Social software and libraries: a literature review from the LASSIE project

Jane Secker

Author: Jane Secker is the Learning Technology Librarian at the Centre for Learning Technology in the London School of Economics. E-mail: J.Secker@lse.ac.uk

Abstract:

Article type: Literature review
Purpose: This paper provides an overview of the published literature and current use of social software by libraries primarily in the UK and US.

Methodology/Approach: Literature review and desk research.

Findings: Libraries are experimenting considerably in this area and many Web 2.0 applications have been developed by libraries and librarians over the past few years. These tools offer the potential to enhance library services.

Research limitations/implications: The area is one of rapid change, so the findings will date quickly.

Practical implications: An overview of which technologies are being used most widely and might offer the most potential for library staff considering experimenting in this area.

Originality/value of paper: Web 2.0 is an area with which many library staff need to become familiar quickly. This paper provides a useful overview of the topic.

Keywords: Web 2.0, Social software, Technology, Blogs, Social networking, Literature review, UK.

Word Count: 7402
1. Introduction
LASSIE (Libraries and Social Software in Education) was a nine-month project, starting in March 2007, funded by the University of London Centre for Distance Education Teaching and Research Awards. The project explored new developments in web technology commonly referred to as social software (or Web 2.0) and how these might be used to enhance library provision for distance learners.

This article summarises findings from part of the project literature review (Secker, 2008) which provides an overview of social software and how this is impacting on the library community. The review also examined current issues in distance learning and libraries as a social space, however these topics are not covered in this paper. The review was undertaken at the outset of the project to inform the project team and provide context, definitions and a clearer understanding of previous research in this field. A draft report was published on the project website (http://clt.lse.ac.uk/Projects/LASSIE.php) in July 2007 and this has been updated to take into account literature published between July and December 2007. The review highlights some examples of how different types of social software are being used in the library community, recognising that much of this work is currently experimental. The review is also written at a time when the pace of change is very rapid, therefore it can only hope to provide a snapshot of what is occurring up until December 2007. The literature review informed the development of the project and the selection of pilot technologies which were explored further in five case studies.

In the context of this project, the process of undertaking a literature review was itself a valuable research exercise, as it demonstrated the challenges faced when doing research in a Web 2.0 world. Gilster highlighted this challenge in a publication arguing that:

> "Until the tools become available, the thorough scholar will supplement conventional library research with the search engines that mine the intersection of content and communication." (Gilster, in Martin & Madigan, 2007, p.49)

By this Gilster arguably meant tools such as news readers (such as Google Reader - http://www.google.com/reader/) and internet search engines, which help us to gather together the literature and supplement the references found in traditional bibliographic databases such as LISA, LISTA and ERIC. In undertaking this literature review on social software, the project team have developed new research skills and tried out new tools, as we are keen to use social software wherever possible to facilitate our research. However, it remains a challenge to stay abreast of developments in this fast moving field and the pace of technological developments is such that inevitably this literature review will date quickly. The LASSIE project officially finished in December 2007 however progress can also be tracked via the project blog which is currently still available at: http://elearning.lse.ac.uk/blogs/socialsoftware/ .

2. What is social software?

LASSIE decided early on to focus on the term 'social software' to describe the development of new tools and services that are changing the way people use the internet, making it easier to collaborate, communicate and share information. This concept is more commonly (and somewhat controversially) often described as Web 2.0, however we preferred the term 'social software' as it seems to describe the phenomena more accurately. It encompasses a huge range of tools (which are briefly discussed later) but the features many of them share are that they are hosted remotely, they facilitate sharing and communication, they allow users to add content and they are easy to use.

The phrase Web 2.0 was reputedly coined in 2004 by O'Reilly Media, although it described technologies that had been developed earlier in the1990s. Social software is not really software as such, but internet services that could ultimately replace desktop software. It is about using the Internet as a platform to run software and services rather than a desktop PC, so most software tools are hosted remotely and can be accessed from anywhere with an internet connection. The online encyclopedia *Wikipedia* (which is itself social software) describes much of the background and definition of the term (http://en.wikipedia.org/wiki/Web_2.0).

However, the term Web 2.0 has led to fierce debates between individuals such as Tim O'Reilly and Tim Berners-Lee, the 'inventor' of the World Wide Web.The debate largely centres on Tim Berners-Lee's dislike of the term Web 2.0, as he argues that the phenomena we are experiencing is simply doing what he always envisaged the Web would do: allowing people to collaborate and communicate. He also argues that many supposed 'Web 2.0' technologies have existed since the beginnings of the internet. He maintains that the development of the 'Semantic web' is far more significant. The Semantic web is about expressing web content not simply in natural language, but also in "a form that can be understood, interpreted and used by software agents, thus permitting them to find, share and integrate information more easily" (W3C, 2007).

Web 2.0 has been described as an "attitude not a technology" by Davis (2005) and this project largely steers clear of the debate about terminology. However, it is clear that something has been happening to the web in the past few years which has made it more participatory, easier for users to contribute, share and work collaboratively. It is also clear that the concept of Web 2.0 is becoming mainstream and the tools and services are becoming extremely popular. To summarise, some overall characteristics of social software or Web 2.0 include:
- development of social networks;
- content created by users rather than created by an organization;
- development of user profiles;

- use of folksonomies, or tagging, to attach keywords created by users to items to aid retrieval.

Meanwhile, the Joint Information Systems Committee (JISC) in its paper on Web 2.0 (Anderson, 2007) highlights six key concepts related to this subject:
- Individual production and user generated content
- Harness the power of the crowd
- Data on an epic scale
- Architecture of participation
- Network effects
- Openness.

