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**Chan, H.H.R. (2009) Murdoch University Library: A Web 2.0 Journey. In: ALSR 2010 Academic Librarian 2: Singing In The Rain , 11-12 March 2010, Hong Kong.**

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# Murdoch University Library: A Web 2.0 Journey

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## Abstract

**Purpose** – The purpose of this paper is to report on the journey undertaken by Murdoch University Library in adopting Web 2.0 technology from 2006 -2009 and explore the implications for and impacts on staff development and library services.

**Design/methodology/approach** – The paper outlines four Web 2.0 programs organised by the Library's Emerging Technologies Specialist (ETS), namely MULTA, 23 Things : A Learning 2.0 program, Collaborative Learning About Emerging Technologies and Web 2.0 Easier, faster, friendlier. All Library staff were encouraged to participate in the programs to encourage staff to incorporate Web 2.0 tools into their daily work. As a result the Library would be able to provide more innovative library services to meet its clientele's changing needs.

**Findings** – Survey results indicated that a large number of staff participated in the programs but did not complete them for some reason. Staff generally rated their ability level in using Web 2.0 tools as being 'good' or 'fair'. A large number of respondents indicated they used Web 2.0 tools for their work. Some Web 2.0 tools were rated more relevant to their current job than the others. The programs increased the Library's profile in the Murdoch University community. The programs could have been improved if content could be reduced or staff could be given the choice only to select tools that showed relevancy to their work. Furthermore, pedagogical theory should be provided in organising programs as such.

**Practical implications** –A number of Web 2.0 tools or services have been implemented or will be implemented to improve library services. A full time Emerging Technologies Specialist, instead of a half time, would be recruited. The position would be shared funded by the Library and Information Technology Services from the University..

**Originality** – Murdoch University Library is one of the first Australian Universities to provide a staffing position for emerging technologies, the 'Emerging Technologies Specialist' and also to run a number of Web 2.0 programs from 2007-2009, for library staff as well as staff and students at the Murdoch University.

**Keywords** – Libraries and the Internet, Academic libraries, Murdoch University Library, Digital libraries. Web 2.0, Library 2.0, Australia

**Paper type** – Case Study

## I. Introduction

Murdoch University is one of five universities in Western Australia. It is a small University. In 2008, the total enrolment of internal students was 16,615 students and a further 2,462 external or transnational students were located around the World. The Australian national mean for internal and external students was 27,560 and 3,272. Murdoch University had a total 1,262 full time equivalent (FTE) staff with 499 academic staff and 763 general staff. The University comprises three campuses in Western Australia. Murdoch University Library is a relatively small library with 55.4 full time equivalent (FTE) Library staff. The Australian national mean for FTE staff was 102.4 (Council of Australian University Librarians 2008). Murdoch University Library has always been innovative. It was one of the first libraries to install an Online Public Access Catalogue (OPAC) in 1985. The OPAC was then networked via the University Network to remote users in 1990 and finally via the Internet in 1991 (Stanton, 1992). The library homepage was established in 1994 well before the Murdoch University's official homepage which was launched in 1996. It was one of the earliest Australian libraries to create a position known as Network Services Librarian in 1993 and Emerging Technologies Specialist (ETS) in 2006.

As a result of new and emerging technologies, the Emerging Technologies Specialist position was created in 2006 with the aim of helping the University to integrate new tools to provide better services to users across the University. It was located organisationally within the Library. This was a half time position (18:45 hours per

week) with shared funding by the Library and the University's Information Technology Services (ITS). In the same year, the ETS initiated a pilot project called Murdoch University Library Thinking Aloud (MULTA). In March, 2007 the Library Emerging Technology (LET) group was formed. Both initiatives looked at some of the available Web 2.0 technologies and suggested ways that training could be provided to Library staff, and what training could be delivered. By September 2007, 23 Things: A Learning 2.0 program was launched for all staff at the Library, along with staff from the University's Teaching and Learning Centre. In 2008, another round of 23 Things named Collaborative Learning About Emerging Technologies was organized for Library staff who did not complete or participate in the 2007 program. By 2009, a modified program known as Web 2.0 Easier, faster, friendlier was offered to staff and students at Murdoch University during the mid semester break in 2009.

