

Building Participative Library Services:

How Social Software is being used in Public Libraries

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1. Introduction to How Social Software is being used in Public Libraries and its Significance

Public libraries are evolving, in both form and function. Far from being purely repositories for hard copy collections, public libraries these days are centres of information and communication in all media. The growth of online information sources has challenged public libraries to demonstrate and publicise the ways they can add value to the user experience. Public library staff are interested in how the latest technology could be used to deliver an enhanced user experience and keep public libraries relevant to their users in an ever changing world.

Therefore it was not surprising that public library staff were interested when people started talking about a new generation of web technologies that would allow users to contribute content, develop communities and share knowledge. Public librarians have always worked to encourage more people to use the library and to make library services relevant and interactive, and these new technologies seemed like a good way to continue the good work in the online world.

Discussion of this new group of technologies is happening under several different names; “Web 2.0”, “Library 2.0”, “social software” and “social networking software”. This research will refer to these technologies using the term social software. Under the umbrella of this term come tools like blogs, Really Simple Syndication (RSS) feeds, wikis, photo-sharing applications and discussion forums.

Social software is attractive to librarians because it is popular with the public and cheap to implement. It is also appealing because it facilitated the achievement of public library goals. Social software encourages participation, inclusion and the development of communities; all things that public libraries are already trying to do.

The exponential growth and popularity of these technologies has encouraged many public librarians to reassess the ways they provide online information as well as the kinds of online information they provide. The two-way interaction encouraged by social software has the potential to make library services much more interactive and for users to become involved in creating content themselves. For example, library

users can use social software to comment on the library website, write and submit a book review or share old family photos with the rest of the library community. It also has the potential to draw in new users to the library community. Social software could help attract those who may not be regular users of the library, those who cannot reach the physical library due to distance, or those who feel more comfortable in an online environment. The argument for social software is that it will make the library more relevant, more user-driven and easier to access. In other words, it will bring the library further towards the centre of the community in the 21st century.

Although many public library staff are interested in providing social software tools for their users, relatively few have begun taking action along these lines. This is partly due to the new nature of the subject, but also partly because there is no in-depth study that library staff can look at to learn from the experience of others. This study addresses the need to examine and record the activities of public libraries relating to social software so that learning can be derived from the experience of innovators. Documentation and analysis of social software use will also facilitate the evolution of this form of information technology and produce the social benefits that can be derived from understanding the situation further.

This research project examines the factors that lead public libraries to adopt social software and the impact that adoption decisions have made on these libraries. Rogers' (2003) Diffusion of Innovations (DOI) theory is used at several points to provide a framework for analysis. The specific research question that has been answered is "How are public libraries using social software?" The study addresses the specific research question by way of four sub-questions:

- Which kinds of social software are public libraries using;
- How are they using them;
- What impact have they had;
- What are the attributes of the diffusion of social software.

The intent of this research question is to explore library staff perceptions of the benefits and impact of social software by identifying and interviewing staff members who can be considered "early adopters" (Rogers, 2003) of this technology. The primary objective of this exploration is to provide public libraries with a basis on which to assess potential adoption decisions for social software. A secondary

objective is to provide a building block for further research into social software use in the library and information service environment, and a further secondary objective is to stimulate debate and further research.

This research provides insight into the experiences and opinions of staff in public libraries who have adopted social software. It presents and analyses data gathered from respondents in seven public libraries in New Zealand and the United States who are using or have used social software in their libraries. The study reports on the difficulties encountered in social software implementation and use, as well as on the benefits of social software. It is anticipated that public librarians who are considering implementing social software will be able to use this information to learn from the experiences of those who took part in the research. It is also hoped that the participants will be able to use this research project to reflect on their own experiences. A summary of results will be provided to the participants by the researcher in exchange for their contribution.

The growing popularity of social software has prompted an increasing volume of discussion: in blogs, in conference papers and in practitioner journals. Because these tools are relatively new, much of the literature consists of conceptual overviews, introductory articles or discussion of individual examples of social software.

Literature that does discuss how social software is being used in libraries is mostly limited to very short descriptive examples of how these technologies are being used or to case studies of how social software is being used in one specific library context. Additionally, none of the case studies identified took a public library as its subject. In other words, there is an explosion of talk around the concept of social software, but a literature review identified no academic study of how it translates into action in the public library context. This research aims to fill the identified gap in the literature.

2. Definition of Terms

Because language has many shades of meaning, it is important that the researcher and the audience share the same definitions for key terms in the study. Definitions of the terms public library and social software are included for this reason. Definitions are also included for some of the technological tools that fall under the banner of social software, as these terms may be unfamiliar to some readers.

2.1 Public Library

For the purposes of this study, a public library is defined as an institution that provides “public access to information to meet a wide range of user’s needs” (Chalmers et al., 1995, in Tran, 2006, p. 10). This definition of a public library has traditionally applied to the community around which the library is physically based. In the digital age, this definition can be applied equally well to an online environment.

2.2 Social Software

When this study refers to the term social software, it refers to the broad cluster of software that allows user participation and encourages the creation of user created content. The phenomenon of social software is known under a variety of different terms, however this term has been chosen because it foregrounds the philosophy of inclusion and participation underlying the technology. Terms such as Web 2.0 or Library 2.0 have been avoided because their definitions are rather unclear. As Macaskill and Owen (2006) commented, “the term Web 2.0 is such a nebulous (and evolving) concept it’s almost impossible to pin down a clear definition, let alone understand its accompanying jargon” (p. 2).

2.3 Blogs

A blog (or weblog) is a website that contains discrete entries arranged by time and date, with the newest post at the top of the page.

2.4 RSS Feeds

RSS feeds are a technology often associated with blogs. An RSS feed capacity on a blog allows its content to be gathered and re-presented in another site.

2.5 Wikis

Wiki technology allows users to quickly create and edit the content of web pages. When taken together, these pages form a series of hyperlinked wiki pages that can be openly edited.

2.6 Instant Messaging

Instant messaging is a method of communicating over the internet in real-time.

2.8 Podcasts

Podcasting is a way of publishing sound files to the Internet. It allows users to subscribe to a podcast feed and receive new files automatically.

2.9 Discussion Forums

A discussion forum allows users to post messages to a shared space where people can discuss issues online with one another. Users can post replies to conversations that have been previously started, or begin their own topic. Responses are added in chronological order so a reader can follow the thread of the discussion.

2.10 Photo Sharing Applications

As the name suggests, a photo sharing application is a web-based tool that allows users to tag and share photos with others.

3. Literature Review

This section reviews the literature that forms a background to the current research project, and identifies gaps in the literature which this study will help to rectify.

3.1 Introduction to the Literature Review

In 2005, Tim O'Reilly published an article entitled "What is Web 2.0" (O'Reilly, 2005). In this article, O'Reilly described a range of popular web services and characterised them by the fact that they offered users the ability to communicate interactively online and to create and share content. He argued that these popular web services belonged to a second generation of web tools (blogs, wikis and RSS feeds among them) that all shared the same underlying goal of enabling collaboration, community and participation. O'Reilly called these software tools Web 2.0 tools (2005).

Librarians were quick to see the potential of these web services as they applied to libraries and to begin discussing them. The idea of providing online services that were more user-centred, collaborative and community-focussed was and still is a compelling one for public libraries, because many librarians think of them as a natural extension of traditional library services. For example, Chase (2007) saw social software as "a technology-enhanced progression of traditional library services and goals" (p. 7).

Social software, whether it is called Library 2.0, Web 2.0 or social networking software, continues to receive a lot of attention in the library community; at conferences, in blog postings and in practitioner journals. Because social software is a new phenomenon, much of the surrounding debate has taken place in an informal on-line environment. Although the researcher has investigated what is being said on the subject of social software in the biblioblogosphere (library blogs), this review was limited to traditionally published literature. This is in accordance with the conventions of academic research and because the review identified no significant points raised in blogs that were not also mentioned in the more traditional academic articles.

3.2 Defining the Technology

Because web technology is constantly evolving, it is not possible to give a complete and finished list of all software that falls under the umbrella of social software. However, a review of the literature identified a distinguishable list of software that was consistently referred to as belonging to the class of Web 2.0, Library 2.0 or social software. Some of the better known examples on this list were instant messaging (IM), podcasts, blogs, RSS feeds, wikis and photo-sharing applications.

3.3 Examples of Social Software

A body of literature discussed examples of social software individually, without making reference to an underlying philosophy common to each of them, or linking them to a movement.

There have been individual studies published on the use of the following social software tools in a library environment:

- Blogs (Clyde, 2004, Stephens, 2006b, Singh and Shahid, 2006);
- RSS feeds (Etches-Johnson, 2006, Stephens, 2006c, Pival, 2006);
- Instant messaging (Schmidt and Stephens, 2005, Stephens, 2006d);
- Wikis (Chawner and Lewis, 2006, Stephens, 2006e);
- Photo sharing applications (Stephens, 2006f).

Two items in the literature mentioned above were empirical studies of social software: Chawner and Lewis (2006) and Clyde (2004). The first (Chawner and Lewis, 2006) compared three wiki engines and performs seven case studies of real-world library and library-related wiki applications. The second (Clyde, 2004) analysed a sample of 55 library blogs using content analysis techniques. The Chawner and Lewis study (2006) evaluated different wiki engines and described best practice for wiki implementation. Although their research paper did include case studies, these were fairly brief.

Clyde's (2004) research into how blogs were being used in a library context displayed similar aims to the current study. Clyde provided an in-depth discussion of

how and why libraries are using blogs. The current research project re-addresses several issues raised by Clyde's findings.

Clyde's 2004 study found that there were library blogs in only three countries, "the USA, Canada and the UK" (Clyde, 2004, p. 186). While this situation has changed now, there are still relatively few library blogs in New Zealand. Clyde also investigated libraries' blog usage levels, concluding that:

Most library weblogs were designed for one-way communication between library staff and users, but a quarter provided interactive features. The level of usage of the latter was at best unclear, but seems to be very low. Most libraries were not updating their weblogs daily, giving users little reason to make frequent visits to the site (p. 188).

At the conclusion of her paper, Clyde (2004) commented that "it could be that there are institutional barriers to the establishment of library weblogs" (p. 188) and that "there are public relations issues and user education issues to be addressed alongside the technical and content issues" (p. 188). The current study investigates the validity of these comments.

