

Library 2.0: Balancing The Risks And Benefits To Maximise The Dividends

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Abstract

Purpose

This paper provides a number of examples of how Web 2.0 technologies and approaches (Library 2.0) are being used within the library sector. The paper acknowledges that there are a variety of risks associated with such approaches. The paper describes the different types of risks and outlines a risk assessment and risk management approach which is being developed to minimize the dangers whilst allowing the benefits of Library 2.0 to be realized.

Design/methodology/approach

The paper outlines various risks and barriers which have been identified at a series of workshops run by UKOLN for the cultural heritage sector in the UK. A risk assessment and risk management approach which was initially developed to support use of Web 2.0 technologies at events organized by UKOLN (a national centre of expertise in digital information management based in the UK) is described and its potential for use within the wider library community, in conjunction with related approaches for addressing areas such as accessibility and protection of young people, is described.

Findings

Use of Library 2.0 approaches is becoming embedded across many Libraries which seek to exploit the benefits which such technologies can provide. The need to ensure that the associated risks are identified and appropriate mechanisms implemented to minimize such risks are beginning to be appreciated.

Practical implications

The areas described in this paper should be of relevance to many Library organisations which are making use of Library 2.0 services.

Originality/value

The paper should prove valuable to policy makers and Web practitioners within Libraries who may be aware of the potential benefits of Library 2.0 but have not considered associated risks.

Keywords

Web 2.0, Library 2.0, risk assessment, risk management

1. Introduction

The paper describes a framework that is being developed aiming to ensure that institutions have considered the risks associated with use of Web 2.0 technologies and services and have identified strategies for dealing with potential risks in order to achieve the goal of balancing the risks and benefits to maximise the dividends to be gained by use of 'Library 2.0'.

1.1 Web 2.0

The Web 2.0 term has now been widely accepted as a description of a new pattern of ways in which the Web is being used. We have progressed from the publishing paradigm which characterised what is now sometimes referred to as Web 1.0, in which small numbers of content creators made use of tools ranging from desktop HTML authoring tools through to enterprise Content Management Systems (CMS) and corresponding editorial and quality assurance processes to produce content for passive consumption by end users. In a Web 2.0 environment large numbers of users are creating content using a seemingly ever-increasing variety of tools and devices, this content is made available via a wide variety of commercial Web 2.0 services including photographic sharing services such as Flickr, video sharing services such as YouTube, and social networking services such as MySpace and Facebook.

The characteristics of Web 2.0 were described by O'Reilly (2005). The key areas relevant to this paper include:

- application areas including blogs and wikis, social sharing services and social networking services;
- the ease of reuse of content elsewhere through syndication formats such as RSS and Atom and other embedding technologies;
- a culture of openness and sharing, which has been helped through the development of copyright licences such as Creative Commons;

- the concept of the ‘network as the platform’ by which services are hosted on externally-hosted services and accessible over the network, rather than a managed service within the organisation.

Although the value of the Web 2.0 term has been questioned by some, it does provide a useful way of defining a new phase in the evolution of the Web.

1.2 Library 2.0

The impact of the Web 2.0 term can be seen by the subsequent popularity of the ‘2.0 meme’ in other sectors. Terms such as e-Learning 2.0, Library 2.0 and Enterprise 2.0 have been coined with definitions provided in Wikipedia (<http://wikipedia.com>). These terms have clear links with the Web 2.0 term, describing the application of Web 2.0 principles and use of Web 2.0 technologies within the content of e-learning, library and enterprise uses.

The term Library 2.0 was coined on the LibraryCrunch blog (Casey, 2005). Further discussions on the meaning of the term and suggestions on the benefits which Library 2.0 seeks to provide have been published by Chad and Miller (2005) and Miller (2006). However rather than seeking to provide a definition let us explore the ways in which Web 2.0 is being used in various library contexts.