Anderson's report was particularly timely and provided the UK education community with a valuable overview of what Web 2.0 is and how it might impact on the community. The report is particularly relevant as it has a special focus on the role of libraries for collection and preservation.

3. Examples of social software

There are numerous examples of social software, with the number of tools growing rapidly all the time. Therefore, this section provides a short overview of the main types of social software that exist. The key feature with any social software is that it is easy to use and is usually free at the point of use. Tagging is another key feature of most social software, which helps users manage their resources and identify other users with similar collections or interests.

3.1 RSS feeds/ Syndication/ Atom
Really Simple Syndication (RSS) is not a social software but it is a way of communicating information in a format that Feed Readers or News Reader software can understand. It has become an important way of using social software effectively. Most blogs have RSS feeds, which users can subscribe to, to ensure content is pushed into the Feed Reader of their choice, rather than having to visit a specific website to read a blog. Bradley (2007) argues that RSS is fundamental to most Web 2.0 technologies, and while people don't need to understand technically how it works, it does underpin most social software.

3.2 Blogs
Blogs are probably the most popular type of social software. They are a simple way of creating a website which is updated, often on a regular basis with 'posts'. Blogs frequently take the form of an online journal and usually only have one main author. Blog software can be set up and hosted on a server, but there are several blog providers who host the service for free. Features that blogs include are:
- commenting facilities so that others can participate in a discussion;
- tagging to associate postings with a keyword or topic;
- a calendar, so postings can be retrieved by date.
It is usually possible to subscribe to an RSS feed from a blog, so these can be read using a News Reader.

3.3 Wikis
Wikis are another very popular type of social software. They are a simple way of creating content on a website, however rather than having one author, they often have many contributors and are ideal for collaborative working. Most wikis allow contributions from people once they have registered, however others allow editing without a user needing to register. The most famous example of a wiki is *Wikipedia*, which is an online encyclopedia which can be edited by any registered user. Features include versioning and document history, so previous versions can be retrieved; discussion is also possible. Wikis can be used remotely or set up on a local server.

3.4 Social bookmarking and resource sharing
Social bookmarking tools allow users to store their bookmarks or Internet Favourites remotely on a site so that they can be accessed from any computer connected to the internet, rather than being

stored within a specific browser. Sites such as *del.icio.us* (http://del.icio.us) allow users to store, organise and share internet resources. The project team decided early on that this site would be particularly useful for storing and sharing any relevant websites for the purposes of the project and set up an account which includes links to many valuable resources found. This is publicly available at: http://del.icio.us/lse_lassie/

Other tools are also available to allow users to share other types of resources, examples include:
- bibliographic references (*CiteUlike* http://www.citeulike.org/ and *Connotea* http://www.connotea.org/);
- music, video and films (*Listal* http://www.listal.com/;
- books that you own (*LibraryThing* http://www.librarything.com/).

3.5 Social networking sites
Social networking sites are another popular type of social software. Users create a profile and join a network, which might be connected to where they live, what music they like, where they work or where they study. Both *MySpace* (http://www.myspace.com) and *Facebook* (http://www.facebook.com) are extremely popular social networking sites which primarily have a social function allowing people to make friends, talk online and share resources. Professional social networking sites (such as *LinkedIn* http://www.linkedin.com/) and those focused on education (such as *Elgg* http://elgg.net/) are also becoming popular. It is also worth mentioning that many social networking sites incorporate other Web 2.0 technologies, such as allowing users to set up blogs or Wikis.

3.6 Media sharing
The two key examples here are *Flickr* (http://flickr.com) which is a photo sharing website and *YouTube* (http://www.youtube.com/) which is a video sharing website. Users can upload their own photo or video resources to these sites and then these are available to other users of the site. Tagging makes the resources retrievable by others interested in similar subjects. However other sites exist that allow sharing of different sorts of resources, for example *Slide Share* (http://www.slideshare.net) which allows users to share PowerPoint presentations. This site became very popular amongst conference presenters during the course of the LASSIE project, allowing them to easily share their slides.

3.7 Virtual worlds
Second Life (http://secondlife.com/) and other virtual worlds allow users to create a profile and move around a virtual world. Users can attend events, buy and sell goods and there are currently a number of projects exploring its potential for teaching and learning. It was unclear whether virtual worlds are truly examples of Web 2.0 technologies, although they clearly serve a social networking function. These were not explored in any great detail during the project due to time limitations and the required technical specifications. However, an overview of the use of Second Life in Higher Education has been published for those wishing to explore this in more detail (Kirriemuir, 2007)

3.8 Other social software
This review cannot hope to outline all the social software tools that exist as the number is growing each day. There are a few other features associated with social software that are worth briefly mentioning. Personalisation functionality on websites such as *Google* and *Yahoo* often uses some Web 2.0 capabilities. For example *iGoogle* (http://www.google.com/ig) allows users to add RSS feeds to their home page so as to receive updated content from websites or blogs. Podcasts and audio blogging also fall under the social software banner, using RSS feeds as a way of keeping people up to date with new material. Mashups are also part of social software, often bringing data together from different sites and 'mashing it up' in a new way. For example *ChicagoCrime.org* (http://www.chicagocrime.org/) which uses crime statistics and *Google maps* to identify locations where crime occurs in the city.

4. Social software and teaching and learning

Educationalists and learning technologists are one group that fairly quickly began to explore the potential of social software for teaching and learning. Tools, such as blogs, are particularly useful for reflection and wikis allow for group projects and new ways of working collaboratively. Both open source and commercial Virtual Learning Environment (VLE) software has been fairly quick to develop social software functionality and there is a large amount of research currently being undertaken in this whole area.