3.4 The Conceptual Debate

The majority of literature identified by this review examined social software use in the abstract. This is due to the fact that the concept of social software and the technology it is concerned with is a relatively new field, and one that is constantly and rapidly evolving. The researcher found that published literature concentrated on:

- Defining concepts and terms (Macaskill and Owen, 2006, Maness, 2006a, Maness, 2006b, Crawford, 2006, Chowdhury et al., 2006, Kamel Boulos, 2007);
- Suggesting ways libraries could use participative technologies (Miller and Chad, 2005, Miller, 2005 Stephens 2006b, c, d, e, f, Kamel Boulos, 2007);
- Arguing that libraries need to re-define themselves for the technological world (Miller, 2005, Miller and Chad, 2005, Casey and Savastinuk, 2006, Chowdhury et al. 2006, Coombs, 2006).

These themes addressed the theoretical place of social software in libraries and the place of libraries in the modern world rather than the practical application of social software tools in libraries.

Conceptual articles on social software manifested two different approaches: a) those that explored the concept of social software using the term Library 2.0 or Web 2.0 and b) those that used the term social software itself. Authors who referred to the concept of social software under the term Library 2.0 or Web 2.0 included Miller (2005), Chad and Miller (2005), Miller (2006), Stephens (2006b), Abram (2006), Maness (2006a), Maness (2006b), Macaskill and Owen (2006), Chowdhury et al. (2006), Coombs (2006) and Kamel Boulos (2007). Authors who preferred to use the term social software included Dames (2004), Balas (2006), Salo (2006), Etches-Johnson (2006) and Harder (2006).

Authors who used the term Library 2.0 rather than the term social software tended to portray the use of social software as representing a revolution or major movement in libraries. These articles stressed the difference between Library 2.0 services and traditional library services, referring to social software as ushering in “the new library” (Miller, 2006, p. 1) and as requiring “evolutionary change” (Chad and Miller, 2005, p. 8). Those who referred to the concept as social software tended to focus more on where this concept fitted within the broader field of library philosophy than on where it deviated from it (Dames, 2004, Balas, 2006, Etches-Johnson 2006, Salo, 2006).

3.5 Library 2.0: Creating and Defining a Movement

An established body of literature applied the concept of Web 2.0 to library circles, using the term Library 2.0 to discuss the change that could be brought about by social software tools. The librarian Michael Casey coined the term Library 2.0 in 2005 to describe social software services as they applied to libraries. He argued that, using these technologies, libraries could create a new model of library service that encouraged “constant and purposeful change, inviting user participation in the creation of the both physical and the virtual services they want” (Casey and Savastinuk, 2006). The majority of the literature used the term Library 2.0 to frame arguments about how libraries should use social software to strategically position

themselves for continued relevance in a technological future (Miller, 2005a, 2006a, 2006b, Miller and Chad, 2005, Stephens, 2006b, Casey and Savastinuk, 2006 and Maness, 2006a).

The term Library 2.0 has been used by both by the representatives of library system vendors and by librarians themselves (Casey and Savastinuk, 2006, Stephens, 2006b) to support their cause. Several of the early articles on how social software could be used in libraries were written by the representatives of library system vendors (Miller, 2005, Miller and Chad, 2005). These articles argued that if a library was to be innovative and customer responsive, it must embrace the concept of Library 2.0 (by embracing a specially designed new library system that incorporated these elements). Some librarians without vendor affiliations also shared the view that libraries must experiment with technological innovations in order to remain relevant in today's society (Casey and Savastinuk, 2006). Those who saw technological innovation as synonymous with relevance stood opposed to those who argued that innovation in libraries did not necessarily involve technology (Crawford, 2006).

Much of the debate around the term Library 2.0 stemmed from the fact that the term has become part of a larger debate on the whole future of libraries. Literature on Library 2.0 included arguments about the place of technology in libraries (Stephens, 2006b), the future role of librarians (Chowdhury, Poulter and McMenemy, 2006), and the philosophy that should underpin library service as it moved into the 21st century (Casey and Savastinuk, 2006). Crawford (2006) clarified this debate by giving an overview and critique of literature on Library 2.0. He pointed out that the term Library 2.0 itself implied a power relationship between a better Library 2.0 and a lesser 'Library 1.0' which libraries were moving from. In this way, use of the term implicitly criticised those libraries that do not use social software. Crawford also usefully drew a distinction between Library 2.0 as "the movement or bandwagon" (p. 2) and Library 2.0 as the positive concept that concentrated on "building on today's best and improving for the future" (p. 1).

Of all those who have contributed to the debate on social software in libraries, Maness (2006a) has provided one of the most developed critical perspectives. Maness developed many of the more ephemeral ideas on the subject of Library 2.0, arguing that "a more exact definition and theory for Library 2.0 is necessary to focus

discussion and experimentation within the community” (p. 3). He proposed a new definition of Library 2.0 as “the application of interactive, collaborative, and multi-media web-based technologies to web-based library services and collections” (p. 3).

3.5.1 Library 2.0: a New Zealand Context

The concept of Web 2.0 has recently been applied to libraries in a New Zealand context. Macaskill and Owens’s (2006) conference paper was similar to other articles on the subject in that it concentrated on giving a general overview of concepts and services associated with the term Library 2.0. However, their commentary was unique in that it provided a New Zealand perspective on Library 2.0. Although Macaskill and Owen did not claim to provide a thorough or comprehensive analysis of what was being done locally, their conference paper was useful to this research in that it provided the only discussion of local as well as international examples of libraries incorporating Library 2.0 tools into their services.

3.5.2 Public Library 2.0

Like Casey and Savastinuk (2006), Chowdhury, Poulter and McMenemy (2006) proposed a “new model” of library service. However, while Casey and Savastinuk (2006) presented a generalised Library 2.0 model that could apply to any type of library service, the Chowdhury et al. (2006) model was more specific, presenting ‘Public Library 2.0’: a vision of Library 2.0 tailored specifically to public libraries. In this conceptual article, Chowdhury et al. argued that public libraries in the digital age should take a new role where they facilitate the creation of, and access to, local community knowledge. This article took the principles of some of the more abstract articles and used them to articulate specific and focussed ideas on how libraries should use social software to become repositories of “local community knowledge” (p. 454). The article also acted as a bridge between some of the more theoretical Library 2.0 articles that referred to social software as a movement, and the more practical, community focus of the social software articles.

3.6 Social Software

The proponents of Library 2.0 may have been the loudest in the debate, but they were not the only ones discussing the potential of Web 2.0 software. There was also a section of the literature that used the term social software to discuss the Web 2.0 concept. Dames (2004) defined social software as: “any tool that allows two or more persons to collaborate while each person is in a different location. The collaboration may occur in real time ...or at different times”. As shown by this definition, this was the same concept as Library 2.0, but under a different name.

These articles focussed more on the social aspects of the technology, discussing the enhanced relationship between the library and its users that can be achieved by using the technology. These articles worked on the principle that social software and libraries shared the same philosophy; they had ideals of participation, communication and community building at heart. Of these articles, some (Dames, 2004, Miller, 2006) pointed out that using social software could help keep library services relevant to users as their needs evolved. Other articles (Dames, 2004, Balas, 2006, Etches-Johnson, 2006, Harder, 2006, Salo, 2006) identified that the software could help libraries extend their traditional services to the online sphere.

3.7 Current Social Software Usage in Public Libraries

The literature review identified several studies that made reference to how librarians were currently using social software. These studies fell into two broad categories; those that examined multiple examples in an ad hoc way, and those that focussed on case studies of how social software was being implemented in specific libraries.

Four of the more conceptual articles about social software included examples of how social software is currently being used (Casey and Savastinuk, 2006, Macaskill and Owen, 2006, Stephens, 2006b, Kamel Boulos et al., 2007). These articles all used many different examples to illustrate their points. Examples of social software use given in the literature included the use of podcasting and blogs to alert users to new services, inviting feedback from users in the form of comments or book

reviews, or asking for participation in the form of contribution of photos to photo-sharing applications.

Libraries most frequently cited among those currently using social software include Ann Arbor District Library (Casey and Savastinuk, 2006, Crawford, 2006, Macaskill and Owen, 2006), Saint Joseph County Public Library (Casey and Savastinuk, 2006, Stephens, 2006a), Georgia Public Library Service (Casey and Savastinuk, 2006), Gwinnett County Public Library (Casey and Savastinuk, 2006), South Huntingdon Public Library (Casey and Savastinuk, 2006), Kansas City Public Library (Stephens, 2006b, Macaskill and Owen, 2006) and Kankakee Public Library (Macaskill and Owen, 2006). This list of frequently cited public libraries became the basis for a list of possible participants for the current study.

Although public library examples were used in many articles that quote ad hoc examples of what libraries were doing with social software (Casey and Savastinuk, 2006, Macaskill and Owen, 2006, Stephens, 2006a, Stephens, 2006b), this literature review identified no academic studies of how social software was being used in a public library environment.

The other articles in this group were case studies of the implementation of social software in specific library settings. Two case studies (Chang, 2004, Chase, 2007) discussed the social software used in each specific environment and outlined how the software was implemented. These two case studies were both set in academic libraries. Thomas (2006) did the same for a corporate library environment. This literature review did not identify any case studies of how social software was being used in a public library setting.

3.8 Gap in the Literature

This review of the literature identified a distinct lack of literature relating to how social software was being used in public libraries. Current literature was limited to the conceptual, the introductory and to individual case studies. Although several studies did include elements of the current research topic, this literature review identified no studies that brought all elements together into a unified whole, as this study does.

Although there were academic studies of how social software tools were being used in libraries, these studies were limited to those that considered only one example of social software. Some studies focussed on blogs, others on wikis, but none considered the wide range of social software tools available within the same study. Literature that did consider a wider range of social software tools tended to give a very cursory treatment of each tool in the abstract rather than providing an in-depth discussion of how they were used together in a library environment. Although the literature review did identify case studies that provided the desired in-depth discussion of how social software was being used in a specific library environment, none of these case studies focussed on public libraries. The researcher identified no empirical study on how and to what extent public libraries were using social software.

Current literature on social software provided a good introduction to the concepts and technology associated with this new area. It was sufficient to allow public librarians to develop good background knowledge of social software. However, the researcher identified a distinct need for an in-depth study that discussed what forms of social software public libraries were currently using and that considered the issues and impact of social software use in public libraries. The range of literature available on social software use in libraries was insufficient for librarians to thoroughly evaluate the possible benefits and drawbacks of social software when considering an adoption decision. The current research project has been designed to address this gap in the literature.

4. Theoretical Framework

4.1 Roger's Diffusion of Innovations Theory

Roger's Diffusion of Innovations Theory (DOI) was used in this study to develop a deeper understanding of how social software is being used in public libraries. This section introduces the DOI theory and explains why it was an appropriate choice as an analytical framework. The following paragraphs explain the most important points of the theory and show how it has been used successfully before in similar contexts, thus demonstrating its relevance to the current project.