This paper will provide a summary of the journey undertaken by Murdoch University Library in adopting Web 2.0 technologies and developing staff skills from 2006 to 2009. This will include some background on how information dissemination has changed with the advent of Web 2.0 technologies. Then the paper will also report on a survey to evaluate the success of the programs and describe issues that should be considered for planning similar programs in the future. It then provides a list of Web 2.0 tools Murdoch University Library has already implemented. Finally some Web 2.0 tools currently used by other Libraries are mentioned for Murdoch University Library to consider as it moves into the new decade.

## **II. Web 1.0 technologies and Library 1.0**

To be able to distinguish the new emerging technologies, the phrase Web 1.0 was used to describe the generic term 'Internet'. Following suit, Library 1.0 was adopted to describe how information dissemination moved from print only to electronic. Traditionally, libraries interact with their patrons by face to face, telephone services and information literacy instructional classes. In the mid 90s, more and more libraries created their own websites. Soon after Murdoch Library's webpage went public in 1994, it became the most significant platform for the dissemination of library information. Lots of time was spent providing easy navigation for users and ensuring that information was current and accurate. Information presented however was static and authority driven. It simply transferred from original paper content into an electronic format. Only authorized persons were allowed to change the content. (Conner, as cited in Wood 2007). The Library 1.0 scenario was seen as a one way traffic model. Patrons predominantly read information passively from web pages (Evans, 2009; Thompson, 2008). Ellyssa Kroski, a reference librarian at Columbia University as well as an independent information consultant, considered this communication model rather unbalanced (Kroski, 2008). Continuing with Library 1.0, most libraries began to incorporate email and Chat services for clients. These improved online interaction between the library and the patron. In addition, library staff could also subscribe via email to discussion boards, mailing lists for the sharing of knowledge, common interests and support. However, all these tools had an inherent sense of 'members only'.

## **III. Web 2.0 technologies and Library 2.0**

The term 'Web 2.0' was named by Dale Dougherty, co-founder of O'Reilly Media during a team brainstorming session in planning a future web conference (O'Reilly, 2005). The Web 2.0 software was described as having an inherent trust in people and assumed that everyone could contribute when working together under the notion of 'wisdom of the crowd'. Users worked towards a common goal for the greater good. Both amateur and professional co-existed in a Web 2.0 scenario. The design of user-focused Web 2.0 software took into account the needs and desires of all users, not just those who make up the mainstream. Hence most of them were very user friendly. Furthermore, the software was available online in the form of a service or subscription without any cost, making the programs portable, accessible and affordable. As a result, users were able to access the software anywhere at any time and were able to create and upload text, audio and video to the Internet. (Anderson, 2007; Thompson, 2008; Kroski, 2008; Evans, 2009).

In Sept 2005, seeing the individual user's ability to write and publish in the online world, Michael Casey named the scenario happening within libraries as Library 2.0 via his blog 'LibraryCrunch' (Casey, 2007). Michael Casey

is the Information Technology Director for the Gwinnett County Public Library in metropolitan Atlanta. He was named a Mover & Shaker by the Library Journal in March 2007.