JISC has also provided several timely publications such as the TechWatch report mentioned previously (Anderson, 2007) and a report on Web 2.0 for Content Creation for Learning and Teaching in Higher Education (Franklin and von Harmelen, 2007). The report appeared in May 2007 and included case studies from the universities of Warwick, Leeds, Edinburgh and Brighton and made a series of recommendations for further research into the potential of Web 2.0 technologies for teaching and learning. The report stated that:

> "Web 2.0 is, in our view, a technology with profound potential for inducing change in the HE sector. In this, the possible realms of learning to be opened up by the catalytic effects of Web 2.0 technologies are highly attractive, allowing greater student independence and autonomy, greater collaboration, and increased pedagogic efficiency."(Franklin and von Harmelen, 2007, p.1)

The report also highlighted a number of areas where further research was required to explore issues such as Intellectual Property Rights (IPR) and copyright, the impact on plagiarism, potential application of Web 2.0 for institutional repositories and issues such as privacy and data protection, in particular if services are hosted remotely. Since May 2007, JISC has produced several other documents on Web 2.0 technologies, such as a briefing paper (JISC, 2007a) and an overview of student perceptions of the value of social software (JISC, 2007b). Clearly Web 2.0 is still a hot topic in the education community. Finally, another JISC funded study, published in January 2008 on the Google Generation (CIBER, 2008) has some interesting observations about young people's behaviour when searching for resources and using the internet. The report found that while young people were happy to use computers, their information literacy skills were limited. While the report does not specifically focus on Web 2.0 developments, when launching the report, Lynne Brindley, British Library Chief Executive recognised the importance of Web 2.0 technologies:

> "Libraries have to accept that the future is now. At the British Library we have adopted the 'Wiki' view and the 'Beta' mindset. We have seized many of the opportunities new technology offers to inspire our users to learn, discover and innovate. However, we must do more and welcome the report findings, particularly the need to equip users of all age-groups with wider information and digital literacy skills." (JISC, 2008)

5. Social software in libraries and Library 2.0

The library community is another community that has been exploring the potential of social software to enhance services for a number of years. The phrase 'Library 2.0' was coined by Michael Casey in 2005 who sees Library 2.0 at its heart being about "user-centred change" (Casey, 2006). The term encapsulates the idea that library provision can be enhanced using social software and Web 2.0 technologies, although again the terminology itself has proved to be controversial. Crawford (2006) found 62 different views and seven distinct definitions of the term which he usefully brought together in *Cites and Insights*. He argued the term is confusing, and as well as a concept, it is also a bandwagon which has been used to "deride libraries as being irrelevant, rigid and unresponsive to change".

A number of the concepts associated with social software, in particular the idea of 'user generated content' does make some librarians uncomfortable. Many Web 2.0 technologies allow users to 'tag' resources, which has been likened to adding subject headings. It allows resources that have been similarly tagged to be shared between users. However tags are devised by a user, and can be employed inconsistently or with different meanings. For librarians, particularly cataloguers, familiar

with controlled vocabularies such as Library of Congress Subject Headings, may find the idea of allowing users to come up with their own descriptive terms akin to anarchy. Similarly there has been a lot of work undertaken in the library world to devise standards and to develop metadata schemas to describe web resources. The idea of tagging can sometimes be seen as a counter movement to these standards. Nevertheless, these ideas need not be seen as competing and tagging is coming to be viewed as an additional way of describing resources, not an alternative to creating good quality metadata.

Crawford argues that librarians should not focus on the technology but focus on the phenomena made possible by social software technologies, which essentially means participation and the facilitation of conversations. Crawford recognises that Library 2.0 as a concept may cause problems in libraries, as the term has been linked to a negative view of the library. He also sees that there can be problems integrating these technologies into libraries which have not traditionally used open source systems, but integrated monolithical systems such as catalogues.

The UK library system suppliers have been vocal in the Library 2.0 world and Paul Miller, a Technology Evangelist from Talis, sets out "Paul's Principles of Web 2.0" which included characteristics such as it being about:

- Sharing and communication
- Remix
- Built on trust
- Freeing of data
- Participatory
- Community building
- User generated content
- Modular.

Miller, a keen advocate of the Library 2.0 movement and concept, argues:

> "Leveraging the approaches typified by Web 2.0's principles and technology offers libraries many opportunities to serve their existing audiences better, and to reach out beyond the walls and websites of the institution to reach potential beneficiaries where they happen to be, and in association with the task that they happen to be undertaking." (Miller, 2005)
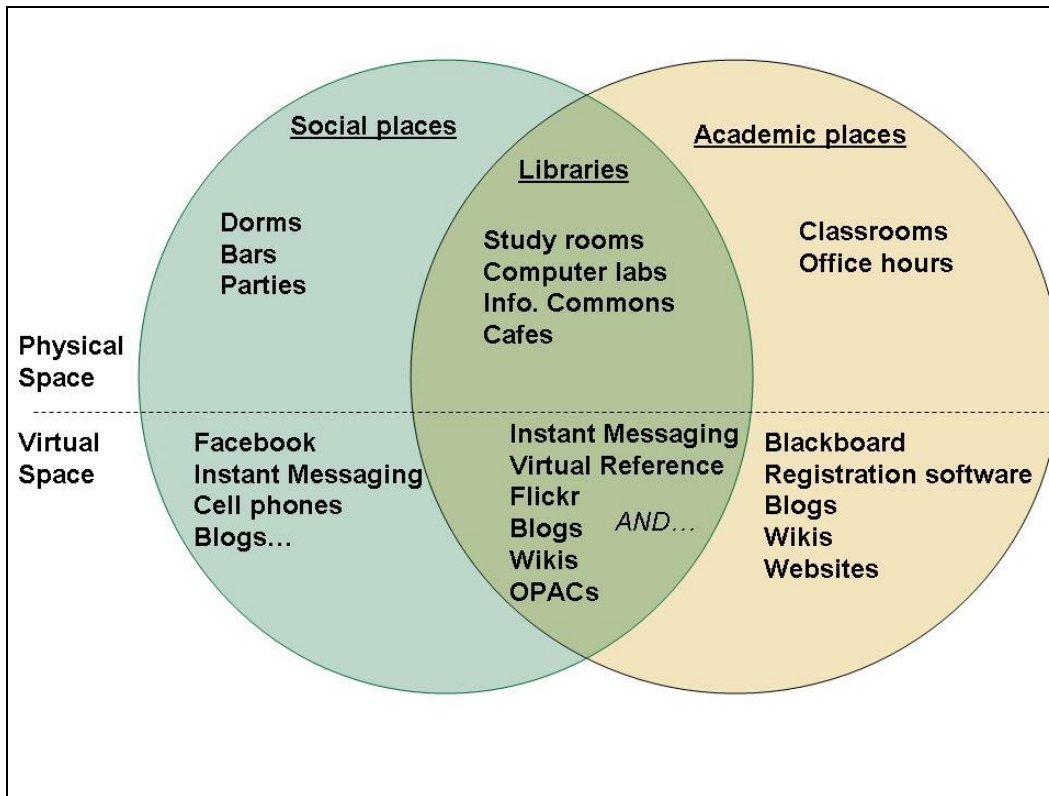
Moreover, Miller suggests that if libraries are to continue to remain relevant and serve their users they must engage with these technologies, otherwise users:

"…will bypass processes and institutions that they perceive to be slow, unresponsive, unappealing and irrelevant in favour of a more direct approach to services offered by others that just might be 'good enough' for what they need to do." (Miller, 2005)

This attitude is typical of the negative associations Crawford (2006) cites with the Library 2.0 band-wagon. The idea that we have to engage otherwise we will become irrelevant could be seen as polarising opinions in the library world. Building on the strengths of traditional library services and enhancing them with new technology should surely be the way forward? It is also fair to say that the UK is currently experiencing a Library 2.0 band-wagon, with a daily round of events and seminars being advertised on the topic. UKOLN's Web Focus (http://ukwebfocus.wordpress.com/) led by Brian Kelly gives advice to the Higher Education (HE) and Further Education (FE) sector in the UK about how to utilise these technologies and how to overcome the barriers within institutions. Similarly, Phil Bradley, an internet consultant, has given a lot of presentations and training sessions in this area and has published a book on how to use Web 2.0 in libraries (Bradley, 2007). It was also clear from the number of presentations the project team were asked to give relating to LASSIE, that social software was a particular area of interest. Therefore it is slightly concerning that some librarians continue to view the Library 2.0 concept as somewhat threatening, rather than simply more tools and technologies that can to enhance their current skills and professional activities. A useful diagram (as seen in Figure 1), available from Flickr, encapsulates Habib's view of Library 2.0.
Take in Figure 1

Figure 1 Library 2.0 (From Michael Habib's Flickr site (Licensed under Creative Commons): http://www.flickr.com/photo_zoom.gne?id=222296001&size=o)

Social places

Academic places

Libraries

Physical Space

Dorms
Bars
Parties

Study rooms
Computer labs
Info. Commons
Cafes

Classrooms
Office hours

Virtual Space

Facebook
Instant Messaging
Cell phones
Blogs...

Instant Messaging
Virtual Reference
Flickr
Blogs   *AND...*
Wikis
OPACs

Blackboard
Registration software
Blogs
Wikis
Websites

A report from OCLC gives us an insight into librarians' attitudes towards one specific type of social software: social networking (OCLC, 2007). The report looked at four key areas including:

- user practices and preferences on their favourite social spaces;
- user attitudes about sharing and receiving information on social spaces, commercial sites and library sites;
- information privacy; what matters and what doesn't;
- librarian social networking practices and preferences; their views on privacy, policy and the potential of social networks for libraries.

The overwhelming message the library community seem to have taken from this report is that social networking is "not for libraries". (Buckley-Owen, 2008; p.3). Nevertheless, it should be noted that the OCLC survey of librarians was limited to US library directors, although the survey of users was more extensive and included individuals in Canada, France, Germany, Japan, the UK and US. Some interesting findings from the report include:
- Web users like to share. Sharing is no longer just a library thing.
- Since the last OCLC report in 2005 there has been a drop in the use of library websites.
- The idea that we are all 'digital natives' now; the majority of people who responded to the OCLC survey have been using the Web for at least four years.
- People do not trust libraries as much as we might expect.
- Overwhelmingly, neither the general public nor librarians see a role for libraries as providers of social sites.

The report was actually highly positive about the Library 2.0 concept and concluded that libraries need to be brave, to relax their rules and to encourage mass participation in the social library, which inevitably will be messy. By looking at Library 2.0 pioneers the report argued:

> "The social web is not being built by augmenting traditional websites with new tools. And a social library will not be created by implementing a list of social software features on our

current sites. The social web is being created by opening the doors to the production of the Web, dismantling the current structures and inviting users in to create their content and establish new rules." (OCLC, 2007; 8-8)

At this time (early 2008) it is clear that Library 2.0 continues to polarise opinion in the library community and there is a real need for evidence to prove the value that these new tools might add to traditional services.

