talis

Do libraries matter?

The rise of Library 2.0

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Executive summary

The library's information provider crown is slipping. Justifiably or not, today libraries are increasingly viewed as outdated, with modern, Internet-based services, such as Amazon and Google, looking set to inherit the throne.

Even so, at Talis, we believe that there is plenty of life left in the library yet.

This survival demands change though. Inevitably, as the world advances, the library must also evolve and begin to deliver its services in the ways that its modern users expect.

Library 2.0 is a concept of a very different library service that operates according to the expectations of today's library users. In this vision, the library makes information available wherever and whenever the user requires it.

At times, realising this vision will be tough. But we believe it will also be exciting and fulfilling. In the end, we hope it will be proof that the library really does continue to matter.

Part 1: The context of Library 2.0

1. Do libraries matter?

The question of relevance is perhaps the biggest challenge facing libraries today. While there's no doubt that people value traditional library services, does the rise of Internet services, such as Google, Amazon and their like, present a huge challenge?

Let's face it. These internet-based services offer high quality, easy to use, methods for finding information. A person could easily be forgiven for believing that ordering a book from the comfort of their own home, and having it delivered straight to their door within just a few days, is less hassle than a trip to the local library.

With information now so freely available, particularly through the Internet, do libraries really matter?

At Talis, we argue that the answer is a resounding yes. Libraries provide unique value. We believe that a list of links in a search engine, while useful, does not have the same value as the knowledge that a library can provide.

Reports of the library's demise have been greatly exaggerated then. Yet, the staggering success of sites such as Amazon and Google has shown that, to meet the expectations of the modern world, libraries do have to change quite dramatically.

What is meant by 'the expectations of the modern world'?

Internet-enabled way of life
The Internet has made a profound contribution to modern life. Today, the web has hundreds of millions of users. To many, it is ubiquitous. It is never 'down', and as more and more high-speed broadband users are discovering, it is 'always on'.

The Internet has exposed the limitations of a service available at a physical building, with limited opening hours. More fundamentally, Internet users simply expect to be able to access any information they want, from anywhere in the world, at any time. In fact, they only notice when this *isn't* the case.

The 'need for free'
Most significantly perhaps, is the fact that, to many, the Web appears to be almost totally free. Much of the web is free to access and does not require the traditional up-front charge.

Even commercial services like Amazon and Google are free to access and search.

What impact does this have?

We can see the 'need for free' in many industries today. Music publishing has found itself trying to combat the trend for sharing music. Google and the Open Access movement are challenging the publishing model for books and journals. People even expect mobile phones, which are reasonably expensive pieces of equipment, to be provided free (albeit with contractual tie-ins to network providers.)

Essentially, there is a real expectation amongst younger web users that demands they have a right to use, modify, and pass on content with which they come into contact[1].

[1] "The Digital Natives don't think like us"
http://paulmiller.typepad.com/thinking_about_the_future/2005/10/the_digital_nat.html

There is another impact of the 'need for free' too. Service providers are now under increasing pressure to find new ways to gain monetary value from their offerings. In the mobile phone industry, for example, a free phone is seen as a small price to pay in return for a user's ongoing relationship with a network provider where they pay for calls and text messages (not to mention profitable add-ons such as photo messages and ringtones).

Libraries could be seen to be free from this pressure. After all, the library catalogue (OPAC) is already free to access and use, isn't it? This is not really the case though. Libraries' users may have free access to this service, but libraries have to pay for the data. Libraries pay by subscription for major resource discovery and sharing systems such as OCLCs WorldCat, and LinkUK or UnityWeb from Talis.

These services aggregate bibliographic and holdings data from many different libraries, each of which provide this data for free, and then charge those same libraries to use the service. Some organisations even put a claim on 'their' bibliographic records and place restrictions on use.

When Google is upgraded or otherwise enhanced, we simply benefit from those enhancements as and when they occur. There is no need for the providers to distribute updates to us. There is no need for us to install anything new. In fact, the way we access these services is completely transparent with no notion of formal releases and 'new versions.' Does anyone ever ask: which version of Google or Amazon do you use?

