.0', was developed by Fiona Bradley and implemented by Belinda Tiffen at UTS. Following an initial round at UTS, the second round will be open to staff across the six LATN libraries with a lucky draw to encourage completion. Besides the familiarisation with Web 2.0, it is hoped that this will build relationships and encourage collaboration despite the enormous distances between the libraries.

Learning 2.0 provides a means to help staff members learn about the technologies and their library applications. The cohort based approach starts to build communities of practice in which members can share learning and ideas. It complements the LATN COW which enables some staff members to

learn 'through doing' by using Web 2.0 technologies to conduct collaborative projects and programs, such as offshore information literacy provision, and to build shared knowledge about such issues as copyright. Both engender understanding, some skill and a degree of enthusiasm to apply the technologies to improve services or go further in repositioning the library.

The skills build on the traditional foci of library service: discovery, description, assistance. But they are applied in a new context in which user generated content (tags, blogs, wikis, etc) is valued, the library's infrastructural focus moves to the integration of disparate resources and services ('Web becomes the platform') and a more fluid approach characterises service delivery ('perpetual beta') (O'Reilly 2005). The fluidity and incompleteness of this emerging Library 2.0 model challenges library staff members' preconceptions about the value of constancy, completeness and control, in the bibliographic but also other senses. It demands staff whose focus shifts wholly to information access rather than emphasising the procedures which are designed to facilitate information access such as acquisition, cataloguing and lending. The attitudinal shifts inherent in this Web 2.0 project are transformative and go well beyond the application of the technologies. In regard to metadata, for example, pre-coordinated descriptive practices must be put aside in favour of description 'on the fly' in which the system gathers user input, provides a measure of consistency but relies principally on post-coordination within the discovery processes to enhance search engine precision.

As we plan for the future of our workforce in a high skill, high cost, low supply employment environment, the changed needs highlighted by Web 2.0 demand new strategies for recruitment and training. More than ever, we need well educated, communicative and flexible staff. No longer can we harbour those who would prefer continuing employment in quiet havens. While continuing to fulfil our core commitments to serving clients, maintaining the record and ensuring bibliographic control, we need staff members who can recognise and respond to the dynamism of the new service models and operate successfully amid the impermanence of the new tools.

Finding the ark: Web 2.0 implementation strategy

In this transformative project, the constants of achieving change remain: applications of Web 2.0 technologies to a library's services need to be investigated, assessed, planned and implemented in accordance with a well considered strategic direction and via an appropriate project methodology.

Thus, building a strategic and tactical plan to drive change requires us to consider fundamental questions including:

- Who are the users? What are their information interests and needs? What are their styles of working or learning?

- Who isn't using the services (but should be)? What are their information interests and needs? What are their styles of working or learning?

- What information does the library or information service offer? How does the service add value to it?

- What other information is used in the organisation? How could the library or information service add value to its provision?

- What information does the organisation generate? How could the library or information service add value to its provision within the organisation or to outside users?

- Are there opportunities for quick hits? User generated content? Tagging? Wikis? Blogs? Uploaded content e.g. photos? Reusing existing content – tagging, mashups?

- Are there opportunities to offer new services?

- What are the longer term plans?

- Would it be useful to use vendor supplied platforms such as Encore (from Innovative Interfaces Inc) or Primo (from Ex Libris)?

- What resources are available to pursue the project – staff, skills, infrastructure?

- Whose support needs to be secured?

- Who might assist – internal or external partners?

- How could the strategy be promoted?

These are not new questions. They are basic to achieving change but they gather additional force when engaged in a transformative project such as Web 2.0 implementation because it challenges many of the internalised assumptions and practices of libraries and information services and the professionals who make them work. The use of Web 2.0 technologies offers a powerful route to repositioning the library's services in a more responsive, user centred mode. While the specific software will come and go, the new conceptualisation of library services will remain. The challenge is to reconceptualise the services, not just to implement MySpace, Facebook or whichever application may be popular at the moment.

Avoiding the asps: legal and ethical challenges

In addition to the strategic and tactical challenges touched upon above, the implementation of Web 2.0 technologies – and the transformation of libraries and information services which that may entail – exposes the services and their parent organisations to a broader range of legal and ethical challenges than they have faced in the past. These are the snakes in the Web 2.0 vault which we are entering: they must be subdued or managed if we or our organisations are not to be harmed by them.