Sarah Houghton, Digital Futures Manager at San Jose Public Library, further provided a definition of 'Library 2.0' via her 'Librarian in Black' blog (Houghton, 2005) :

*"Library 2.0 simply means making your library's space (virtual and physical) more interactive, collaborative, and driven by community needs. Examples of where to start include blogs, gaming nights for teens, and collaborative photo sites. The basic drive is to get people back into the library by making the library relevant to what they want and need in their daily lives...to make the library a destination and not an afterthought."*

John Blyberg, Head of Technology and Digital Initiatives at Darien Library, Connecticut suggested in his blog 'library-geek' that the emergence of Google prompted many libraries to work towards new technologies. Google's presence had impacted on how libraries business changed, reflected in usage patterns at libraries. With Google's continued pursuit of a digitization strategy, libraries were facing increasing pressure to provide services that both compliment and diverge from it. (Blyberg, 2006)

Tim Berners-Lee, the inventor of the Internet stated in his interview with Scott Laningham that Web 2.0 was simply a piece of jargon. He said Web 2.0 had not invented new technologies, software was still built with the use of standard hypertext markup language (HTML), CGI and JAVA Script (Laningham, 2006). This statement should help to clear most peoples' confusion over all these terms.

## IV. The Web 2.0 / Library 2.0 Journey at Murdoch University Library

### MULTA (June – August 2006) and LET (March 2007)

[http://carcit.library.curtin.edu.au/index.php/MULTA:Murdoch\\_University\\_Library\\_Thinking\\_Aloud](http://carcit.library.curtin.edu.au/index.php/MULTA:Murdoch_University_Library_Thinking_Aloud)

MULTA was a two month pilot project set up at Murdoch University Library by the ETS, to determine which new emerging tools should be investigated and whether these tools could help librarians interact better with Library users. A number of staff volunteered to be involved in this project. They focused on five Web 2.0 technologies (RSS feed, WIKIS, Blogs, Forum and Social Tagging) and looked at how training could be provided to allow staff to master skills in these technologies.

Around the same time (August, 2006), the Public Library of Charlotte & Mecklenburg County (PLMC) in the United States launched a 'Learning 2.0' program (<http://plcmcl2-about.blogspot.com/2006/08/about-learning-20-project.html>). Helen Blowers, Technology Director Of PLCMC and her colleagues created and developed this 'Learning 2.0' program with the intention of expanding skills and empowering her staff, over 400 in total, in using the new technologies, so as to be able to benefit the whole County. Her willingness to share their hard work via Creative Commons (<http://creativecommons.org/licenses/by-nc-sa/2.5/>) had proved that their work benefited a much wider community than they had ever predicted.

This program became known as '23 Things' following on from Stephen Abram's article, 43 Things I (or You) might want to do this year (Abram 2006). When asked why 23 and not another number, Helen explained in the PLCM's 'Learning 2.0' FAQ :

*Given the timeframe of the program (8 1/2 weeks), the number of "things" were reduced so that staff already burdened with busy work schedules wouldn't feel overwhelmed by having too many discovery exercises to complete in a week. Also, it takes a lot of effort to create and develop 23 separate exercises and podcasts. Given this, I also needed it to be manageable for myself (Blowers, 2006)*

Back at Murdoch University Library, after the MULTA, there was a break for staff to take time to absorb skills and knowledge learnt. In March 2007, Emerging Technology (LET) group was formed wherein staff volunteered to complete experimental projects (Greenhill, Jones & McKay as cited in Cohen, 2007). Following this, the

Library decided to develop the projects into a program and have it offered to the wider library community. The ETS also worked closely with the University's ITS regarding the technical setup for these technologies.

Edith Cowan University Library, another Western Australian University Library, also started its pilot program related to training in Web 2.0 tools in April, 2007 (Gross & Leslie 2008).

### **23 Things : A Learning 2.0 program (September – December 2007)**

<http://mullet23.blogspot.com/2007/08/read-about-program.html>

In September 2007, the ETS launched MUL's Web 2.0 program called '23 Things: A learning 2.0'. The program was based on 'Learning 2.0 @ Mac' (<http://macetg.wordpress.com/about-learning-20-mac/>) from McMaster University Library Emerging Technologies Group project in Canada and was launched in February 2007. The McMaster Library's project was chosen because, though it was based on PLMC's 'Learning 2.0' program, it had a more academic focus. Compare Appendix 1 and Appendix 2 for the content of Murdoch University Library's 23 Things program from PLMC and McMaster.