6. Libraries using social software

Despite reservations and the hype, many libraries are taking the plunge and experimenting with social software. There are some genuinely useful examples of how the technology can enhance our services. Many of the examples are from libraries in the US, which began exploring social software somewhat earlier than in the UK. In general the literature search found a huge number of articles in academic journals, but also more reports on such innovations were found on blogs and on the Web rather than in traditional published literature. There are many lessons that can be learnt from our US counterparts' early experimentation. Therefore this next section attempts to provide some examples of libraries using social software and to draw conclusions where possible about its usefulness.

It is also worth mentioning that librarians in other countries outside the US are also starting to explore the use of social software technologies, for example Judy O'Connell, who works in school libraries in Australia, maintains a blog which has much relevant information at: http://heyjude.wordpress.com/. Similarly, Kathryn Greenhill from Western Australia who works at a university library maintains the popular 'Librarians Matter' blog: http://librariansmatter.com/blog/

A few useful monographs on the subject of social software in libraries were published in 2007, notably by Farkas (2007) who developed the hugely popular 'Five weeks to a Social Library' online course. Bradley's book (Bradley, 2007) provides a valuable overview of what Web 2.0 technologies are and how they can be used by librarians, both personally and to enhance library services. Other notable books on the subject include: Casey & Savastinuk (2007) and Sauers (2006) which looks specifically at blogs and RSS. In July 2007 we predicted the market might shortly be flooded with similar titles which will provide us with many useful ways in which we can exploit the new technologies. There has been a new monograph publication focusing specifically on Web 2.0 in academic libraries (Cohen, 2007) and several others that are forthcoming (Parkes and Hart, 2008). Godwin and Parker (2008) will focus specifically on Web 2.0 and information literacy and should be of particular interest.

The following entries have been categorised by type of technology.

6.1 RSS feeds
 RSS feeds are now being used increasingly frequently and library system vendors are starting to add RSS feed functionality into catalogues and other library systems to allow feeds of new books or new resources to be set up. The following represent a small sample of examples and many large universities are now using RSS feeds.

a) The Massachusetts Institute of Technology (MIT) Libraries (http://libraries.mit.edu/help/rss/barton/) use RSS feeds to highlight new books as these are added to the library catalogue. Users can select a feed for the subject that they are interested in and this can be added to any web page. This functionality could be particularly useful for adding feeds to subject web pages or directly into courses in a VLE. MIT Libraries also have a Libraries News feed and a feed for new theses added to their repository. They also maintain a useful link of RSS feeds for research which includes information about which publishers offer RSS feeds: http://libraries.mit.edu/help/rss/feeds.html

b) Amazon has RSS feeds for new books on a huge variety of subjects which can be used in this way. More details about the Amazon feeds are available at: http://www.amazon.com/gp/tagging/rss-help.html

c) The Centre for Learning Technology (CLT) at the London School of Economics (http://training.lse.ac.uk/) uses RSS feeds to bring together a range of different training events from different providers into one training website. CLT, IT Services, the Library and the Teaching and Learning Centre all maintained separate databases of training courses, however it is now possible to go to one website and see an aggregated list of training across the institution. CLT are also using a blog to feed news content onto its website. Any blog postings tagged as 'CLTNews' automatically appear on the home page in the news section (http://clt.lse.ac.uk).

d) The Open University has developed RSS feeds for a number of library resources, for example lists of new books and electronic resources are available as feeds (http://library.open.ac.uk/services/lib20servs/rssfeed/index.cfm). This type of feature can allow lecturers to 'pull' library content into their own personal websites, or into a course website such as one developed on a VLE.

6.2 *Social bookmarking tools*

a) PennTags **i**s a social bookmarking tool developed by librarians at the University of Pennsylvania for locating, organising and sharing online resources (http://tags.library.upenn.edu/). Users can collect and maintain URLs linking to journal articles and records in the library catalogue. They can develop bibliographies and reading lists which can be shared with the community. Users download a specialised toolbar or use something called a 'bookmarklet' which allows content to be added to PennTags. At Pennsylvania the tool also allows users to tag library content found in the OPAC and the institutional repository.

b) Several libraries have started to use the social bookmarking tool del.icio.us to create subject lists of resources (http://del.icio.us). The resources are 'tagged' and in several examples the del.icio.us tags have been embedded into the library website. The use of del.icio.us is examined in more detail in a LASSIE case study (http://clt.lse.ac.uk/Projects/Case_Study_Two_report.pdf). The Queensland Institute of Technology (http://www.library.qut.edu.au/subjectpath/internetresourcesforci.jsp) and Stanford University (https://www.stanford.edu/group/ic/cgi-bin/drupal/delicous) are two examples of libraries using social bookmarking in this way.

6.3 User generated content in the catalogue
Several libraries are experimenting with allowing user content to be added directly to the catalogue. This can include allowing users to add book reviews or other comments to the catalogue. Hennepin County Library **(**http://hzapps.hclib.org/catalog/), in the US state of Minnesota, includes book reviews and discussion in its library catalogue. Users can comment on books and add reviews, similar to the functionality offered by Amazon, and also LibraryThing. In the UK, the University of Huddersfield (http://webcat.hud.ac.uk/)
has made use of Web 2.0 technologies to enhance the library catalogue, including features such as user reviews and ratings, and 'pulling' content from Amazon into the catalogue. Staff there have also added features such as making recommendations based on borrower records, so providing users with a link that says "people who borrowed this book also borrowed…".