The researcher has applied Rogers' (2003) analysis of the characteristics of organisations that adopt innovative ideas or technologies sooner relative to the majority to this project, and considered how well the analysis applied to social software use in public libraries. DOI theory posits that innovations are communicated through certain channels, over time, among the members of a social system. Rogers described the concept of innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12). For the purposes of this research, the innovation being studied was defined as being any social software tool. Social software fell under Rogers' definition of a "technology cluster" (p. 14), in that it consisted of "of one or more distinguishable elements of technology that are perceived as being closely interrelated" (p. 14).

DOI theory posits that "the characteristics of innovations, as perceived by individuals, help to explain their different rates of adoption" (Rogers, 2003, p. 15). Rogers presented five characteristics of innovations that many studies have shown to consistently explain rates of adoption. These five characteristics were:

- **Relative advantage:** "the degree to which an innovation is perceived as better than the idea it supersedes" (p. 15);
- **Compatibility:** "the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters" (p. 15);
- **Complexity:** "the degree to which an innovation is perceived as difficult to understand and use" (p. 16);

- **Trialability:** “the degree to which an innovation may be experimented with on a limited basis” (p. 16):
- **Observability:** “the degree to which the results of an innovation are visible to others” (p. 16).

Turning now to the adopters of innovations, Rogers (2003) argued that members of a social system could be categorised on the basis of innovativeness. In terms of the current study on social software use, adopters of social software could be categorised as to when they adopted social software relative to the majority. Rogers gave five adopter categories:

- Innovators;
- Early adopters;
- Early majority;
- Late majority;
- Laggards.

Because social software is a relatively new technology, although there are many public librarians considering an adoption decision, there are relatively few public libraries currently using it. Thus, the libraries currently using this software could be characterised as either innovators or early adopters.

Other significant points of Rogers’ DOI theory (2003) that were relevant here included: the innovation decision process, the desirable and undesirable consequences of innovations and the consequences of innovation decisions. These will be discussed further as the findings of the study are presented.

The DOI theory has an established tradition of use to analyse the diffusion of information and communication technologies (ICT) in the library and information science (LIS) environment (Domas-White, 2001, Minishi-Majanja and Kiplang’at, 2005, Tran, 2005). Tran’s (2005) investigation of the diffusion of community information networks (CIN) in the public library environment has informed the methodology of this research. Tran used the DOI theory to conduct a case study on the diffusion of CIN in New Zealand public libraries. She aimed to understand how CIN were used by public libraries and to assess key factors in the adoption of the

internet for CIN. Tran's data on perception, motivation and attitudes was gathered from face to face interviews with five key staff. Her research analysed the potential influences on the adoption of CIN and considered the attributes of innovation in public libraries.

5. Discussion of Research Methodology and Procedures

5.1 Why a Qualitative Methodology was Chosen

A qualitative research methodology was chosen for this research because the aims of the project were compatible with the qualitative research paradigm. The qualitative researcher acknowledges the subjectivity of all experience and the deep complexity of the social world. He or she seeks to understand the situations studied, while acknowledging that because reality is mediated through an individual's subjective perceptions, any understanding is necessarily incomplete. These underlying assumptions suited this project because it concerned gathering data on participants' subjective experience of the impact and meaning of social software use within the each individual's specific public library environment.

A quantitative research paradigm was unsuitable for this project because it was concerned with experiences that cannot be replicated. The aim of quantitative research is to control variables so a hypothesis can be tested, and so the experiment can be replicated with different groups and report similar results. However, this study was concerned with a subjective experience. The experience of social software use was different for every librarian in every different library. As such, this experience could not be replicated. The intent of the research was also to investigate an environment at a particular point in time; while social software is a new innovation in libraries. This situation was time specific, and so again could not be replicated.

Another reason why quantitative research was unsuitable was because quantitative research aims to isolate different variables of the study from all other elements. Rather than isolate variables, the intent of the current project was to deliberately explore social software use within a particular environment. The researcher felt that although this approach added to the complexity of analysis necessary, exploring the social complexity of social software use in public libraries was necessary to achieve the stated aims of the research.

5.2 Researcher's Role

Qualitative research is fundamentally interpretive, and interpretation is a subjective activity. Because of these characteristics, in the interests of validity, the researcher should inform the reader of the interpretive slant that their background and opinions may have given the research. This section intends to fulfil this obligation.

The author has spent several years working in a public library environment, and can be described as sympathetic to the mission of public libraries. This topic was chosen because the researcher noticed that many people in the library community were interested in the potential of social software to improve public library services. However, it seemed that many more libraries were interested in the ideas than were actually experimenting with the technology. The author felt that the reporting of the experiences of the early adopters of social software would be valuable to public librarians who were considering implementing social software. The documentation of early adopters' experiences would allow these librarians to learn from the opinions and actions of library staff with experience in this area.

5.3 The Human Ethics Process

Ethical approval is an important part of any research project because it ensures that the participants will be treated respectfully and completely fairly. All elements of this study that involved participants were subjected to a formal ethical approval process. Elements of the research that involved participants included an introductory e-mail, explanatory information sheet and ten questionnaire questions that were sent out to participants. These were all reviewed by a human ethics committee to ensure that the project respected the rights of privacy and confidentiality of participants, was free of coercion and gave sufficient information to allow informed consent. The project received full human ethics approval before it proceeded, and the researcher has followed ethical principles throughout the study.

5.4 Participants

The participants in this research were key staff responsible for implementing and maintaining the social software that their library uses.

5.5 Selection of Participants

Staff from twelve libraries were purposefully selected to participate in this project because their libraries were already using social software. These participants could best inform the researcher on how public libraries are using social software because they could report on their own experience.

The technology librarian or the staff member in the most similar role was chosen as the person to approach to fill in a questionnaire on how and why social software was being used in a public library. The staff member in this role was chosen because it was most likely that they would be closely associated with the implementation of social software in their library.

The participant selection process consisted of the following steps:

- A review of the literature identified libraries reported to be using social software.
- This was verified by checking individual library websites.
- A list of twelve public libraries in the United States and New Zealand that were making the highest use of social software (using more than one form of social software) was established.
- Each library on the list was contacted by phone in order to find the name and e-mail address of their technology librarian or similar role.
- A first, friendly short invitation to participate in the study was sent by e-mail to each of the twelve selected participants.
- Of the twelve, nine indicated that they wanted to know more about the project.
- A second, fuller information sheet was sent by e-mail to these nine respondents, explaining the study in detail and asking for their confirmed agreement to participate.
- Of these nine, seven agreed to participate in the study.
- A questionnaire consisting of ten questions regarding social software use was sent out by e-mail to each respondent who had agreed to participate.
- Of the seven questionnaires sent out, seven respondents sent back completed questionnaires.

- Of the seven respondents who replied, all did so very promptly, within a few days of receiving the first invitation e-mail.
- Each of the seven participants was sent a personalised thank you e-mail on completion of the questionnaire. This e-mail commented on their response and advised that they would be sent a summary of results when completed.

5.6 Data Collection

Data for this study was collected in the form of e-mail interviews. E-mail was chosen as a communication medium for reasons of practicality and low cost. As most of the desired participants were geographically distant (some in the United States and others in distant areas of New Zealand), the project would otherwise have become unviable due to travel costs. A telephone interview format would have been another option, however this involved the cost of overseas phone calls and the need to organise appropriate interview times within separate time zones, as well as the cost of transcribing interviews. The use of an e-mail format avoided all of these problems.

Interviews were chosen as the method of collecting data because they allowed participants to provide historical information. In depth, open-ended questions were chosen for the interview questions because they encouraged the respondents to discuss their subjective perceptions of the impact of social software in their libraries. This type of question was also chosen in order to provide the researcher with a rich source of information to use to develop an in-depth understanding of the situation.

It should be noted that, as well as reviewing related literature and conducting interviews with participants, this research project has made use of specific library websites to check facts and supplement statistical information. The researcher has avoided referencing these websites directly due to formal requirements from the university human ethics committee that no material that could identify individual libraries be included.

5.6.1 The Costs and Benefits of E-Mail Communication

The costs and benefits to using computer-mediated communication for interviewing have been enumerated by Mann and Stewart (2003). Mann and Stewart (2003) commented that the greatest drawback of e-mail interviews was that it is more

difficult to develop the necessary rapport with participants in an on-line medium. In an attempt to mitigate this problem and establish a personal connection with participants, the researcher sent invitation e-mails that had been personalised with each desired participant's name, and had been sent to their own e-mail address rather than their library's generic one. An information sheet giving details was also sent out in order to establish trust as a basis for rapport. The researcher also gave a personalised response to each completed questionnaire. Evidence that this was a successful strategy could be seen in the fact that this personalised response sometimes generated further conversation on the issue.

The researcher experienced drawbacks caused by the e-mail medium: the ease with which people could forget about an e-mail, and problems due to the complexity of the response process. The researcher experienced difficulty keeping the communication going when the study design required two expressions of interest (one informal and one formal consent to participate) before the questions themselves were sent. The study attempted to avoid this problem by asking for the completion of ten questions at the same time, without further communication. However, the researcher concluded that the process was still too involved, and that participants found it difficult to follow up using the e-mail medium, which could be easily forgotten. For example, several people agreed to participate but then did not, although they were reminded.

The researcher also experienced some benefits to conducting interviews by e-mail. This study identified two major benefits of the e-mail medium. The first was that e-mail was a cost efficient way of conducting in-depth interviews with participants who are physically distant. The second was that the e-mails were already in a textual form, eliminating the need for interview transcription. Using e-mail gave the researcher the opportunity to solicit contributions from overseas library staff who would not otherwise have been able to participate. Eliminating the need for interview transcription resulted in more time spent on analysis and writing; a valuable aid to the project's timely completion.

5.7 Interview Questions

The specific qualitative data consisted of answers to ten in-depth interview questions. The questions posed were as follows:

- Please tell me something about your professional background.
- What is your current position?
- What participative software does your library currently provide to users?
- When did your library first begin using participative software?
- Why did your library decide to implement participative software?
- What do you feel the differences are between the participative online services you offer and other more traditional online services?
- How do you measure the level of use of your participative software applications?
- What was your involvement in the decision to implement participative software in your library?
- What difficulties did you face in developing the participative software applications you are using?
- ‘Participative software has improved the ways that my library is providing services to users’: What is your view of this statement?

These questions were developed based on interview questions developed by Tran (2005) in her study of the diffusion of community information networks in New Zealand public libraries.

5.8 Data Analysis

Content analysis was chosen as the method of analysing the data resulting from the interviews. This approach allowed the information to be broken and analysed under different thematic headings. This enabled the researcher to bring coherence to the raw data and use it as evidence in an argument to draw conclusions as to how social software is being used in public libraries.

The content analysis method used in this study consisted of two stages. The first stage of content analysis involved a formal coding process. The second stage involved an analysis of all the seven responses question by question, drawing out trends and patterns in the different answers to the same question.