Unlike applications, such as Microsoft Office, which people have to purchase, install, and then maintain and upgrade locally, we now expect to simply access and use this new generation of services at will.

What do these modern world experiences mean for libraries?

The pressure on libraries to modernise the way they deliver their services is now intense and it's primarily because of the experiences people are enjoying with these Internet service providers.

The users of Amazon or Google see these services providing what are essentially rich global catalogues, free for them to access at any time. It's no wonder that the expectations on libraries to deliver quality, comprehensive, ease-to-use and available catalogues (and other services) grow ever more demanding.

2. The changing software market

Essentially, what we are witnessing with the rise of Amazon and Google is a complete transformation of the software market.

Today's software business is turning more and more towards this new generation of Internet-based 'live' software services. Even Microsoft is looking at offering applications in this way and, as a consequence, considering a radical change in its traditional business model.[2]

[2] Microsoft and the innovator's dilemma" Financial Times Thursday 3rd November 2005

So what does the new application model look like?

Well, for a start, imagine those Amazon and Google applications. These are next generation applications that are no longer built on the traditional four-layer stack and accessed or connected to other applications via the web. Instead, they are actually built on top of the Internet.

What this means is that applications are made up of a series of web-based components, which may be running, on any machine, anywhere. This is possible because the technology standards upon which they are based are web specifications such as XML (rather than complex domain standards, such as Z39.50 or MARC in the library world).

The most important implication of this is that the web connects the components together and, unlike traditional desktop applications, there is no need to buy and install hardware, operating systems, databases and application servers. A complex application can be built and run in a web browser running on a simple PC connected to the Internet.

Thanks to this, the way next generation applications are built has completely changed. These applications are flexible and modular, with each component designed to deal with a specific area of complexity (for example, geospatial information in the case of Google Maps). The capabilities of this component are then made available to any other component through an Application Programming Interface (API).

It means that components can be reused in different combinations to make up new and different applications. Application builders can leverage the data, interface, and power behind (for example) Google's mapping, rather than having to build their own version of it.

So what does this all actually mean?

What the next generation applications enable is the creation of a participative 'platform' that empowers both users and the builders of user-facing applications. In the web world, growing interest in this idea is being dubbed Web 2.0[3].

Participative applications

There's a saying that the whole is greater than the sum of the individual parts. Web 2.0 applications buy into this idea completely. Individual components are made available to all application builders to 'mix and match' and create new value-added applications.

In fact, a moderately skilled individual can combine ('mash-up') these different components to quickly and easily create quite sophisticated applications. In a recent interview for the BBC, Tim O'Reilly put this idea into a broader context:

"This whole idea of mash-ups is sort of a central Web 2.0 idea. The idea that you can build services - you can build new sites by pulling things from one site or another and blogging is another piece of this and its associated technology RSS, which is a syndication technology, whereby you can post something to your site and then you can send it out to subscribers".
It means that people and organisations that previously competed can now work together for greater, shared gain[4].

It also means that the user expectation of having information available in any application (wherever, whenever) becomes achievable.

The use of open standards enables these applications to scale to truly global proportions, taking advantage of distributed architectures and a large pool of appropriately skilled developers.

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[3] See Tim O'Reilly's What is Web 2.0 at http://www.oreilly.com/go/web2 and Paul Miller's 'Web 2.0: Building the New Library' in Ariadne at http://www.ariadne.ac.uk/issue45/miller/

[4] On "Go Digital" 9th November 2005 on BBC world service http://news.bbc.co.uk/1/hi/technology/4414550.stm

Low cost applications

Making components available for reuse in any application unlocks the potential of the software industry to deliver low cost applications. By removing the barrier of up-front charges, you also remove the stifling effect on access and innovation. Technologies can be licensed for exploitation and reuse with widely recognised Open Source licences. And, the fact that applications don't have to be built from scratch each time means that the ability to offer access to them can be free, or very low cost. Information providers can therefore meet the user 'need for free.'