2. Perspectives of Web 2.0 and Library 2.0 in Different Settings

2.1 Perspective from a National Library

The National Library of Wales (NLW) has a remit to collect, preserve and give access to all kinds and forms of recorded knowledge, especially relating to Wales and the other Celtic countries, for the benefit of the public, including those engaged in research and learning. As a result its readers represent an extremely varied demographic, reflecting the diversity of the published material, archival and other collections.

The Web and the online delivery of resources has been integral to the NLW’s service portfolio for many years, providing access to its resources in a way which helps to overcome distance and availability issues. To this end, the NLW has an extensive digitisation programme which has provided virtual access to some of the greatest treasures in the collections through a ‘Digital Mirror’ (NLW, 2008a), using innovative access methods to deliver an enhanced user experience for remote readers (Jones, 2008).

The use of Web 2.0 approaches for Library 2.0 delivery is ingrained in the NLW’s 2008 strategy document - *Shaping the Future* (NLW, 2008b), which outlines the Library’s desire to explore collaborative and diverse models using external resources. This will allow the NLW to leverage web platforms which are heavily focused on user engagement in order to deliver future services. Leading up to this shift in emphasis for web developments the NLW conducted a review of how a national library might understand the concept of ‘Web 2.0’ and how it might best

make use of its existing digital resources in a Web 2.0 environment.

The NLW has begun to increase the level of Web 2.0 services available by creating presences in online environments (including Facebook and YouTube), as well as by beginning to allow reuse of its data – initially through a pilot Wikipedia project. The NLW is also developing a CMS underlying the Library’s main website.

Third-party web environments are key to the future delivery of library services and the NLW is actively looking to explore how exposure of data in open formats can allow the use of leading edge user interfaces and web front-ends. One concern for the NLW is that ‘spreading out’ of services onto commercial and external sites might conflict with existing policies around accessibility, sustainability and a commitment to bilingual (Welsh/English) access.

The NLW is also host to a Welsh Assembly Government funded project to provide an innovative and flexible service delivery platform for all types of libraries in Wales. The library.wales.org website (<http://library.wales.org/>) employs Web 2.0 technologies including social bookmarking and RSS to provide an alternative environment engaging with the public. This project explicitly includes the development of new services and the support of those services, allowing libraries to explore Web 2.0 technologies in a ‘safe’ environment where best practice can be easily shared.

The Web’s changing nature provides an exciting and challenging environment for any library service and the NLW has sought to engage directly with the opportunities that Web 2.0 offers. The next few years will provide the Library with opportunities to build upon the work described above and to explore new ways of working with users in a networked environment.

2.2 Perspective from a university library

The University of Wolverhampton has a large proportion of part-time students (some schools are up to 70% part-time). The University is also geographically spread across the region with five campuses in total. This means that students do not always come into learning centres and often use the closest geographical centre rather than their subject specific centre. The University has recently adopted a university-wide blended learning strategy to support the changing nature of the students, and the Learning and Information Services department is developing ways to support students from wherever they choose to study. This includes use of e-journals and e-books, as well as virtual reference support and Web 2.0/Library 2.0 initiatives to support students online. Current Library 2.0 initiatives at the University include:

- *Blogs*: The University currently has five subject blogs to support students and staff of particular academic schools, along with an electronic resources blog for updates to services as well as a

number of project-related blogs and internal communication blogs.

- *Social Networking*: The learning centres have a Facebook page which includes links to relevant parts of the university website, aggregated RSS feeds from the blogs and search applications. One of the most useful features of the page is sending updates to 'fans' - another way of letting users know about the services and reaching them where they already are.
- *Wikis*: A number of small-scale wikis are being used for sharing information.
- *Online calendars*: The University has been using Google Calendar to manage events. It has proved much easier than updating numerous places when timetables change or new events are added: updates to the Google Calendar are reflected wherever the calendar is embedded. Users can also subscribe to the calendar or add single events to their own calendar. The shared calendar has also been used for scheduling purposes for busy induction weeks.

The University is aware of a number of challenges posed by these services, including: dependencies on third-party services:

- the need to raise staff awareness of the potential of these services;
- the need to facilitate cultural change;
- a willingness to engage with use of such services;
- the need to ensure that the services succeed in enhancing the services provided to the user community.