In the formal coding process, the data was organised into four conceptual categories:

- Technology;
- Feelings/opinions;
- Actions/behaviour;
- Experience/qualifications/career.

The first part of the data analysis consisted of coding the data into these four categories. These four codes were used to identify themes in the data:

- The code technology allowed the researcher to identify data related to individual examples of social software for the section on the kinds of social software public libraries were using;
- The codes feelings/opinions and actions/behaviour were used to identify data on the perceived impact of social software;
- The code experience/qualifications/career was used to develop the section on the characteristics of innovators and early adopters of social software.

This method of coding data provided a macro lens to view the data through, allowing the researcher to identify several general patterns and trends. One of these patterns was the quality of responses. All respondents wrote answers that seemed to be honest and genuinely reflective, and which provided the study with rich data. Within the responses, some questions elicited more feedback than others. The two questions that were expanded on the most were: a) the perceived differences between social software and more traditional services and b) the difficulties experienced in implementation. Respondents spoke least about the reasons why they had implemented social software, and the ways it was measured.

The second stage of content analysis involved an informal analysis of all the seven responses question by question. This stage was designed to draw out similar underlying themes and patterns within the category identified by each question, such

as ‘difficulties’ and ‘reasons why’. The results of this stage were integrated into the sections on the issues surrounding implementation of social software and its perceived impact.

5.9 Validity

In order for research to be considered valid, its findings should be “accurate from the standpoint of the researcher, the participant, or the readers of an account” (Creswell, 2003, p. 196, from Creswell and Miller, 2000). Validity is seen as a strength of qualitative research. Qualitative research aims to describe a situation in all its depth and complexity, allowing room for contradiction and acknowledging that there is more than one way of interpreting any social situation. These attributes of qualitative research assist the researcher in developing trust with the readers and creating a feeling of authenticity in the study. This study used the following strategies to help ensure validity:

- Use of a variety of data sources;
- Use of thick description to convey findings;
- Inclusion of information that runs counter to the argument;
- Clarification of the bias of the researcher.

The study used three different sources of data – a review of related literature, participant interviews and the well established DOI theory - to build a consistent body of themes and to justify these themes. The study also drew specifically on the earlier work of Tran (2005, 2006) to add to its validity.

Rich, thick descriptive writing was used to convey the study’s findings. This writing technique was used in order to more fully convey a sense of being in the setting to the reader and sharing in the experiences described. In order to add to the credibility of the study, information was presented that ran counter to the established themes. This writing technique simply represented the reality of the situation honestly – real life experiences do not always fit neatly into themes. This honesty was intended to aid the reader to develop a feeling of trust in the findings.

Validity was also maximised by making sure the questions sent out to respondents were clear and straight forward. This increased the likelihood of valid results by making sure each person interpreted the question the same way, therefore answered it in a similar way.

The bias of the researcher was clarified in the above section on the researcher's role.

5.10 Reliability

For the purposes of this research, reliability is defined as the consistency of a study's measurements. Although reliability is not a major part of qualitative studies, this research did take steps to ensure reliability. Steps taken included making sure each respondent provided answers to exactly the same set of ten questions, and that the same methodology was used to gather all interview data, although not all of the participants were physically distant, and some of the interviews could have been conducted using face-to-face interviewing.

5.11 Delimitations

The researcher chose to investigate the use of social software in public libraries only. There were two reasons for this decision. The first was to ensure the researcher was comparing like with like. The second was because data from public libraries was more likely to be readily available; public library websites were in the public domain so the researcher could look at them and staff from public libraries were likely to share what they were doing. The researcher also made the decision only to interview library staff from libraries who were currently using social software. This was a practical decision, taken because firstly because these were the examples being cited in the literature and secondly because this reported use could be verified by examining each library's public website. A further delimitation to the study was the decision to define 'libraries who are currently experimenting with social software' as only those public libraries who had implemented two or more different examples of social software.

5.12 Limitations

One of the limitations of this project was the small sample size. Because only twelve people in total were invited to participate, the final number of participants was only seven in total. This limited the generalisability of the research findings by making it less certain that this group was representative of all public libraries using social software. One of the other limitations was that the study was conducted in English, and only staff from public libraries in English speaking countries were invited to participate. This limited the range of responses received and thus the generalisability of the research.

Presentation of Findings

6. The Characteristics of Innovators and Early Adopters

6.1 *Early Adopters*

Rogers (2003) characterised individuals and organisations that were among the first in a group to adopt a particular innovation as “innovators” or “early adopters” (Rogers, 2003). Because the phenomenon this research investigated was so recent, all respondents to the questionnaire fell into the innovator and early adopter categories.

6.2. *Characteristics*

In general, the interview respondents seemed to fit Rogers (2003) definition of innovators as being “active information seekers about new ideas”. Rogers (2003) also pointed out that one of the characteristics of innovators and innovative organisations was that they were willing to take risks: “as the first to adopt a new idea, they cannot depend upon the subjective evaluations of the innovation from other members of their system” (Rogers, 2003). One of the interviewees stated that s/he initiated the investigation of social software and “there was agreement from the library managers that we needed to take the lead in [country name] library websites and take a risk with this type of technology”. This comment implies an organisational level of comfort with risk that meets the terms of Roger’s definition of innovators as risk takers.

6.3 *Qualifications and Background*

Five of the seven respondents had both formal library qualifications and a Bachelor of Arts (BA). The exceptions to this pattern were one participant who had “computing and environmental qualifications” and another who had a BA and a Masters in Business Administration.

6.4 Experience

Of the seven participants, five with two exceptions had spent their careers in libraries, some starting in reference services and moving into web services, other more recent graduates starting their careers in web services. Of the two exceptions to those who had library-focussed careers, one had worked as a policy analyst and the other had a background in finance and technology consulting for not-for-profit organisations.

Of those who had who had worked in libraries for the duration of their careers, four had many years of experience in a range of library roles. These four explained that they had moved gradually into the area of information technology (IT). There were a variety of reasons given for the move into IT librarianship. One participant had become involved in this aspect of library work because s/he had shown “an interest in technology”. Another theorised that his/her role had expanded into technological areas simply because s/he was among the few who had “the technical know-how to implement the software”.

6.5 Role in the Innovation Decision Process

Rogers (2003) analysis of the innovation decision process was useful to identify the stages at which each participant was involved in their libraries decision to implement participative software. Rogers (2003) theorised that every innovation decision process involved a series of five stages:

- Knowledge;
- Persuasion;
- Decision;
- Implementation;
- Confirmation.

Results of the interviews revealed that many participants played a role in several stages of the decision to implement participative software in their respective libraries. Many of them had a key role at the knowledge and persuasion stages, bringing the potential benefits of social software to the attention of staff and management, for example, one of the participants “determined their potential benefit

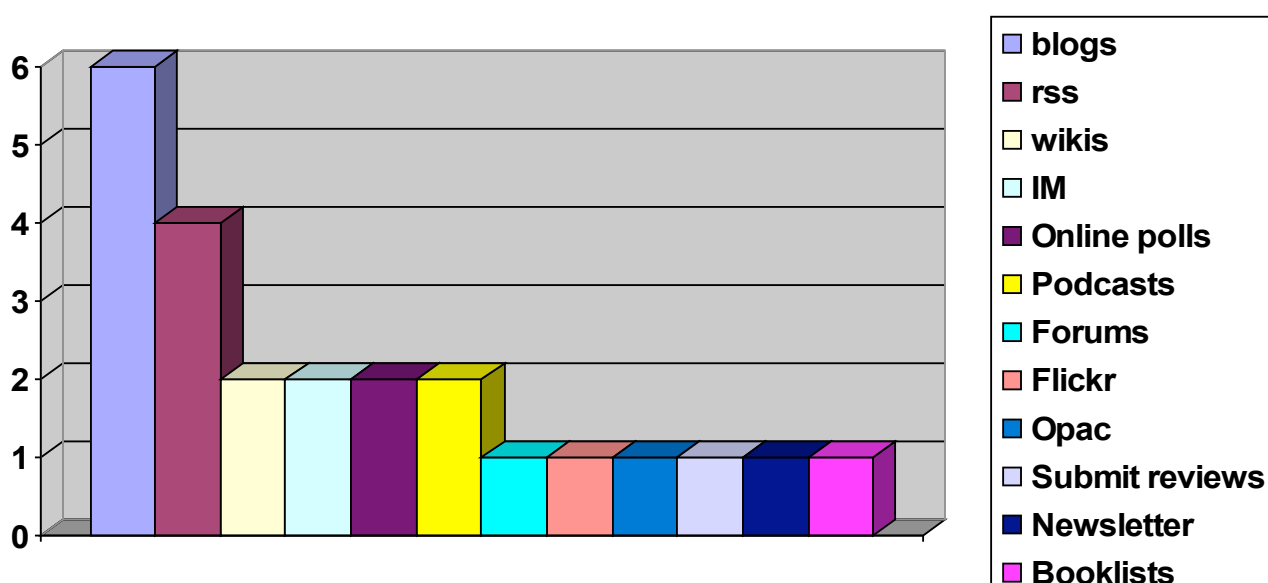
for the library [and] brought in outside speakers to discuss” and another “recommended that we investigate adding some interactivity to the website”. Others played a major role in the implementation, acting as planners. The participants in planning roles “largely guided what was done”, “drove the implementation” or “coordinated planning”.

6.6 Role in the Library

With the exception of one “Assistant Director of the Library”, all the participants currently had a directly technology related role title. These ranged from “web administrator, to “head of technology, technical services and planning”. Most respondents had a major role in the innovation decision process. In the past, the role of ‘IT librarian’ may have been relatively minor, but as online services have become a more prominent part of library services, the library IT department has become a more significant part of the decision making process and the role has taken on increasing importance within the organisation (Blyberg, 2006).

7. The Kinds of Social Software Public Libraries are using

This section considers the kinds of social software public libraries are using. It provides discussion of those particular examples of social software that were mentioned most by interview participants. The following bar chart provides a visual representation of the number of respondents who were using any particular social software tool. The total number of participants was seven (N=7).



7.1 Blogs

Blogs were the social software being most widely used, possibly because they date from the late 1990s (Clyde, 2004, p. 183). This made blogs one of the older and thus more familiar examples of social software. Of the seven libraries, six were using a blog or multiple blogs, and the seventh was considering an adoption decision. Of the six libraries using blogs, five had multiple blogs. One of the libraries had ten blogs established, but the rest had two or three.

One participant commented that blogs were a good way of informing people about what is going on in the library “We will often have patrons come in and start their inquiry with ‘I saw on your blog that...’”. Clyde made the same point when she quoted Belinda Weaver saying that “the format is perfect for that job [to keep

customers informed]” (Clyde, 2004, p. 183). As the most common blog subject was ‘library news and current events’, this opinion may be shared by others.