Freely available applications

The move away from the software model that needs to be installed on every machine means that any application could, as Google and Amazon do, provide transparent updates to their services. Users realise their expectation of having access to the best available technology without having to maintain their systems locally at all.

3. So what does all this mean for the library?

Put simply, libraries must now begin to use these Web 2.0 applications if they are to prove themselves to be just as relevant as other information providers, and start to deliver experiences that meet the modern user's expectations.

Introducing Library 2.0

At Talis, we believe that this broader movement is helping to shape the ways in which the library world can describe and deliver a set of Web-facilitated library services (both physical and virtual) fit for the 21st Century. A Library 2.0, if you will, in which libraries work together, for and with their communities.

Library 2.0 requires evolutionary change across a wide range of systems, processes and attitudes. Talis is working to understand these, and to express requirements clearly and explicitly.

Part 2: Our view of the principles of Library 2.0

1. The library is everywhere

Library 2.0 is available at the point of need, visible on a wide range of devices, and integrated with services from beyond the library such as portals, Virtual Learning Environments and e-Commerce applications.

With Library 2.0, libraries move beyond the notion of 'libraries without walls', in which they offered a destination web site that attempted to reproduce the total library experience online.

Instead, relevant aspects of that library experience should be reproduced wherever and whenever the user requires them, without any need to visit a separate web site for the library. Information on loans, for example, should be available from within a local authority portal or a university Virtual Learning Environment (VLE) or Course Management System (CMS).

However, the pervasive library is not just about ensuring that a library is able to offer its services to you in ways and places that meet your needs and integrate with your workflow. The concept also recognises how technological improvements enable us to move beyond the highly fragmented offering currently available to UK citizens towards notions of a truly national library offering.

The pervasive library

At present, if a library user lives in Essex and discovers a book is on the shelf in a library in Scotland, there is no simple and effective library fulfilment mechanism. Present Inter-Library-Loan (ILL) mechanisms are creaky to say the least.[5] Certainly, the clumsiness of ILL contrasts badly with the ease with which the user could get the book either new or second hand from Amazon.

Might there be a value in the library integrating itself into totally different fulfilment mechanisms, such as those offered by Amazon or eBay?

Why can't information on books and other resources available to borrow appear in online bookstores as an alternative to buying? Equally, why can't information on books and other resources available to buy appear in library systems as an alternative to waiting for an item that is already on loan or only available via ILL? What role might there be for the library in mediating these choices with or on behalf of the user?

Diagram 1 shows a Talis proof of concept demonstrator that embeds a web component into an Amazon web page to show whether or not the book is held in a UK library. The holdings data is drawn, live, from Talis' UnityWeb service.

A pervasive library is a visible library. And, when a library is everywhere, it can support users in making informed choices. These users benefit from the library in new ways, and acquire valuable transferable skills in manipulating online resources.

[5] See "I can discover it but I can't have it: resource discovery and fulfilment". Panlibus blog, September 27 2005. http://blogs.talis.com/panlibus/archives/2005/09/i_can_discover.html

2. The library has no barriers

Library 2.0 ensures that information resources managed by the library are available at the point of need, and that barriers to use are minimised. In Library 2.0, there is an active presumption that use and re-use of resources is both permitted and actively encouraged.

In line with recent legislation[6] and emerging best practice[7], there is an expectation that information resources managed by the library on behalf of its users should be available for them to use and re-use wherever, whenever and however they see fit. Rather than being hidden in catalogues with a single web interface, stored in proprietary databases only visible via a project's web site, or accessible only to users of certain machines physically connected to particular networks, Library 2.0 resources should be more widely exposed. They should be available to the wider web, visible to search engines such as Google, and harvestable into new applications and services built by the library, and by third parties.

The democratisation of information
Library 2.0 is about working with partners and suppliers to increase the availability of information, challenging presumptions about the restrictions currently placed upon use and re-use. A big question for libraries should be why there isn't a single global (and free) library catalogue, not as an end in itself, but as a basis for a host of improved or totally new service offerings? There is a plethora of local, regional, national and even international systems run on a variety of different platforms. This is a huge cost in duplication, and none of them are sufficiently ubiquitous to offer any meaningful service to a population of end users. Yet, using the kind of scalable distributed technology that Google, Amazon and others deploy, we could create a genuine world catalogue with many views; local, regional, national, linguistic.