2.3 Perspective from a Canadian Research Library

The National Research Council Canada Institute for Scientific and Technical Information (NRC-CISTI) serves as the library for the National Research Council of Canada, with services provided both at a central campus library on the main campus in Ottawa, as well as at research institutes across Canada. CISTI is also Canada's National Science Library and Publisher.

Being a part of the Canadian Government introduces challenges for adoption of Library 2.0 technologies, as policy requires that all public-facing interfaces support both official languages, English and French, and in some cases that the content itself is translated into both languages. The NRC's Marsville initiative is an example, with blog content available in both English and French (NRC-CNRC, n.d.).

The arrival of Library 2.0 has created considerable challenges in a policy environment that was geared to Web 1.0. Policy making efforts are underway, and there is tremendous excitement about the potential for Web 2.0 to address long-standing knowledge management issues. In light of the complexities, a Federal Library Web 2.0 Interest Group supports the exchange of ideas between

Canadian government libraries, and also to help demonstrate that it is possible to use Web 2.0 in a government context.

In terms of CISTI, the primary focus is experimenting with Library 2.0, in order to gather feedback from the researchers that we support. Using CISTI Lab, we provide prototypes of tools, such as a LibX toolbar, and use a wiki on the Lab site so that new information can be easily added.

One of the primary challenges is that CISTI operates within a highly federated organisation, with separate institutes devoted to different research areas. Many of the research workflows are already well established. This is why a gradual and experimental approach is taken to introducing new tools into the workflows. Additionally, researchers may have more in common with others in their discipline outside the organisation, so domain-specific sites, such as the ArXiv repository, may be more natural 'gathering' places.

Underpinning the web applications is a Service-Oriented Architecture. In many areas we see that providing services for researchers to build upon may be a better match for the structure of our organisation.

Internally at the library, an intranet wiki has been found to be extremely useful in co-ordinating work on projects, as all team members can view the information in a single place as well as add updates and corrections.

Canadian higher education does not operate within the same policy environment as the federal government, and serves a different research community. Many Canadian universities are therefore employing a wide range of Library 2.0 approaches for reaching their community, including social networks such as Facebook, with over eight million Canadians on Facebook, out of a population of 33 million (Profectio, 2008).

The popularity of this and other US services such as YouTube, Flickr and Twitter actually poses additional policy concerns, as US privacy laws are quite different from Canada's (Canada has a data protection model more like that of the European Union). Nevertheless, with a high degree of broadband penetration and with a younger generation of researchers emerging that is comfortable with Web 2.0 tools, it is clear that Canadian academic libraries will need to continue to innovate.

3. The Risks

3.1 Identifying the risks

UKOLN is a research organisation in the UK that aims to inform practice and influence policy in the areas of digital libraries, information systems, bibliographic management, and web technologies. It has been providing a number of workshops aimed at the higher education and cultural heritage sectors, which aim to provide an understanding of the potential of Web 2.0 and also to identify potential barriers to the effective deployment and use of such

services and explore ways in which such barriers can be addressed. Feedback is available from several of these workshops (UKOLN, 2008d; UKOLN, 2008e). This information, which has been provided by practitioners within the sectors has informed the ideas described in this paper.

3.2 Sustainability risks

Commenting on a recent Google Apps outage, John Proffitt, IT services director at Alaska Public Telecommunications Inc (APTI) was quoted by (Perez, 2008) as saying:

“It was constant troubleshooting, testing, research, posting to the Google Apps forums and so on. Plus there’s the emotional strain of wondering whether you completely screwed up by moving everyone to Google Apps as our sole e-mail system. That’s what freaked me out: Did Google just make me look like an idiot?”

We are currently seeing much debate on whether or not institutions should be embracing the software-as-a-service (SaaS) model and, in particular, making use of remote Web 2.0 services. Why run local services, when you can simply find a remote service to provide for your needs?

Perhaps this is a model for the future but is it the right model for the present? There is growing evidence that we are entering a global recession. Is this a good moment for public sector organisations to begin a brave experiment for outsourcing services to remote companies?