The current research project found that more libraries have provided interactive capability on sites, in particular for user commenting, since Clyde’s (2004) study. While Clyde found that the majority of the library weblogs (31 or 56.4 per cent) had obviously been established as a one-way medium of communication between library staff and library users or other readers of the weblog” (p. 187), this study found that of the six libraries that had blogs, five had comments enabled on at least one blog. Most of these allowed anyone to comment, however one required users to register in order to post comments. Perhaps this increase in the enablement of commenting could be due to better methods of dealing with spam (see paragraph below), or alternatively, it could be due to librarians’ changing perceptions of how open and participative library services should be. As one respondent commented; “without open commenting you can’t really consider a blog to be participative”. Another reason that comments could have been enabled was because “comments on the blogs are the easiest way to measure use”.

The researcher discovered that the level of commenting on blogs was generally low, although a higher proportion of library blogs had comments enabled than in Clyde’s (2004) study. Two of the blogs had no comments at all for the last month, and two others had very low levels of comments (one or two comments on several postings within the last month). This evidence supported Clyde’s findings that “on only three of the eleven weblogs that provided this facility [commenting] was there any evidence that users were indeed posting comments” (p. 187).

There was one notable exception to the low levels of commenting; a ‘game blog’, where “comments have shot up recently”. Indeed, when the researcher accessed this blog (07.04.07) there were several recent postings visible that had more than thirty comments each. Perhaps the high use of this blog relative to others was due to the subject matter of the blog, or that the young adult community it appealed to were already interacting in the wider online gaming community.

7.2 Really Simple Syndication (RSS) Feeds

RSS feeds are a technology primarily associated with blogs. They allow users to “syndicate and republish content on the web” (Maness, 2006a, p. 144). If a site or blog has an RSS feed, a user can republish content from a blog to another site or blog or they can aggregate content from different sites into the same place. Of the six respondents who had implemented blogs, three stated they were using RSS feeds. One participant also remarked that his/her library was “planning to use our ILS [integrated library system] vendor’s RSS feeds” that were associated with a new online public access catalogue (OPAC) that incorporated participative elements. Another respondent pointed out that time saving was one of the benefits of RSS feeds: “the RSS feeds enable us to provide up-to-date information all of the time without requiring a huge time resource”. In a busy public library where resources are stretched, this is a valuable point.

7.3 Wikis

Two of the participants were using wikis. One of these was a public subject guide wiki, and the other was an “an internal wiki for staff information”. A third interview participant was planning “on launching a Readers Advisory wiki”. In terms of usage, one participant commented that “our wiki pages are active”. We wanted to redesign our subject list, and ... using a wiki made sense, so we ran with it”.

7.4 Instant Messaging (IM)

Three of the libraries interviewed used IM or synchronous messaging technology to provide chat reference services, where “patrons can ask questions via IM”. One participant chose to implement IM because “IM was an idea, but no one had pursued it yet. It made so much sense, that I immediately ran with it”. This respondent considered their libraries’ IM service to be “fairly robust”, and commented that it “has become so with very little publicity”.

7.5 Online Quizzes and Polls

Two participants mentioned they were using online polls. One of the positive attributes mentioned was that they can be built “easily”. A respondent discussing reasons why their library decided to implement social software made specific mention of quizzes and polls as a means to target younger users: “with the quizzes particularly, it meant that we could entertain kids as well as be educational at the same time, hopefully extending the length of time they used our site”. Another participant reported that s/he was using polls in the children’s and teenage sections of their library website.

7.6 Podcasts and Vodcasts

Two of the participants reported that they were using podcasts. One of the respondents using podcasts commented that “they’ve been very successful”, as measured by “statistics from our ISP [internet service provider] concerning how many times our MP3 podcasts were downloaded and vodcasts viewed.” One of the respondents commented that when s/he started podcasting in 2005, “the sound quality was poor”, implying that podcasting technology is now higher quality.

7.7 Discussion Forums

Although two participants discussed their experience of discussion forums, only one was still using them. The participant whose library had discontinued use of forums discussed a “live timed chat” service that had been implemented “to give users somewhere to discuss books and book events”. This respondent stated that the forum had been trialled but “there was insufficient use to justify continuance”. The same respondent mentioned that the chat was only opened up during the time of the interview, and then closed again due to management’s concern that the chat room would be abused if left open all the time, perhaps suggesting that the fact that the chat was closed most of the time was a factor leading to its low uptake. Perhaps the low usage could also have been due to the subject matter; as Chang (2004) observes “as expected, some topics see more active participation than others” (p. 8). Another library had implemented discussion forums more successfully:

We are trialling that on our [youth] website – we’d thought that youth would be a good customer group to try this new technology. When we launched the website I set up 3 forum topics.

As this service was still in its trial phase at the time of interview, there had not been much uptake, but this participant remained hopeful. S/he also had moderation in place to “manage any misuse” of the discussion forum. This participant felt that “the discussion forum gives them an opportunity to respond and communicate with the library and each other”.

7.8 Photo Sharing Applications

One of the participants reported an account on Flickr, a free-to-use online photo sharing application, as being among the social software s/he was using. S/he used Flickr to post and share “photos of library activities”.

8. Issues related to the Implementation of Social Software in Public Libraries

8.1 Fit with Library Goals

Although each participant gave their own reasons for implementing social software, each seemed to share the feeling that social software would help them deliver what their users wanted. This responsiveness to the information needs of the community has always been part of the philosophy underlying public libraries, and indeed, social software is often seen as being “a technology-enhanced progression of traditional library services and goals” (Chase, 2007, p. 7).

All the respondents currently using social software implied that there was a good fit between their mission and the principles of communication and participation underpinning social software. Two of the respondents specifically mentioned the fit with the library’s goals and mission as a reason for their uptake of this technology: “Part of our mission is to be a “gathering place” for our community. Participative software made applying this philosophy to our online presence just make sense”. Others felt that implementation of social software tools not only fitted well into the library’s goals, but could actually contribute to the fulfilment of the library’s mission. One participant specifically mentioned his/her hope that social software could help his/her library be “a neutral gathering place for various ethnic/cultural groups from around our city”. This participant seemed to be saying that because online interaction and discussion happened in a relatively neutral and physically safe place, social software could allow different ethnic, religious and social groups some neutral ground on which to develop a relationship.

8.2 Fit with Library Culture

As Rogers (2003) noted, an innovation will not work successfully in an organisational structure if there is something about the culture that inhibits its acceptance. Five of the seven respondents discussed different cultural factors that made it difficult to implement participative software. Issues mentioned included staff hesitations, staff unwillingness to undertake new learning and the relationship with

the local government body responsible for funding and governance. Some respondents also discussed the ways in which social software challenged traditional views on the role of the librarian as information provider.

However, there were also many positive attributes of particular organisational cultures mentioned that made it easier to implement social software:

To the credit of our staff, no one is afraid of the future. I should note that our culture here allows anyone to participate (many of the bloggers are not degreed librarians) and no one EVER has a blog post reviewed in advance of publication. The podcasters determined on their own that they would be podcasters, and they choose their subjects and timing.

8.3 Costs and Funding

The literature on social software use in libraries often cited the relatively low cost of implementing social software. For example, in a description of implementation decisions made in his own library, Chase (2007) said that one of the reasons he chose IM for his virtual reference service was because “it’s free” (p. 8). Other articles introducing social software to librarians pointed out that introducing social software need not be a risky commitment when a library could start by experimenting with “inexpensive, even free new technologies” (Casey and Savastinuk, 2006, p. 3). This observation was reinforced by Clyde’s (2004) study on blogs in libraries, which found that “in general, the library weblogs were based on free or cheap and relatively unsophisticated weblog tools or services” (Clyde, 2004, p. 188).

Two points made by participants in this project again confirmed the findings in the literature that social software is economical to implement. One participant remarked that “We have been able to deploy these technologies at a minimum cost”. Another also mentioned that the low cost of social software made implementation a less financially risky, and so s/he was more willing to implement it: “the positive cost/benefit ratio made the implementation decision much easier”.

However, one participant felt that his/her organisational priorities were not currently focussed on social software: “currently much of our ‘innovation’ budget is going into our digitization projects – politically the onus would be on us to prove that

new software would be more important”. This implied that although social software was relatively cheap to experiment with, it was still an expense that needed to have a business case made for it, and had to compete with other projects. Implicit in this comment was the fact that although it may not cost much to actually implement the software in a technological sense, there were other costs such as staff time, staff training, marketing and website design that made implementing new software more expensive than it first appeared.

8.4 Management and Staff Support

According to Rogers (2003) DOI theory, organisational support is crucial to the successful implementation of an innovation. Rogers referred to those who provide organisational support as ‘champions’. Rogers (2003) defined innovation champions as either “powerful individuals in an organization, or ... lower-level individuals who possess the ability to coordinate the actions of others” (Rogers, 2003, p. 434).

Remarks made by participants confirmed that this theory could be successfully applied to the uptake of social software. Two respondents commented on the benefits of organisational support in the form of a supportive management team: “We are fortunate to have a Library Board of Trustees and a director who is supportive of the use of new technologies” and “my organisation has always been supportive of the implementation of participative software applications and services”. Two other respondents also made remarks related to organisational support. One mentioned the importance of supportive staff members, and another mentioned the difficulties encountered when staff and management did not fully support the implementation of social software.

8.5 Learning Curve

In his list of the key attributes of social software as applied to libraries, Stephens (2006b) included ‘ease of use’, commenting that “systems are intuitive and users can easily learn to manipulate them” (Stephens, 2006b, p. 5). Some of the case study literature confirmed this point of view. For example, Chase (2007) reported that in his organisation, IM “training time was approximately 1 hour, with an additional

hour of IM chatting to practice in the environment” (Chase, 2007, p. 8). One respondent to this study commented that s/he could implement one form of social software ‘easily’. However three of the seven respondents emphasised the steep learning curve involved in implementing social software. One of these participants acknowledged this directly, pointing out that “All the software, particularly the podcast and vodcast editing software had a somewhat steep learning curve”. The two other participants mentioned the amount of training time involved in learning these technologies, with one remarking that the frequent new learning involved in implementing new software could lead to loss of staff motivation.

Although the respondents seemed to find the learning involved in implementing social software relatively challenging, most commented that they had the support of management, which would help overcome this; as one respondent noted, “I was afforded the time and money to learn”. Another possible aid to the problem of a steep learning curve was the availability of online training. The same respondent commented that s/he “found online trainers such as Lynda.com very useful and affordable”.