6.4 Blogs
Librarians seem to enjoy writing personal blogs and there are several on the topic of Web 2.0 which have a lot of useful information. A sample list of useful blogs on the topic of libraries and Web 2.0 that were used throughout the project were:

- Information Wants to be Free http://meredith.wolfwater.com/wordpress/index.php
- Dave Pattern's Blog http://www.daveyp.com/blog/
- Peter Godwin's Web 2.0 and Information Literacy blog http://infolitweb.blogspot.com/
- The Shifted Librarian http://www.theshiftedlibrarian.com/
- Phil Bradley's Web 2.0 blog http://philbradley.typepad.com/i_want_to/

- Are you 2.0 Yet? http://briangray.alablog.org/blog
- Library Crunch http://www.librarycrunch.com/
- Library 2.0: an academic perspective http://liblogs.albany.edu/library20/
- Friends:Social Networking Sites for Engaged Library Services http://onlinesocialnetworks.blogspot.com/
- iLibrarian: http://oedb.org/blogs/ilibrarian/
- The Distant Librarian: http://distlib.blogs.com/distlib/
- Infodoodads: http://infodoodads.com/.

Many libraries are using organisational blogs for posting library news. Examples from the US include:

- Madison-Jefferson County Public library: http://mjcpl.org/
- Ohio University Library Business Blog http://www.library.ohiou.edu/subjects/businessblog/
- Kansas State University library blogs http://ksulib.typepad.com/.

However, UK libraries are also starting to experiment with using blogs and several excellent examples were discovered throughout the course of the LASSIE Project. The University of Worcester Information and Learning Services, for example, maintain several blogs including ILS Matters aimed at students (http://www2.worc.ac.uk/wordpress/) and Update (http://altupdate.wordpress.com/) aimed at academic staff and used by the subject librarians. Staff at Worcester also run several other blogs for internal communication purposes in the library.

A list of example blogs by libraries was compiled as part of the 'Five weeks…' course (http://www.sociallibraries.com/course/week1#examples). Sauers (2006) also provides numerous examples of librarians who maintain blogs and includes considerable details about how to set one up. Further details about libraries and blogs are also included in the LASSIE case study on *Blogging and libraries (*http://clt.lse.ac.uk/Projects/Case_study_four_report.pdf*).

6.5 Wikis
Wikis have particular value for collaborative projects, for team building and for knowledge sharing. Anecdotal evidence suggests that wikis are increasingly being used internally by organisations and LSE has established a number of wikis used by staff in the CLT Technology, for minutes and team meetings and by library staff. A list of wikis used by libraries is available as part of the 'Five weeks…' course (http://www.sociallibraries.com/course/week3#examples)

The Library Success wiki was developed by Meredith Farkas, who is the Distance Learning Librarian at Norwich University in the US state of Vermont. The wiki is a best practice tool, which was created to be a one-stop shop for ideas and information for all types of librarians. The wiki states:

"All over the world, librarians are developing successful programs and doing innovative things with technology that no one outside of their library knows about. There are lots of great blogs out there sharing information about the profession, but there is no one place where all of this information is collected and organized. That's what we're trying to do." (http://www.libsuccess.org/index.php?title=Main_Page)

The National Archives in the UK have recently added a wiki to their site to encourage users to add content to their site (http://yourarchives.nationalarchives.gov.uk/index.php?title=Home_page). Called "Your Archives", they are encouraging people with knowledge of archival material to add content to the wiki.

6.6 Libraries and social networking

Libraries and librarians have increasingly been exploring social networking sites for both personal and professional reasons. Week four of the 'Five weeks..' course looked at social networking sites and the potential of Second Life, MySpace and Facebook for libraries (http://www.sociallibraries.com/course/week4). Talis, a UK library management supplier has funded Cybrary, which is its headquarters in Second Life and evidence suggests that several libraries are experimenting with offering services in Second Life. For further details about the impact of Second Life on education Kirriemuir (2007) provides a useful overview.

Some libraries have also set up MySpace accounts. However, until recently social networking sites had varying attitudes about whether this was officially permitted and library accounts on both MySpace and Facebook needed to be created as a personal profile. For example, Brooklyn College Library in New York has over 3000 'friends' and is using the MySpace site to publicise various library activities (http://www.myspace.com/brooklyncollegelibrary).

Facebook launched a service called 'Facebook Pages' in late 2007 and this gives libraries and other organisations the ability to create a page on this site. This service is relatively new, but several libraries are experimenting with it, for example:
- Aurora University, Charles B. Phillips Library, in Illinois (http://www.facebook.com/pages/Aurora-IL/Aurora-University-Charles-B-Phillips-Library/8769270978?ref=s)
- University of Winnipeg Library in Manitoba, Canada (http://www.facebook.com/pages/Winnipeg-MB/University-of-Winnipeg-Library/6195503546?ref=s)
- Duke University Law Library in North Carolina (http://www.facebook.com/pages/Durham-NC/Duke-University-Law-Library/7739830819?ref=s)
- University of Warwick Library in the UK (http://www.facebook.com/pages/Coventry-United-Kingdom/University-Of-Warwick-Library/6168162503).

A growing number of groups for librarians interested in all sorts of professional issues, including Web 2.0 developments, have been set up in social networking sites. Facebook has numerous groups for librarians such as the Library 2.0 Interest Group which also maintains a website (http://liswiki.org/wiki/Library_2.0) and the group called Librarians and Facebook which (as of January 2008) has over 4000 members. Facebook also has a number of library related applications that can be added to a personal profile to allow users to share reading lists, social bookmarks and other resources they are interested in. The social networking site Ning has a useful Library 2.0 group (http://library20.ning.com/). For a full report on the use of Facebook by libraries and librarians, see LASSIE *Case Study Five: Facebook and Libraries (*http://clt.lse.ac.uk/Projects/Case_Study_Five_report.pdf).