Google is clearly not a fly-by-night company – its size makes it likely that it will survive an economic downturn. But the vast majority of Web 2.0 companies are a fraction of the size of Google. As it is, many Web 2.0 services appear to exist with no visible means of support, other than venture capital. We can imagine that venture capital can become harder to find in a period of economic down-turn. Much Web 2.0 service delivery is supported through an advertising model, relying on a revenue stream coming from a small percentage of advertisements ‘clicked’ on. Again, perhaps people are less likely to respond to advertisements in a recession?

Chris Adie, who spoke on Managing the Risks of Web 2.0 (Adie, 2008) at the Eduserv Foundation Symposium, made the related point that Web 2.0 services which rely on a global scale in terms of numbers of users and/or on social networks will become decreasingly useful if the number of users drops. Essentially, the network effect works both ways. Chris Adie also referred to the University of Edinburgh Guidelines for Using External Web 2.0 Services (Edinburgh, 2007) and spoke of the risks involved in the institution’s use of remote Web 2.0 services, especially in terms of compliance with the Data Protection Act.

Once we got past the recession at the end of the dot-com bubble in the first years of this century, the notion of an open source operating system had reached a level of sufficient maturity for it to enter the mainstream. Web 2.0 services and SaaS as a viable, mainstream approach will likely reach similar levels of maturity in time. But perhaps

now, more than ever, institutions need to make sober appraisals of their options for service delivery or procurement.

Failures in the services provided by Web 2.0 companies are happening. Kelly (2008a) has described a personal example of this with the Squirrel service for managing small collections. The service’s interface to Amazon seemed to fail, with no Amazon book record being retrieved from the service. Further investigation revealed, worryingly, that the service’s data export function was also broken, meaning that the data could not be easily exported from the service. In addition it also appears that Squirrel’s fault-reporting e-mail address is no longer functional.

Such considerations need not, however, mean that organisations will need to shy away from use of third party services. If this was the case then we would not entrust our savings to banks, but would keep the cash hidden under our mattresses. Rather there is a need for use to evaluate the risks and to develop risk management strategies.

3.3 Digital preservation risks

Are we in danger of living in the digital dark ages, as some have suggested, with web-based resources disappearing as organisational policies and priorities change and technologies change?

A project on the Preservation of Web Resources (PoWR) was funded by the Joint Information Systems Committee (JISC) in the UK in order to explore more deeply the challenges faced by institutions and to provide recommendations and develop advice on best practices.

The first workshop organised by the JISC PoWR project provided an opportunity for participants to hear about and discuss barriers to preservation including organisational, legal, technical and resource issues. As described in a report on the event (Emmott, 2008) “The challenges are significant, especially in terms of how to preserve Web resources” although there was agreement that the “core message to practitioners was therefore to start building an internal network amongst relevant practitioners as advice and guidance emerge”.

3.4 The human factors

It would be a mistake to believe that the risks in providing services based on use of externally-hosted services are only concerned with the sustainability of the services themselves. There is a need to appreciate the risks associated with the human element. This might include the initial adopters and enthusiasts losing interest in services such as blogs and wikis, resulting in blogs which are not longer being regularly updated, wikis which fail to be maintained and inappropriate comments or automated comment spam failing to be removed from services. The wiki containing a directory of UK Library blogs (UK Library Blogs, 2008) includes details of a number of blogs which have not been updated for some time, with the entry for the Hampshire and Isle of Wight Library Land blog stating “Not updated since September 2007 and may be defunct”.

3.5 Accessibility issues

Many public sector organisations around the world, such as libraries, universities and other educational institutions, will have both legal and ethical requirements to ensure that their resources and services can be accessed by people with disabilities. In the UK the Special Educational Needs Act (SENDA) extended the remit of the Disability Discrimination Act (DDA) to educational institutions, which requires organisations to take reasonable measures to ensure that people with disabilities aren't discriminated against unfairly. The Web Content Accessibility Guidelines (WCAG) developed by the W3C Web Accessibility Initiative (WAI) play an important role in documenting approaches which can help to ensure that web resources can be rendered by web browsers and assistive technologies to users with a range of disabilities.