8.6 Staff Training

Although surprisingly few articles in the literature mentioned the importance of staff training and acceptance for the successful implementation of social software, this point came through strongly in an analysis of responses from participants in this research. The range of comments made emphasised that staff needed to know how to use the software, be willing to use it and be positive about it, for the implementation of social software to be a success. Significantly, no-one mentioned that the learning curve was too steep. Respondents seemed to feel that difficulties with training stemmed from lack of staff acceptance, unwillingness to change, or unwillingness to put the effort into new learning rather than from the difficulty of learning new skills.

Two participants discussed the difficulties involved in training staff in the use of new software when they do not see the reasons for implementing it. As one pointed out: “when buy in is not held by the staff member... training becomes a forced effort instead of an enjoyable experience.” Another participant remarked that training in his/her organisation is “problematic”, “because some of our staff don’t adjust well to

change”. One of these participants also talked about the time and effort involved in developing skills in a new technology, and staff willingness to take on new learning, saying that “every upgrade is a relearning process. This leads to apathy on the staff side, which can translate over to the patron side”. Some staff unwillingness to undertake training could also be related to lack of staff understanding or acceptance of the new technology.

8.7 Staff Acceptance

Social software implementation is similar to any technology implementation project in that staff acceptance is a crucial factor in the success of the project. Literature on social software implementation cited fear of the unknown and unwillingness to step outside a personal comfort zone as possible reasons behind lack of staff acceptance in social software implementation. For example, Chase (2007) commented that “these tools have created a new face of usability for the library. We all know that transformation can be scary, and new faces are not always welcome” (Chase, 2007, p. 7).

Although no one interviewed mentioned fear and uncertainty, one respondent did suggest that cynicism may be behind some staff unwillingness to accept social software:

A lot of staff see 2.0 services as “trendy” and that as the sole reason for our implementation. It takes a lot to convince them otherwise to see the value added aspects.

Although they did experience problems with staff training, participants seemed in general to feel they had good levels of staff support, with one respondent noting that “most staff enthusiastically endorsed adding participative features”.

8.8 Time Constraints

Time is a factor in any implementation project; both during the planning and implementation stages and in ongoing upkeep and maintenance. The respondents remarked on the time constraints involved in both of these areas. One participant who

had no problems around support, buy-in or training to use social software found that “the only difficulty was in finding staff time for the planning and implementation”.

Other time-related problems involved time for on-going monitoring and maintenance. Monitoring was an issue for some public libraries when they were dealing with user created content, as they felt comments needed to be moderated to make sure they were appropriate. One participant mentioned that some of his/her staff felt concerned “about the time it would take to review patron-contributed content for appropriateness”. However, those who had chosen to moderate comments seemed in general to feel that the “the additional staff time needed to monitor the content was justified”. The same library “developed technical solutions to review content efficiently”.

Another time related feature of social software was that, to remain dynamic and interactive, staff members needed to commit to updating information on a regular basis. As Clyde (2004) remarked “it would be difficult, if not impossible, for example, to maintain any level of user comment or discussion on a weblog that was not updated daily” (Clyde, 2004, p. 188). One participant considered that maintaining regular updating would be difficult because:

Most of our colleagues have a ‘set it and forget it’ attitude to the website, and its very hard to get them involved in monitoring and maintaining things on a daily basis as would be required for moderating commenting etc.

Casey and Savastinuk (2006) concurred with this point of view, noting that “currently, libraries have a tendency to plan, implement, and forget” (Casey and Savastinuk, 2006, p. 5).

8.9 Technological Resources

Two respondents perceived technological barriers to implementing social software. These barriers seemed to centre on the libraries relationship with the local government body responsible for funding and governance. Talking about potential difficulties faced by libraries adopting social software, one participant felt that:

Systems would be an issue – we have comparative independence from the council IT but our web site is still hosted behind the [council name] firewall

and we would have difficulty convincing them to allow any software which would permit write access through the firewall.

Another participant mentioned that “sometimes we have needed to convince our municipal technology providers of the need to install specific (especially new) software on web servers”.

Three respondents also brought up the issue of library systems. Whereas two of the participants mentioned an OPAC with participative elements as being one of the examples of social software they offered or were planning on offering in the future, another mentioned the limitations of his/her library system “if we wanted to have tagging and/or commenting in our catalogue we would have to essentially hack it”.

8.10 Abuse of the System

Three of the seven respondents mentioned they experienced or anticipated difficulties in the form of dealing with abuse of the participative facilities offered by social software.

One of these issues was “comment spam”, which some participants seemed to perceive as a more serious barrier than others. One library at least was so concerned about spam that it did not offer commenting. This library mentioned on its website that the proliferation of comment spam made it too difficult to implement commenting. Another participant who was considering an adoption decision around blogs observed that:

The concern about abuse of commenting etc would be an issue. We already receive a significant amount of form spam and have worked with [council name] IT to change the way that the [council name] form handler works to block more of it but this has only reduced and not eliminated the spam.

This participant also considered that “spam and abuse is a webwide problem that we can’t expect to be free from”.

Two respondents mentioned the risk of inappropriate comments as an issue relating to blogs. One commented that his/her library has chosen to guard against this type of abuse by reviewing comments before putting them onto the blog. Although

none of the other respondents made mention of whether they reviewed material posted, a look at some of the libraries' blogs revealed that at least two of the blogs included a disclaimer to the effect that the library reserved the right to moderate posted comments and paraphrase individual entries. Another library website indicated it would accept comments only after a registration process. This seemed to imply that libraries considered some sort of control or moderation of comments was necessary. One participant remarked that although it might take extra staff time (see **Time** discussion above), "the additional staff time needed to monitor the content was justified".

One participant also registered concern about abuse of discussion forums. This was in the context of a youth oriented discussion forum, and the participant noted that "management was very concerned about the possibility of abuse if we left the chat open all the time". In this case, this risk led to the forum being open for only a very limited period of time, and the service finally being disabled as it did not have sufficient use.

8.11 Developing Services

The respondents were among the first adopters of social software in libraries, falling into Rogers (2003) categories of innovator and early adopter. As such, they had all begun implementing social software relatively recently. Because of this, many of the services could be described as still in development. The participants in this study tended to feel they were on the road towards a desired state, and still in a learning phase, as opposed to having achieved all they wanted to with social software. As one respondent acknowledged:

We are in early stages of providing participative on-line services, and they are not as practiced, effective and comfortable as our more traditional in-building customer service.

Many respondents shared similar service development goals. These involved enabling the library to be more responsive to user needs, and to cater better for user needs. One of the common goals seemed to be the desire to empower users by giving them more control over how they might use the library:

I think the eventual goal of our participative on-line services is to allow our patrons to use the library and its resources by themselves in whatever ways they demand, in partnership with our staff (if staff participation is needed).

8.12 Marketing and Public Relations

Commenting on the surprisingly low usage of commenting facilities on blogs, Clyde (2004) pointed out that “the weblog has to be publicised and library users need to know how to access it and how to take advantage of its features” (Clyde, 2004, p. 188). These remarks hold true not just for blogs, but for all examples of social software. Three of the respondents commented on the relationship between good marketing and successful adoption. One participant discussed a successful experience due to good marketing: “Once the services were deployed and our excellent public relations people had promoted it, the public adopted it very quickly”. Another recognised the important part that marketing and publicity played in uptake:

What we really need to do now is promoting the website and the new features, providing some training as needed and motivating people to get online and participate. The new features on our website will only be of value if they are used and enjoyed by our users.

Although most respondents indicated they felt publicity was important to the uptake of social software services, one participant commented that “Our IM service is very robust, and has become so with very little publicity”.

The issue of user training was raised only briefly by one respondent, perhaps indicating that these respondents subscribed to Stephens (2006b) belief that “one benefit [of implementing social software] is that library users are already using the tools”. However, the researcher suspected that although this could have been true for some sections of the community, it may not have been true for everyone. Three of the respondents indicated that they were targeting some of their social software services specifically at youth, who may be expected to be more familiar with some social

software tools, but others mentioned goals of bringing different ethnic and cultural groups together, and others mentioned social software in their “local history and family history department”. It seemed injudicious to assume that all the potential users of these participative elements know how to use them to communicate.

9. The Impact of Social Software

9.1 *Creating Communities around the Library*

Three of the seven respondents felt that social software offered opportunities for libraries to strengthen their local community. One remarked that his/her library used the implementation of social software to help fulfil their mission as “a “gathering place” for the community”. Other participants saw the potential for social software to help build up communities around the library. As one participant observed:

It has the potential to create online communities of people who can share recommendations for books, advice on how to research their family history, review recent library events etc.

Another respondent commented that social software enabled library users to take an active role in this community building: “participative software allows patrons to create a community of library users”. Six of the seven participants made remarks about how social software enabled communication and sharing with others. One participant stated that “we saw value for patrons in being able to share their experience, expertise and opinions with library staff and with other patrons”.

Communication and sharing with others is one of the building blocks of a community. Tran (2006) defined a ‘physical community’ as “a group of people living in the same geographical area and/or having similar characteristics in terms of interests, culture, information needs and demands” (p. 11). Tran defines a virtual community as “groups of people who cooperate to share information resources and satisfy each others needs” (p. 11).

Only one participant specifically mentioned the virtual nature of the communities that social software builds, commenting that his/her library implemented social software in order to “facilitate and encourage interaction and participation on our website so that we can create an online community – particularly for our younger members”. This participant was the only one who drew a distinction between virtual and physical communities. However, the intuition of another participant that social software could “break down some of the calcified segregation that exists in our

community” derives from the special nature of virtual communities; they allow people to interact with those they may never have the opportunity to interact with in a physical environment. It is for this reason that some people feel online communities are what Maness (2006a) refers to as “an egalitarian electronic space” (p. 140).

9.2 Reaching Users Where They Are

Four of the respondents felt that one of the benefits of social software was that it allowed people who are physically distant to become part of the library community. Three participants mentioned this explicitly, and one indicated it by drawing a distinction between ‘in-building’ and ‘on-line’ services. One remarked that s/he was “able to foster long distance relationships with patrons throughout the country”. Another commented that the implementation of social software had a positive impact on his/her relationship with users who were physically distant. This participant stated that the impact was “most noticeable in our Local and Family History department. They receive phonecalls, blog comments, and IMs from just about everywhere”.

The ability to reach physically distant users was the most important advantage of social software for one respondent, who expressed the opinion that “the number one advantage is that we are reaching patrons where they are instead of forcing them to come into the physical building.” The literature also underlined these perceptions. As Balas (2007) observed:

We have long known the importance of designing the library to serve its community, but the community is no longer defined by the library’s geographic location. We now must build an online community that users feel they belong to (Balas, 2007, p. 40).