6.7 Other tools and technologies

The Library of Congress in the US uses the photo sharing website, Flickr, to share some of its historical photographic material (http://www.flickr.com/photos/Library_of_Congress). Several other libraries have been using Flickr in this way, such as Hillsdale Teen Library in Oregon which uses Flickr to post pictures of events at the library (http://www.flickr.com/photos/hillsdalelibraryteens).

A very recent initiative by several libraries is the use of YouTube to upload video material for promotional or training purposes. Some examples include:
- Otis College in California has produced a video, Information Literacy: identify your sources (http://uk.youtube.com/watch?v=k-2hziLTSyU)
- The State Univeristy of New York College of Environmental Science and Forestry has numerous videos on topics such as using the library catalogue (http://uk.youtube.com/watch?v=qVl3CUiru4E) and finding a journal article (http://uk.youtube.com/watch?v=cZ1PtXuzK0A).

Increasingly, PowerPoint presentations are being shared using social software, such as SlideShare.The LASSIE team experimented with this (http://www.slideshare.net/seckerj/lassie-lse-library).

Social software is encouraging libraries to become more experimental and several US libraries are promoting 'beta' (partly developed) services and tools via their websites. Some examples of these include:

- MIT Libraries Betas (http://libraries.mit.edu/help/betas/)
- University of Michigan, MLibrary Labds (http://www.lib.umich.edu/labs/)
- New York Public Library, NYPL Labs (http://labs.nypl.org/)
- University of Virginia, Library Lab (http://lab.lib.virginia.edu/index.html)
- Vanderbilt University, Test Pilot (http://testpilot.library.vanderbilt.edu/).

7. Other issues of social software

Social software in libraries raises a number of other issues which were not examined in great detail in the LASSIE project, but are relevant and require further research.

7.1 Staff development issues

Quite a lot has been written aimed at developing librarians' skills and knowledge in the area of Web 2.0 technologies and to familiarise them with the technologies and to raise awareness of their potential. Notable resources include the 'Five Weeks to a Social Library' course which ran in 2007 (http://www.sociallibraries.com/course/).

7.2 Privacy, IPR, copyright issues of social software

JISC highlighted the issues of privacy, IPR and copyright as being pertinent to the teaching and learning community and they are similarly relevant in the context of library developments. Storing personal data on remote systems raises obvious privacy issues, but IPR and copyright issues also need exploring further.

7.3 Technical and institutional barriers

The JISC report also highlighted technical barriers to using social software in educational establishments (JISC, 2007a). Certain social software may conflict with security systems, or be blocked by firewalls. Institutional IT departments may be inherently opposed to the idea of social software.

7.4 Archives and Web 2.0

LASSIE was fortunate to have an archivist on the project's Steering Group and this input proved extremely valuable. Archivists, like librarians, have become increasingly interested in Web 2.0 developments, as the technology could offer them particular advantages. Researchers often end up knowing far more about archival material than the archivists themselves, because of the amount of time they spend using particular collections, and the traditional reading room environment does not always offer them many opportunities to share knowledge and information with other researchers using the same, or related, collections. Social software has the potential to help them make these connections, as for example with The National Archives 'wiki' mentioned earlier. It also offers archivists the opportunity to communicate and engage with their users in new ways. One of the project's case studies looks at the way LSE Archives mounted an online exhibition using blog software, thus enabling visitors to add their own comments to the display.

7.5 Data and Web 2.0

The management of data sources is another area where Web 2.0 technologies again could be hugely valuable. Data sources are increasingly being managed in online repositories, however the addition of user generated content and comments, could provide a valuable supplement to the traditional metadata and cataloguing that is being undertaken by repository managers. There are several projects currently underway in this area including:

- Data360 http://www.data360.org

- Many Eyes http://services.alphaworks.ibm.com/manyeyes/home
- Swivel http://www.swivel.com/.

8. Conclusion

Social software and Web 2.0 technologies seem to offer enormous potential for the library community, as they do for the education community more widely. There is a tremendous excitement and new tools are continuously being developed. Advocates of Web 2.0 technologies such as Bradley (2007) and Farkas (2007) argue that librarians should start experimenting and using these tools to enhance the services they offer. However, it is useful at this time to reflect on the experiences to date, to consider the central purpose of libraries and then to select tools that really do make a difference to our users.

The LASSIE literature review (Secker, 2008) highlighted that our library buildings serve an important role as a physical space where learning and interaction takes place. Literature in this field has helped to shape our thinking about the value of social software for libraries and to address the issue of whether there is a specific social function that could be replicated for those unable to visit the building. It is clear that collaboration and communication has become increasingly important in the way we learn and our new library buildings are starting to reflect this shift. The role of the librarian as the facilitator of collaboration and communication could become crucial in the Web 2.0 world. It is also worth noting that in virtual worlds, notably Second Life, many organisations, including libraries have embarked on building learning spaces such as libraries. Individuals who use Second Life also report on visiting these places and so the role of the virtual and physical library becomes increasingly interesting and increasingly blurred. This review will undoubtedly date quickly but the LASSIE team hopes that it provides a valuable summary of the current debate surrounding the implementation of Web 2.0 technologies in libraries and documenting progress to date.

References and further reading (All URLs were checked 5th March 2008)

Anderson, Paul (2007), *What is Web 2.0? Ideas, Technologies and Implications for Education,* JISC TechWatch report. Available at:
http://www.jisc.ac.uk/media/documents/techwatch/tsw0701bword.doc

Black, Nancy E. (2001), "Emerging technologies: tools for distance education and library service", *Journal of Library Administration*, Vol. 31 No.3/4, pp. 45-60.

Bradley, Phil. (2007), *How to Use Web 2.0 in your Library.* Facet Publishing, London.