It is sometimes felt that all web resources must conform with WCAG guidelines, and that this requirement will rule out the deployment of many Web 2.0 services, which may be dependent on technologies which are deprecated in the WAI guidelines. However as Sloan (2006) describes, the WCAG 1.0 guidelines have significant limitations, including their reliance on browsers which conform with User Agent Accessibility Guidelines (UAAG) and authoring tools which conform with Authoring Tool Accessibility Guidelines (ATAG).

4. Maximising the Dividends

We have already summarised some of the benefits to a diverse range of user communities which Library 2.0 and Web 2.0 seeks to deliver, have provided examples of the risks associated with such approaches and have touched on some of the possible ways in which such risks are being addressed. In this section we summarise some of the broad approaches which can help to ensure that institutions maximise the potential dividends which Web 2.0 seeks to provide.

4.1 Advocacy

Although awareness of Web 2.0 is widespread in many circles, there is still a need for advocacy of the benefits to be gained which needs to be provided, especially to senior managers and organisations which may traditionally be resistant to change. The research interests and the need to engage with young people often help to ensure that higher educational institutions are early adopters of innovations. However, in other sectors such drivers will be missing and even in higher education there may be resistance to change, especially if the benefits of changes to existing working practices are not obvious.

Within the UK, UKOLN has taken a high profile in promoting the benefits of Web 2.0 to a variety of communities, including higher education and the cultural heritage sector. Such advocacy activities have included many presentations at national and regional events, including UKOLN's annual Institutional Web Management Workshops (UKOLN, 2008a) and a series of regional

workshops aimed at the cultural heritage sector (UKOLN, 2008f; UKOLN, 2008g; UKOLN, 2008h; UKOLN, 2009a; UKOLN, 2009b).

4.2 Listening

Advocacy activities need to be complemented by listening activities, which help to provide a better understanding of both specific requirements within organisations and the various concerns which may be expressed.

UKOLN workshops, including those on Exploiting the Potential of Wikis (UKOLN, 2006) and Exploiting the Potential of Blogs and Social Networks (UKOLN, 2007), together with a number of more recent workshops aimed at museums, libraries and archives described above, have featured use of wikis as a mechanism for gaining feedback on both potential use of Web 2.0 services and for documenting concerns and barriers encountered or expected by practitioners in the sector. The UK Web Focus blog (<http://ukwebfocus.wordpress.com/>) provides both a dissemination and communications forum for discussion and debate on best practices for use of Web 2.0 services.

4.3 Training, education, staff development and new media literacy

The library community has a tradition of providing training and support for library users. Libraries are beginning to take a lead in providing training and awareness in Web 2.0 concepts and tools. In some cases such training may be focused at staff within the library, as described in a blog post by Owen Stephens (Stephens, 2008).

Web 2.0 services themselves have rich potential in the delivery of training and staff development. In 2006, UKOLN's annual Institutional Web Management Workshop (UKOLN, 2006) began experimenting in the use of video-conferencing technologies to provide access to a remote audience. The success of this experiment and the growing willingness within the digital library development and support communities to seek to make greater use of communications technologies, such as streaming video and live blogging services meant that the video stream of the IWMW 2008 event had an audience (peaking at about 180 viewers on the final day), which was of the same order of magnitude as the live audience at the event (Kelly 2008c). It should be noted that the speakers were informed of the live streaming of the talks prior to the event and had the option of opting-out.

4.4 Amplified conferences

This example of an 'amplified conference' reflects a growing trend at IT and e-learning conferences. We are also seeing an awareness that the main challenges are not necessarily the technical ones but the human issues, including having an understanding of the purposes that the technologies are being used for, addressing the potential distractions that such technologies may cause and the legal and ethical challenges related to issues such as data protection, privacy and social inclusion.