9.3 Attracting New Users

The ability to reach users wherever they are geographically has the obvious benefit of attracting new users to the library service. Two participants mentioned the fact that social software use opens library services up to new potential users. As one noted: “We have been able to bring services and programs to individuals who otherwise would not be able to use them”. Although only two of the seven

participants specifically pointed out that social software had helped them attract new users, several implied this through their comments. These participants implied that social software could attract users who did not feel comfortable using the physical library, as well as those who were unable to use the physical library due to barriers of distance or lack of mobility.

9.4 Opening the Channels of Communication

One of the often-cited characteristics of social software is that it enables virtual communication. Stephens (2006b) included ‘social interaction’ in his list of the characteristics of social software, pointing out that it allowed people to “have conversations and create together” (p. 5). Most respondents felt that social software had indeed improved communication between users and library staff. One respondent cited “conversations happening in the comments and via email with the post writers”. Another commented that “now that an open dialogue channel is established, patrons and staff are not afraid to use it”.

Librarians writing about social software have been quick to see the potential of more open communication as a way to “harness our customer’s knowledge to supplement and improve library services” (Casey and Savastinuk, 2006, p. 3). All of the participants in this study seemed to agree with this insight. As one participant stated, “all of this interaction leads us to better ways to provide our services.” Another expressed a similar sentiment, saying that social software was:

There to serve communication between the library staff and the public, who use both [more traditional on-line services and social software services] to express their wants to us.

One respondent also talked about how social software had opened up the range of options for users to express their needs and wants to staff:

There are customers who are quite happy to walk in to the library and tell us what they do and don’t like. But there are lots of others who don’t feel comfortable doing that in person. The participatory software gives them an option to participate online, anonymously if they choose, and be heard.

Another felt that the ability to communicate better with staff gave users a sense of ownership: “participative software allows patrons... to contribute to improving their library and gives them a sense of ownership of their library”.

Most participants were positive about the benefits that better communication between staff and users could bring to users, but one respondent did acknowledge that there was still much work to do to achieve this vision:

Although there is potential for greater collaborative use of our resources, and ‘two-way conversation’ between staff and patrons, we are in the early stages of providing participative on-line services, and they are not as practiced, effective and comfortable as our more traditional in-building customer service.

9.5 Redressing the power imbalance

The researcher asked respondents about their reasons for implementing social software, and what they hoped to achieve by doing this. Reasons included allowing users opinions to be heard more clearly, creating more convenient services for users and fostering a sense of community and ownership in the library. All of these goals seemed to be very user focussed, and to share a theme of giving users more power to shape their libraries. Salo (2006) considered that allowing users to have more power over their library services gave users the sense that they were respected:

Offering users control and a sense of mastery, letting them carve out their own information landscapes individually and in groups, is a profoundly courteous and inviting design choice” (Salo, 2006, p. 4).

One participant directly discussed his/her hope that social software use could redress the power imbalance between librarian and user, describing the current relationship in the negative terms of the “supplicant/provider dichotomy that exists in most of our in-building and on-line services now”. This respondent felt that social software could go some way towards resolving this problem, but that it was not a magic solution: “even much of the participative software is malformed – IM reference for example”.

Another participant mentioned that when s/he began implementing social software; facilitating the new relationship between users and staff that this entails, some of their staff were hesitant to give up some of the traditional power associated with being the controllers of knowledge:

There was some hesitancy among staff to permit patrons to contribute content. Some felt it was the librarian's sole domain to give information to users.

Social software, and online services in general, allow the user to interact with library staff in an online space that is more power-neutral than the traditional library desk. One of the respondents sent the researcher a photo of the traditional high reference desk, accompanied by the comment that this design could discourage users from approaching the librarian. This participant described social software use as one element in a broader strategy to change the power relationship between staff and users. S/he observed that social software allowed library users to "interact with their library in their comfort zone rather than requiring them to come into ours".

9.6 Measuring Usage

Talking about measuring the usage of social software is a difficult issue, as each separate tool has different possibilities for measuring use. Three of the seven respondents discussed the ways they measured usage of different social software tools and the other four interviewees talked about measurement in more general terms. The most commonly used method of measuring usage was by gathering usage statistics.

Social software tools that people commented on specifically were blogs, podcasts and IM. Three participants discussed measurements for blog usage; one respondent counted comments, one counted subscribers, and one used both methods. One participant noted that "comments on the blogs are the easiest way to measure use". A participant using podcasts said s/he got "statistics from our ISP concerning how many times our MP3 podcasts were downloaded and vodcasts viewed." Different methods of measuring IM use were mentioned, with one respondent "keeping a 30 day history of conversations" and another measuring "number of sessions". One participant pointed out that his/her statistics were "skewed slightly because robots love to crawl blogs and wikis." This remark raised one of the potential problems associated with measuring usage in an on-line environment.

Although no library relied on feedback alone to measure usage, three participants stated that feedback was good way to measure use. One respondent also remarked that “word of mouth is another way to measure. We will often have patrons come in and start their inquiry with “I saw on your blog that...” Another used “Statistics of usage and amount of feedback offered” to measure use, rather than looking at what was specifically said. One participant who had very recently implemented social software felt that qualitative measures such as user feedback were a good way to measure use. The same participant mentioned that more qualitative methods are also good ways of measuring perceived value: “I feel we will assess more by qualitative measures the value and usage of our participatory applications”.

Although all respondents discussed how they measured use in the abstract, only two mentioned any conclusions they had drawn from their measurements. One participant remarked that download statistics from their podcast service indicated they had “been very successful.” However, another respondent was honest enough to say that “with the exception of our on-line newsletter, none of our metrics are significant”.

9.7 Measuring value

Two of the respondents talked about the issues associated with determining the value to users of implementing social software. One raised the problem of measuring value, mentioning that she/he felt it would be easier to evaluate by ‘qualitative measures’. One participant that commented directly on measuring value said that:

I don’t believe the content is there for us to be able to say we have improved services to users. We may, and I expect we will, but there are many steps to take before we achieve any significant results.

However, the same participant believes that “it is clearly worth the effort”.

10. Attributes of the Diffusion of Social Software

10.1 Relative Advantage

Rogers (2003) defined relative advantage as “the degree to which an innovation is perceived as better than the idea it supersedes” (Rogers, 2003). Although the concept of social software as being ‘better than’ something else can be seen reflected in the literature on social software use in libraries, the researcher concluded that the concept of relative advantage was not particularly illuminating in relation to social software use in libraries.

Much of the literature around social software stressed the idea that social software was a ‘new generation’ of web technology that would replace older, less participative services. This concept was reinforced by the terms Web 2.0 and Library 2.0 which seemed to imply a movement away from a ‘1.0’ level of technology and into an implicitly superior ‘2.0’ level. However participants in this study seemed to share the attitude of those writers who saw social software as part of a continuum. Remarks seemed to indicate that respondents wanted to use social software as part of their wide repertoire of ways interacting with the library community and encouraging people to become part of that community. Rather than replace their traditional services with online services, they were using social software to extend the range of services they offered. As one participant commented:

In my view, what we are trying to achieve with using participative on-line services is a replication of the person-to-person services we provide in the library, and for which we have a national reputation, rather than replace the traditional on-line services of remote database access and WEBOPAC [Web Online Public Access Catalogue] use.

10.2 Compatibility

Rogers (2003) defines compatibility as “the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters”. The concept of compatibility proved useful for understanding the reasons why these respondents had chosen to adopt social software. All participants

who were currently using social software indicated through their comments that they perceived the attributes of social software to be highly consistent with their libraries mission and goals (see sections on **Fit with goals/vision/objectives for the library** and **Fit with library culture**). The researcher also interviewed one participant whose library had experimented with social software and subsequently removed it. Observations made by this respondent seemed to indicate that library management did not perceive social software as consistent with the library's values or the needs of potential adopters. These results suggested a positive relationship between adoption decisions and perception of compatibility. However, in order to establish whether or not there was a connection between an implementation decision and the perception of social software as consistent with an institution's mission and values, the researcher would need to interview more subjects who had chosen not to implement social software.

10.3 Complexity

Rogers (2003) defined complexity as “the degree to which an innovation is perceived as difficult to understand and use” (Rogers, 2003). Complexity was also a useful concept in understanding the adoption of social software in libraries. Much of the literature on social software discussed how simple it was. For example when referring to blogs, Chang (2004) commented that “their popularity and proliferation can be attributed to ease of use and flexibility” (Chang, 2004, p. 61). However, three of the seven participants remarked that they found social software fairly complex to understand and use (see section on **Learning curve**). Roger's (2003) concept of complexity as something that could be thought of in degrees helped the author of this study come to the conclusion that although the respondents found social software complex, the degree of complexity was not too high to inhibit an implementation decision.

10.4 Trialability

Rogers (2003) defined trialability as “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 2003). The literature on social software made reference to the fact that it was relatively inexpensive and easy to

implement. These qualities suggested that social software was relatively ‘trialable’, and that respondents may have seen the low risk of implementation as one of the benefits of social software. However, there was no strong evidence that trialability was a significant factor in the decision to adopt social software.

10.5 Observability

Rogers (2003) defined observability as “the degree to which the results of an innovation are visible to others” (Rogers, 2003). Libraries which are experimenting with social software currently have a relatively high level of visibility within their industry due to the high volume of conversation around the subjects of Library 2.0 and social software in library literature and conferences. However, the ‘results’ of the innovation themselves are not as visible, because it is difficult for an outside observer to determine the results of a social software implementation in terms of usage statistics. The researcher proposes that a related concept may be more useful: the way that an innovation makes the adopter visible to others, which in turn brings results. One participant commented on the positive consequences of the observability of their libraries social software use:

It has also had the unanticipated outcome of making us somewhat famous among the grant deciders in our [location]. Consequently, we have been entrusted with grant money to expand our services even further.

10.6 Summary

Rogers’ (2003) DOI theory argued that the five categories discussed above were the most important characteristics of innovations in explaining the rate of adoption. Rogers argued that “innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability and observability and less complexity will be adopted more rapidly than other innovations” (p. 16).

When applying these categories to the innovation of social software adoption in public libraries, this research found that four of these five characteristics were important in explaining public libraries’ decisions to adopt social software. Findings from this study reflected Rogers’ (2003) findings that relative advantage and

compatibility were the most important factors to explain adoption. Compatibility and less complexity also played a role in the adoption decision. However, contrary to researcher expectations, trialability was not a significant factor in the decision to adopt social software.

11. Statement of Implications and Conclusions

11.1 Contribution of the Methodology

11.1.1 What Worked Well

The use of a qualitative methodology was a major factor in achieving the particular understanding of social software use featured in the research. Several factors in the methodology were especially important in the success of the research. These factors were the use of the e-mail format, effort on the part of the researcher to develop a personal relationship with participants, the use of open ended questions and the appropriateness of qualitative research methodology for use in this research.