A core issue lies in the area of user generated content, 'the wisdom of crowds' (Kroski 2006). Although extremely valuable in its capacity to share ideas and knowledge, to enable individual expression, and to enhance resources through tagging and commentary, user content can also include the provocative and the offensive. Libraries could be implicated previously in defamation and censorship actions but their exposure was limited because their role was essentially that of making available potentially contested materials. The shift from the so called 'hybrid library' model of being primarily a repository of and connection to previously published information resources to the fully networked Web 2.0 model repositions the library as a publisher of content. As 'publisher', the library or its parent organisation may then share liability for the infringing content with the creator. Further, it may become the primary target for legal action because of its visibility and capacity to be held liable both jurisdictionally and financially.

For librarians, the strongly internalised commitment to access to information can be challenged by such considerations because the defence of the library or information service against actions may require some degree of moderation, automatic filtering or the application of 'take down' provisions. Library staff members might also feel that the adoption of a publishing role takes libraries into the proper domains of others: they might prefer libraries to focus on their traditional roles of collecting and making available information rather than becoming active disseminators, 'publishers' in effect. Holding to that view would still demand that libraries seek to capture, preserve and make available dynamic Web content, as the National Library of Australia does with Pandora, but would leave the generation of the content to others. However, to do so would shut libraries and information services off from much contemporary expression and stop them from taking full advantage of the Web 2.0 technologies as, for example, an archive might do in enabling tagging to enrich records without compromising their integrity.

To take this further, while respecting user privacy, there is tremendous potential to provide advisory services based on the knowledge that 'other first

year mathematics students also used X' but this must be done judiciously. The 'wisdom of crowds' can also become the 'tyranny of the mob' where minority interests and opinions become crowded out by majority, perhaps 'mainstream', interests. Thus the specific interests of individuals – that are critically important in an academic library's learning and research context – can become marginalised under the weight of popular interest refracted through reverse intelligence recommending systems. In this respect, the 'wisdom of crowds' slogan conflicts with another Web 2.0 claim: that of better serving the 'long tail' of minority interests (Anderson 2004). For libraries, and especially academic libraries, the challenge is to use the potential of aggregated user data to improve precision while not sacrificing particularity.

Such considerations condition the profession's response to the new technologies. If we hold back from them, we risk becoming irrelevant or, at least, becoming unable to take advantage of the new technologies to provide better service to our clients. If we engage with them, then we must engage with the issues they raise which, as in all times of change, include both positives and negatives. A positive benefit may be an enhanced capacity to develop and support new professional or personal networks beyond the limitations of place and time including those relating to specialist or hobby interests or affinity relationships. Negative might include the need to manage such issues as unwitting exposure of personal information, or antisocial behaviour under cloak of anonymity, dangerous activities which could extend to predatory behaviours.

Managing these and other legal issues will demand new sensibilities and new skills. Organisations will need to ensure that their privacy policies, responding to Federal and State privacy legislation, are adequate in the new context. Take down provisions will need to be formulated with clear authorities to load and take down in accordance with online regulatory provisions but also in case of breach of copyright, defamation or other offensive content. An approved disclaimer, including perhaps notices about 'leaving site' and disclaiming 'third party' content, may help protect the library and its parent organisation. However, management of these issues must still conform to the profession's ethical stance on freedom of access to information and its corresponding support for freedom of expression.

The Web 2.0 adventure

While not as visibly dramatic as Indiana Jones' adventures at the movies, implementation of Web 2.0 technologies and the accompanying attitudinal shifts will have their thrills and spills. They will require us to reconceptualise

our services and the very nature of library and information service around a dynamic, ever changing, networked, information access paradigm. To fulfil its promise, our workforce must become more flexible, applying sophisticated and continually refreshed information technology skills to a service model in which access to information and preserving the record become paramount.

Our core professional values remain at the heart of this new focus for the profession but our libraries become less static and more responsive to evolving client expectations and needs. The understanding of 'collection' transforms into a focus on the needs of our clients so that we move beyond the institutionally focused 'just in case' or 'just in time' to a service model framed around supporting not only clients' access to both locally and distantly held *and* generated content but also capabilities to use and transform that content. 'Keeping the record' continues to be a core responsibility for libraries and information services, especially national libraries but, while still needing to ensure and manage storage, the emphasis shifts to shaping the formats and descriptive practices which will enable selective preservation of digital objects through dynamic systems.

Achievement of these aspirations demands not only reconsideration of the roles of our organisations but renewal of our profession through new approaches to its education and development. This is a great adventure through which libraries and information services will be transformed into new roles within this twenty-first century information society.

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