A debate on the potential distractions caused by use of networked technologies in a conference environment has been commented on the Ed Techie (Weller, 2008) and UK Web Focus blogs (Kelly, 2008c). The debate has parallels with discussions on changes in the physical library space, from a quiet environment for individual reading to a social space for community activities. We are seeing developments of approaches which seek to address the concerns of the two camps, ranging from use of the physical space, with separate areas for those who wish to use their PCs and those who prefer a quieter environment, through to, perhaps, the development of hardware solutions which minimise noise made when typing.

The issues of data protection and privacy may be more complex to address. Many people are happy to be included in photographs and videos and for these to be made available online. However as Andy Powell has described (Powell, 2007) sometimes individuals may object to this, which can possibly result in such images being removed from public websites and the effort of any associated processing of the resources having to be written off. It may be argued that an approach to addressing such matters may be based on human sensitivities to such issues and flexibility rather than imposing blanket bans. However the need for Acceptable Use Policies in such cases has been described (Kelly, 2005).

The library sector may have a responsibility for ensuring its users have an understanding of the potential of networked technologies, having the confidence to make use of such technologies, the sensitivity to be aware of other's concerns and the ability to be responsive to concerns and difficulties. At one stage the library's responsibility may have been concerned with information literacy: ensuring that the users were comfortable in making use of networked technologies such as search engines, and could evaluate the information they accessed. However, in a Web 2.0 environment, the responsibilities towards the user community may be much broader, including supporting the user as a content creator and the associated ethical dimensions to this (e.g. plagiarism, copyright, etc.). The term transliteracy which has been defined in Wikipedia as "The ability to read, write and interact across a range of platforms, tools and media from signing and orality through handwriting, print, TV, radio and film, to digital social networks" may be a better term to describe the educational services that librarians may need to provide to support their users in making effective use of the Library 2.0 environment.

4.5 Preservation in a Web 2.0 environment

JISC PoWR is finalising its guidelines on advice for web preservation, which includes advice on use of Web 2.0 services. As described in a presentation on this subject (Kelly, 2008d) the use of syndication technologies (such as RSS) and the ease by which content can be made available in a wider of locations can help to address preservation and sustainability concerns.

The ease of content creation and the huge diversity of ways in which Web 2.0 services are being used can mean that the disposal of resources is more relevant than in an environment in which the creation of digital data was a time-consuming and resource-intensive task. Organisations may well decide that the preservation of digital resources such as Twitter posts or Skype telephone calls and instant message chats is not required.

4.6 Personal responsibilities and blog content

Details of a case study involving the establishment, disappearance and re-appearance of an e-learning blog have been described (Kelly, 2008e). This case study involved the Auricle e-learning blog which was established by Derek Morrison, an early adopter and head of the e-learning team at the University of Bath in January 2005. Following a period of secondment and departure from the University, the blog was deleted from public access due to security concerns regarding the underlying blog software. A blog post described the loss of this possibly valuable historical resource was written, but prior to publication it was discovered that the blog had been revived at a new (and more stable) location, with previous blog posts still available (Morrison, 2008).

5. Individual, Departmental, Institutional, National or Global Responsibilities?

In the previous example, responsibility for preservation was taken by the blog owner, but who more generally should take responsibility for ensuring that use of Web 2.0 in its broadest sense provides the expected dividends to the users, to the institution and, indeed, to society?

In a rapidly changing environment we will continue to see early adopters and enthusiasts making use of emerging technologies before institutions are in a position to provide a safe, secure and managed provision of such services. The example described previously in which motivated individuals were prepared to take responsibility for the migration of their resources may apply in a number of situations, but this is not a scaleable solution.

If we accept that a simple banning of use of such services is not an appropriate response, with significant risks to not engaging with a Web 2.0 environment, we will then need to identify appropriate strategies for assessing and managing the risks of use of services.

There will be a need for individuals to understand and manage such risks as increasingly individuals are using Web 2.0 services to support social activities. Institutions may have a responsibility in their new media literacy strategies to ensure that members of staff and students are made aware of possible risks. The corresponding risk management approaches may be relevant for use of services used by individuals but in a work context.