Libraries should be at the heart of the "democratisation of information" - helping to bring down the walls that surround it and enabling greater participation. A major step forward, and a foundation upon which to build, is to bring down the walls around our own systems and our own information.

3. The library invites participation

Library 2.0 facilitates and encourages a culture of participation, drawing upon the perspectives and contributions of library staff, technology partners and the wider community.

Blogs, wikis and RSS are often held up as exemplary manifestations of Web 2.0. A reader of a blog or a wiki is provided with tools to add a comment or even, in the case of the wiki, to edit the content. This is what we call the Read/Write web.

Talis believes that Library 2.0 means harnessing this type of participation so that libraries can benefit from increasingly rich collaborative cataloguing efforts, such as including contributions from partner libraries as well as adding rich enhancements, such as book jackets or movie files, to records from publishers and others.

Library 2.0 is about encouraging and enabling a library's community of users to participate, contributing their own views on resources they have used and new ones to which they might wish access.

With Library 2.0, a library will continue to develop and deploy the rich descriptive standards of the domain, whilst embracing more participative approaches that encourage interaction with and the formation of communities of interest.

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6 Freedom of Information Act, 2000. http://www.opsi.gov.uk/acts/acts2000/20000036.htm. Also The Re-use of Public Sector Information Regulations, 2005. http://www.opsi.gov.uk/si/si2005/20051515.htm.

7 The Common Information Environment and Creative Commons: Final Report to the Common Information Environment Members of a study on the applicability of Creative Commons Licences, 2005. http://www.common-info.org.uk/docs/CC-Report.pdf.

4. The library uses flexible, best-of-breed systems

Library 2.0 requires a new relationship between libraries and a wide range of technology partners; a relationship in which all parties work together in pushing the limits of what is possible whilst ensuring that core services continue to operate reliably.

A Library 2.0 empowered library challenges the traditional procurement paradigm. The old model, where a formal tender process that typically includes a detailed specification of requirements and a complex contract, is awarded to a single supplier who builds and delivers the application over many months or even years, is replaced.

Instead, components are mixed – they are not subcontractors to one another. The solution is flexible and responsive. It adapts to changing technologies and requirements, and the library is free to swap components as newer and more appropriate ones become available in the market place.

Consequently, these libraries cannot think in terms of a monolithic 'ILS' but must use best of breed components that adhere to standards, enabling modules to interoperate.

This library must engage and actively participate with a wide range of technology partners, ensuring that a modular and interoperable set of core systems remains reliable and robust. At the same time, the library must continually seek opportunities to push existing library services across new channels to new users, and to engage with existing and potential users in different ways that make sense to them.

Through its "Connexions" programme, Talis has already made some first steps by establishing collaboration agreements with those who in the past would simply have been viewed as our competitors.

The library matters

Libraries matter. We, at Talis, believe it. Most members of the library community reading this paper believe it.

But does the wider public? Do those who make the decisions that affect libraries believe it?

A great many libraries today may be regarded as serving an ageing and diminishing segment of society. They are faded, shabby: a home for musty books. Although certainly not justified, in a world of Google and Amazon, libraries may be perceived to be irrelevant.

The concept of Library 2.0 builds upon all that has been best about libraries to date, harnesses technological potential and community capability in order to deliver valuable, valued and world-class services directly to those who stand to benefit from them, whether they (ever) physically enter a library building or not.

Library 2.0 plugs the library back into the heart of the information business; delivering timely and authoritative content and services at the point of need, whenever, wherever and however that might be. To back it up, Library 2.0 systems provide access to a skilled, dedicated and valuable work force, able to assist users new and old in realising their full potential.

We welcome your thoughts on Library 2.0, and invite you to join with us in moving forward in continuing to deliver relevant, effective, engaging and engaged library services. For more information, contact Paul Miller, Technology Evangelist, Talis by email: paul.miller@talis.com or phone: 0870 400 5000.

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