Buckley-Owen, Tim (2008), "Are these sites just hype?", *CILIP Gazette,,* 11-24th January, p.3.

Casey, Michael and Savastinuk, Laura C. (2006), "Library 2.0: service for the next-generation library", *Library Journal*, 1st September. Available at:
http://www.libraryjournal.com/article/CA6365200.html

Casey, Michael E. and Savastinuk Laura C. (2007), *Library 2.0: A Guide to Participatory Library Service,* Information Today, Inc. Newark, New Jersey.

CIBER (2008), *Information Behaviour of the Researcher of the Future,* CIBER Briefing Paper, Available at: http://www.ucl.ac.uk/slais/research/ciber/downloads/ggexecutive.pdf

Cohen, Laura B. (2007) *Library 2.0 Initiatives in Academic Libraries,* American Library Association, Chicago.

Crawford, Walt (2006), "Library 2.0 and "Library 2.0"", *Cites & Insights,* Vol.6 No.2. Available at:
http://citesandinsights.info/v6i2a.htm

Davis, I. (2005), "Talis, Web 2.0 and all that", *Internet Alchemy blog*, 4 July. Available at:
http://internetalchemy.org/2005/07/talis-web-20-and-all-that

Evans, Beth (2006), "Your Space or MySpace?", *Library Journal*, October 15. Available at:
http://www.libraryjournal.com/article/CA6375465.html&

Farkas, M. (2007), *Social Software in Libraries: Building Collaboration, Communication, and Community Online,* Information Today Inc., Newark, New Jersey.

Franklin, T. and von Harmelen, M. (2007), *Web 2.0 for Content Creation for Learning and Teaching in Higher Education,* JISC, London. Available at:
http://octette.cs.man.ac.uk/~mark/web2.0_for_comment.pdf

Godwin, Peter and Parker, Jo (2008), *Information Literacy meets Library 2.0,* Facet Publishing, London.

Gilster, Paul (2004), "Digital fusion: defining the intersection of content and communications" in Martin and Madigan (pp.42-50) in Martin & Madigan (2007).

JISC (2007a), *Web 2.0 and Social Software: An Introduction,* JISC Briefing Paper. Available at:
http://www.jisc.ac.uk/publications/publications/web2socialsoftwarev1.aspx

JISC (2007b), *In Their Own Words: Understanding the Issues and Benefits of Social Software,* Available at:
http://www.jisc.ac.uk/media/documents/programmes/elearningpedagogy/iowpersonalsoftwarepdf.pdf

JISC (2008), *The Myth of the Google Generation, JISC News Report.* Available at:
http://www.jisc.ac.uk/news/stories/2008/01/googlegen.aspx

Kirriemuir, John. A. (2007), *A July 2007 "Snapshot" of UK Higher and Further Education Developments in Second Life.* Eduserv Foundation. Available at:
http://www.eduserv.org.uk/upload/foundation/sl/uksnapshot072007/final.pdf

Lankes, R.D., Silverstein, J. and Nicholson, S. (2007), *Participatory Networks: the Library as Conversation,* Executive Summary, produced for the American Library Association. Available at:
www.ala.org/ala/washoff/washevents/midwinterwo/past/2007/partnetssummary.doc

Lenhart, Amanda and Madden, Mary, (2007), *Social Networking Websites and Teens: An Overview*, Pew Internet & American Life Project. Available at:
http://www.pewinternet.org/pdfs/PIP_SNS_Data_Memo_Jan_2007.pdf

Martin, Allan and Madigan, Dan (eds.) (2007), *Digital Literacies for Learning,* Facet Publishing, London.

Miller, Paul (2005), "Web 2.0: Building the new library", *Ariadne*, Issue 45. Available at:
http://www.ariadne.ac.uk/issue45/miller/intro.html

OCLC (2007), *Sharing, Privacy and Trust in Our Networked World.* Available at:
http://www.oclc.org/reports/sharing/

O'Reilly, T. (2005), *What is Web 2.0.* Available at: http://www.oreilly.com/go/web2

Parker, Jo (2007), *IL Gets Social: Distance Learners Venture Beyond Google,* paper presented at LILAC 2007 conference. Available at:
http://www.cilip.org.uk/specialinterestgroups/bysubject/informationliteracy/lilac/lilac2007

Parkes, David and Hart, Liz (2008), *Web 2.0 and Libraries: Impacts, Technologies and Trends,* Chandos Publishing, Oxford.

Rusbridge, Chris (1998), "Towards the hybrid library", *D-Lib Magazine,* Vol. 4 Nos7/8. Available at: http://www.dlib.org/dlib/july98/rusbridge/07rusbridge.html

Sauers, Michael P. (2006), *Blogging and RSS: A Librarian's Guide.* Information Today, Inc. Newark, NJ.

Secker, Jane (2004), *Electronic Resources in the Virtual Learning Environment: A Guide for Librarians,* Chandos, Oxford.

Secker, Jane and Price, Gwyneth (2007), "Libraries as a social space: enhancing the experience of distance learners using social networking tools", Paper given at the *7th Libraries Without Walls Conference.* Molyvos, Lesbos, Greece. 15th-18th September 2007. Available at: http://www.cerlim.ac.uk/conf/lww7/slides/SeckerPrice.ppt

Secker, Jane (2008), *Libraries, Social Software and Distance Learners: a Literature Review.* Available at: http://clt.lse.ac.uk/Projects/LASSIE_lit_review_final.pdf

W3C (2007), *W3C Semantic Web Frequently Asked Questions,* World Wide Web Consortium. Available at: http://www.w3.org/2001/sw/SW-FAQ#What1