The institution may choose to develop its own policies in risk assessment and risk management, although in large institutions and devolved organisations the implementation may be left to departments or even individuals. This approach could require departments to develop approaches which are relevant to the department's particular interests – a new media research department, is likely to wish to exploit networked services in ways which are not appropriate for the payroll department.

In a blog post about the unavailability of an institutional blogging service at the University of Bath in 2004 Derek Morrison suggested there could be a role for a national service offering such facilities: “Had a central agency like JISC offered a blog hosting service with guarantees of editorial control and sustainability for authors then I would have seriously considered that route” (Morrison, 2008). JISC now provides a blog service (JISC Involve) for use by the UK's higher and further education sector. However although this service should be responsive to the needs and requirements of its community, there can be no guarantee that changes in policy or funding will not force changes to the services – and indeed policy changes related to funding by the Arts and Humanities Research Council did result in the closure of the national Arts and Humanities Data Service (AHDS). It is also by no means clear that a national service will have the flexibility provided by the commercial sector. National services may also be forced to limit their access to members of the community, which may act as a barrier to those who value the availability to liaise and communicate with a wider community. It is questionable, for example, whether national micro-blogging services, similar to Twitter, would be successful.

This leads to the question of the institution's role in a Web 2.0 environment. Is it as a provider of services, a gateway to services, an aggregator of data hosted remotely, a provider of education and training, a quality assurance and risks management assessor, or perhaps some other role?

6. A Culture of Openness

The provision of training and staff development courses is helped by the availability of resources with Creative Commons licences, which allow for their reuse, perhaps for non-commercial use. There is a likelihood that Library 2.0 advocates will have embraced Web 2.0's culture of openness and have a willingness to allow their resources to be reused by others.

UKOLN has recently released a number of briefing documents covering a variety of Web 2.0 areas which are available with a Creative Commons licence (UKOLN, 2008b). The decision to provide the resources under this licence was made in order to maximise the organisation's impact within the higher and further education and cultural heritage sectors. This decision also reflects an organisational culture of openness in which slides used in many presentations have made use of Creative Commons licences and access to the resources maximised through use of popular sharing services such as Slideshare.

7. Web 2.0 in a Time of Economic Trouble

How should institutions respond in their uses of Web 2.0 services at a time of a global recession? Let us consider the economic risks to various stakeholder communities which may undermine the services provided by libraries:

- *Externally-hosted Web 2.0 providers:* What if the services provided by Google, Yahoo, etc. prove uneconomic and the services are shut down or the terms and conditions changed, with perhaps free-to-use services becoming subscription services?
- *Our institutions:* What if the economic downturn affects the sustainability of the IT services provided within our institutions?
- *Our national services:* What if the national services provided for our communities are similarly adversely affected, with users preferring the services provided by the global services?
- *Our information providers:* What if the services provided by individuals who use Slideshare, Flickr, etc. aren't sustainable because the individuals may face redundancy, early retirement, etc.?
- *Our funding organisations:* What if our funding bodies have less funds available, and are forced to stop or reduce the level of funding provided to national or institutional services?
- *Our user communities:* What if our users' expectations or interests change?

It should be clear that to dismiss externally-hosted services at a time of economic turmoil would be too simplistic an approach. Rather, there is a need to develop risk assessment and risk management approaches across a wide range of scenarios.

8. Risk Assessment and Risk Management

An approach being developed at UKOLN is to document significant use of externally-hosted Web 2.0 services, to include a description of why the service is being used, a statement on the perceived risks and details of how such risks would be addressed.

This approach was taken at UKOLN's IWMW in 2005, with the latest risk assessment document being available for the IWMW 2008 event (UKOLN, 2008c) taking such risks included:

- *Support UKOLN's role* - an important role for UKOLN is to keep abreast of emerging new technologies in order to provide advice on best practices to its stakeholder communities.
- *Advise our communities* - many institutions have an interest in Web 2.0, including technologies which provide social networking services and integration of content for diverse sources. Making use of such

technologies allows us to provide effective advice, based on experiences gained.