Use of the e-mail interview format allowed the researcher to gather data from public libraries in a range of countries. Because the number of libraries currently experimenting with social software in the researcher's home country was limited to very few libraries, in order for the research to be viable it was essential that the sample included participants from other countries. The e-mail format made this possible.

The asynchronous nature of e-mail communication was crucial to the study as it enabled the researcher to overcome the problem of different time zones when interviewing overseas participants. Asynchronous communication allowed those participants in different time zones to respond in their own time. In this way, neither the researcher or the interviewee was inconvenienced due to differing international time zones.

Effort taken to develop a personal relationship with participants through the data gathering process was another successful element of the methodology. The 50% response rate was considered good, as only 12 potential candidates were identified. In one case, the effort taken to give a personal response to data given was rewarded by an on-going e-mail conversation on the question of 'power relationships between staff and library users' that contributed to the quality of the research.

The use of open-ended questions also worked well, as it allowed participants to expand on questions posed. Many of the participants did so in ways that cast light on their own unique experiences and perceptions of social software. This enabled the researcher to develop a sense of each individual participant's perceptions that could not have been possible using a quantitative methodology.

The final way that this methodology worked well is a theoretical and philosophical rather than a practical point, although no less important for that. The researcher saw a strong philosophical sympathy between qualitative research methodology, the public library service ethic and social software's conceptual underpinning. These three things all strive towards the interactive, humanistic and participative. They are all people focussed, they are all user/participant focussed and they share a goal of trying to make peoples' experiences more interactive.

11.1.2 What to do Differently Next Time

The generalisability and the anonymity of the research could both have been improved if the research had drawn on a larger sample. One of the reasons for the small sample size was the researcher's decision to limit the definition of 'libraries who were experimenting with social software' to those public libraries who had implemented two or more different examples of social software. This decision limited the study because it resulted in a small group of potential participants. This small group of potential participants inevitably resulted in an even smaller group of actual participants, limiting the researcher's ability to generalise from the results. The small number of participants also limited the way results could be discussed, as references to specific features or developments from a particular library could have made the participant identifiable. Should research of a similar nature be undertaken again, the issue of anonymity could be addressed through the addition of a sentence in the researcher's human ethics information form. This sentence would state that because the number of respondents may be relatively few, material may be included in the research report that may indirectly identify the participant or their library.

11.2 Conclusions: How Public Libraries are Using Social Software

This research project has examined the factors that lead public libraries to adopt social software and the impact that adoption decisions have made on these libraries. The study achieved this by answering the research question “How are public libraries using social software?” Interviews with ‘early adopters’ of social software allowed the researcher to explore participant’s perceptions of the benefits and impact of social software. Interview questions were designed in order to draw out material to answer four specific sub-questions:

- Which kinds of social software tools are public libraries using;
- How are they using them;
- What impact they have had;
- What are the attributes of the diffusion of social software.

Each sub-question has been considered individually in the body of the research, but when taken together, they answer the question of how public libraries are using social software.

The primary objective of this project was to provide public libraries with a basis on which to assess potential adoption decisions for social software. The wide range of trends and issues that this study has identified and discussed fulfil this objective. Although the small sample size limited the ability of the study to make claims about social software use in the larger public library population, this does not diminish the value of the study. The respondents were experimenting with a wide range of social software tools between them; giving public libraries a good sense of the kinds of social software out there and how they are being used. There were also several clearly identifiable trends: for example, six of the seven libraries were using blogs. It is therefore asserted that this research has gathered enough evidence to provide public libraries with a very good basis on which to assess potential adoption decisions for social software.

This analysis found that respondents believed that implementing social software in their libraries would help them fulfil their mission and goals for the library service. These goals included providing a service relevant to the community, meeting

community needs for information and leisure, building communities around the library and keeping the library “relevant in the lives of our customers”. Rather than being a new idea that would radically change what they were doing, most participants saw social software as extending the current range of services they offered, and providing new ways to achieve familiar goals.

One conclusion this study came to is that social software is not being used to its fullest extent in public libraries. Although several participants mentioned that in theory social software had the potential to allow users to create their own content, this was not generally happening in practice. Social software is being used in libraries to enable participation, but this participation is limited to library discussion forums, comments on blogs and questions on IM, rather than to actually allowing users to create information content. Only one respondent mentioned that his/her catalogue had participative elements, and follow up revealed that although tagging was enabled, this was the closest they came to allowing users to contribute information.

This finding suggests that perhaps librarians’ desire to keep control of information is still widespread: one participant discussed the traditional librarian’s status as controller and gatekeeper of information, saying that some staff were unwilling to change their role as the sole mediators of information content. To be fair, the issue of control and authority over information is a problem that extends beyond libraries. However, the researcher suggests that public libraries need to address the broader issue of whether user-contributed content is desirable, and to what extent it should be encouraged.

One of the strongest and most consistent points made by respondents was that above all they aspired to deliver a library service that truly reflected their users’ wants and needs. They saw implementing social software as a way to achieve these goals. Comments made indicated they felt social software would help achieve these goals in two ways; by implementing the social software itself and by making it easier for users to provide feedback. Respondents perceived that users wanted to have these social software tools available. They also hoped that, through the improved feedback cycles that social software enabled, users would be empowered to comment on all aspects of library service. Armed with the knowledge of what the community wanted, librarians could then build a library service based on this knowledge.

One participant's experience confirmed his/her belief that users wanted social software in their library. This respondent commented that:

We discovered that our interactive features were among the most heavily used and most frequently complimented offerings on our site. This has justified the efforts undertaken thus far and encouraged us to seek additional ways in which patrons could actively be involved when visiting our site.

Other participants confirmed the benefits of feedback. Although three acknowledged that "we are in the beginning stages", all of the respondents who were currently using social software (six of the seven) agreed that it was helping them develop better feedback cycles with users. They used terms such as 'two-way conversation', 'interaction' and 'communication' to express this concept. Three of these participants also commented that they could see evidence that social software was improving the relationship between users in general and the library. One point not brought up was that because some members of the population may be more skilled or interested in using social software than others, the library could find a sub-population bias in the levels of feedback it received.

As the results of this research project demonstrate, the relationship between library staff and library users is a complex one. One respondent used the term 'presence' to express his/her thoughts on what is at the core of this relationship. This participant described 'presence' as the moment of interaction between the user and a library staff member. The researcher believes that this concept is a useful one to concentrate on when implementing social software, or indeed any kind of library service. As the respondent put it:

The most important element of all, affect (as we say, "Presence") is an of-the-moment event, whether we speak of face-to-face services in the library, or participative services remotely, and we are far from having perfected that in on-line participative services. We will.

The quest to strike the perfect pitch in an interaction with a user is a difficult one, but what better goal to aim towards?

The seven participants in this study all identified the library user at the heart of the mission to implement social software. Although each public library service was tailored to serve its own community, all respondents shared the common goal of

having a service that supplies their users' needs. Improving the user/library feedback cycle is a crucial first step to truly make the service reflect user needs.

Findings from this project indicate that social software is being successfully used to improve feedback, and perhaps this is the best way for libraries to be using social software right now. Developing better relationships with users is the first step on the road to achieving the vision Maness (2006a) sets out: "as communities change, libraries must not only change with them, they must allow users to change the library" (p. 140).

11.3 What Findings Might Mean for Librarians and Other Interested Parties

These findings have implications both for librarians and for the wider information technology community.

Library staff will be able to use this research to learn from respondents' experiences and to assess future adoption decisions against the experiences of others. There are numerous examples of how library staff could use this study to learn from the experiences of others. One example could be an information technology librarian constructing a business case for blog implementation. This librarian could cite evidence from this project that blogs are a good way of improving user feedback and informing users about library news. Another example could be a library staff member preparing to implement social software. By reading this research, they would be made aware of the issues around social software implementation, such as the need for good management support and the need for staff buy-in. Library staff wanting to assess an adoption decision around social software could find evidence in this study that the respondents felt that the implementation of social software had helped them fulfil the libraries' goals and mission.

The analysis of the characteristics and roles of the respondents has implications for those library staff who may be considering career development in the area of library ICT. The findings related to the roles and responsibilities of participants in this research will allow library staff working in other areas to inform themselves about this facet of librarianship. Findings related to the issues involved in

the implementation of social software will also inform these people about the technological, political and social issues associated with ICT librarianship.

This paper also has implications for those in the wider information technology community. Those who are interested in the topics of Web 2.0, Library 2.0 and social software could use this study to see how social software is being implemented in one particular information setting. This may extend their knowledge of the possible uses and issues surrounding social software, and provide information to assess implementation in other related organisations.

12. Suggestions for Further Research

As remarked in the section on conclusions to the study, identifying the needs of users is one of the crucial factors involved in creating a relevant library service. This study has examined the participants' perceptions of the impact of social software on users, and an important way of extending this research would be to interview users themselves as to how they perceived social software.

This study identified that public libraries are currently using social software as a method of getting feedback from users. Further research on this topic could investigate the other methods that libraries use to gain feedback from their users, exploring which methods are the most successful at gathering feedback as well as the extent that libraries act or are able to act on the feedback they receive. A study such as this could also address the broader issue of the responsiveness of public libraries and study the possible restraints on response to user feedback.

Non-users of social software would be a further fruitful area of study. This research project has concentrated primarily on those libraries that were currently experimenting with social software. The research identified that Rogers' (2003) concepts of relative advantage and compatibility seemed to be associated with the adoption of social software, but that this claim could be strengthened by extending the study to non-users. For example, if non-users perceived that social software was incompatible with their mission and goals, this may explain why they did not adopt it.

One of the important issues identified by this study was the power imbalance that some participants identified between library staff and users. The complex interplay between power and knowledge has been considered by many philosophers. In libraries the workings of power may be seen in the way library buildings and issue desks are designed, the way staff interact with users, and the kinds of services that are offered. This study brought up the specific question of whether users should be allowed to contribute content or whether library staff should remain the controllers of knowledge in the library, and the question of the relative power of users in the library environment is one that could be explored further. A researcher could extend this study by exploring whether library staff felt it appropriate for users to contribute

content and by investigating library staff beliefs about their role in the sharing and dissemination of knowledge.

Both the literature on social software and the results of this research identified the ability to facilitate communication as one of the central characteristics of social software. This opened up another option for further research; to study how social software is being used to build communication networks. This study could be conducted in the library and information science environment or in any other field.

The concept of social software and Library 2.0 are relatively new concepts within the library community. Within the past few years there has been a rapid increase in the amount of conversation on these topics, such that they can be considered current 'trends'. One option for further research related to this project could be to study the passage of this trend as well as different trends within the library environment.

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