- *Provide richer experiences to our users* - the hosted services aim to provide useful services to the target audience participants at the event.
- *Minimise resource efforts* - in order to minimise scarce software development expertise, we use services which are freely available.
- *Provide a test bed* - we will seek to host appropriate services after the workshop in order to monitor changes to the services, such as withdrawal of, or changes to, the licence conditions, enhancements to the services, etc.
- *Gain experience prior to service deployment* - evaluation of the services can provide feedback on the merits of the services which will be valuable if the services are deployed more widely.
- *Maximising impact* - if the technologies prove significant, demonstration at the event provides an opportunity to maximise impact by exposure to 170 delegates.
- *"Eating Our Own Dog Food"* - as UKOLN is active in advising on the development of innovative new networked services, we should be seen to be making use of innovative services ourselves.

Examples of possible risks and the risk assessment and risk management strategies taken were:

- Use of a third-party usage statistics service: a well-established service was used, with data being provided in any case on the web service.
- Use of a video blog: there were risks that the data may not be able to be extracted from the service. However as the video related directly to specific aspects of the event the long-term management of the content was not felt to be required.
- Use of del.icio.us to bookmark resources: del.icio.us is a well-established service. In case of problems it should be possible to make use of del.icio.us APIs to migrate the content to another service.
- Use of Google search facility: Google is a well-established and profitable service, and its search facility is central to its service.
- Use of the Eventbrite online booking service: although further information about this company is not available as it was used for informal purposes, its loss would not have been significant.

9. Accessibility Issues

A holistic framework for web accessibility is described by Kelly (2007) in which accessibility guidelines are treated as useful guidelines, to be used when their use is appropriate, and not as formal standards whose use is mandated. Further work (Kelly, 2008f) describes how this approach is particularly suited to a Web 2.0 environment in which content may be surfaced in a variety of environments

(use of syndication technologies such as RSS, JavaScript widgets, etc.). This approach is based on the belief that universal accessibility is a false goal, as accessibility is dependent on complex issues such as the context and intended purpose of use, and not just the technical aspects of the Web resource itself. Rather than seeking universal access, the view is one based on widening participation and social inclusion which seeks to ensure that the purpose of a service can be provided to the target audience.

10. Protecting Young People

The use of Library 2.0 to deliver services to young people, whether in the context of use in schools or colleges or the services provided by public libraries for young people, presents a set of additional challenges which tend not to be of significant concern in higher education. These specific risks include legal and ethical requirements to protect young people from inappropriate content and threatening or dangerous online encounters.

Childnet International (<http://www.childnet-int.org/>) is a non-profit organisation which aims to "help make the Internet a great and safe place for children". Digizen (<http://www.digizen.org/>) is a project sponsored by Childnet to foster the development of the 'digital citizenship' skills needed to both negotiate and contribute to the development of an online environment. As well as reading, writing and numeracy there is a recognition of the need to be media literate – to understand how to find, evaluate, manage and use information online.

The Digizen project recognises that the Internet provides a social space for people to communicate, collaborate, and create, but acknowledges that there are risks as well as opportunities. The approach which has been taken is to argue that simply blocking certain sites or outlawing particular behaviours are not in themselves guarantees of safety. Online communities have to take responsibility for negotiating acceptable behaviour and ensuring that everybody's experience is a positive one.

Digizen has developed resources to on best practices to support young people in their use of social networking services which includes a Social Networking evaluation chart (Digizen, nd 1), a summary of the benefits and opportunities the services can provide (Digizen, nd 2), and of the barriers and risks (Digizen, nd 3).

11. Conclusions

This paper has given examples of ways in which Web 2.0 and Library 2.0 technologies and approaches are being used. The paper acknowledges that there are risks associated with use of third-party services, in providing greater autonomy to users, in providing access to such services to users with disabilities and to young people. The authors, however, feel that there are risks, potentially greater risks, in failing to engage with a rapidly changing environment. The paper describes various approaches which can be taken to minimise such risks in order to

maximise the dividends which Library 2.0 seeks to provide.

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