Stephen Abram commented on his blog 'Stephen's Lighthouse' that, "I believe that this (23 things) has been one of the most transformational and viral activities to happen globally to libraries in decades." (Abram, 2008). Stephen was listed as one of the top 50 people influencing the future of libraries and was one of the "Movers and Shakers" in 2002 (Rogers, 2004). The ETS interviewed Stephen Abram for the launch of Murdoch's first '23 Things' program (Abram & Greenhill, 2007).

The 23 Things program was offered to staff at the Murdoch Library and staff from the University's Teaching and Learning Centre. The program was to encourage staff to discover Web 2.0 technologies and to think about ways they could be used to deliver innovative services. Each of the campuses used a number of volunteer mentors, some were involved in MULTA to assist staff. Each Tuesday and Friday, a one hour tutorial and another one hour self paced workshop were organised for staff to work through each of the 'Things' for that week. A WIKI was also organized for staff to enter their progress. This would provide the ETS and all participants with an overview of each other's progress. The program gave staff opportunities to try out different Web 2.0 tools based on the extended functions of what Google Mail could offer, such as Google Reader, Google Docs, Blogger and YouTube. For each participant, every week's homework was to blog to reflect on what had been learnt from these Web 2.0 tools and how these tools could be applicable to daily work. Participants also tried out different research and social networking tools such as Tagging, Second Life, Flickr, Facebook and Twitter. More than 20 staff from the Library completed the program. All participants who completed the programme were entered into a draw for an iPod.

### **Collaborative Learning About Emerging Technologies (October –Dec 2008)**

<http://blogs.murdoch.edu.au/23things08/about/>

In October, 2008, a second round of "23 Things" was offered. The structure of administering the program was very much the same. The main difference was that the program moved from a public Blogspot server to a more secure Wordpress server hosted by the Murdoch University. Additional topics added were Firefox extensions, Libx tool bar, Zotero and Ustream. Fourteen staff who completed the 23 Things programs in 2007 also joined as program presenters. A total of 11 staff completed the 2008 program. All participants who completed the programme were entered into a draw for a \$100 book voucher.

### **Web 2.0 Easier, faster, friendlier (June – July 2009)**

<http://blogs.murdoch.edu.au/libraryweb2/welcome/>

Following the success of the earlier programs, a revised scaled down '14 Things' program was marketed to all staff and students at Murdoch University. The fourteen Web 2.0 tools chosen were deemed to be beneficial for research, teaching, learning or office productivity. Staff volunteered to present different "Things" depending upon their skill level. "Rovers" who were mainly library staff, were also available in the workshops for participants needing help with hands-on tasks. A total of about 60 participants enrolled in the selected or all workshops. By the end of the workshops, 17 participants had attended every workshop in the series. An

overview of the program called '14 Things a Walkthrough' was presented at an 'Unconference' event in Perth 2009 (Greenhill & Trenorden, 2009).

## V. '23 Things' Survey Results

The ETS mentioned the '23 Things' programs on a number of occasions including in her blog 'Librarians' Matter' (Greenhill 2007) and a conference paper presented at Educause in 2009 titled 'Why Learning About Emerging Technologies is Part of Every Librarian's Job' (Greenhill, 2009). However, in writing this paper, it was felt that it would be more complete if the library staff could have the opportunities to provide their comments and feedback on the programs. An online survey was administered on 28<sup>th</sup> January 2010.

### Total Respondents:

21 existing staff and two staff who had since left Murdoch University Library completed the survey. See Appendix 3 for the survey details

### Results

**Question 1: In 2007 and 2008 did you enroll in the Library's '23 Things' program? Select your answer from the down arrow.**

- 17 staff joined the 2007 program of whom 7 completed the program (36.8%), 10 did not manage to complete it (52.6%) and 2 did not participate
- 15 staff joined the 2008 program of whom 6 completed the program(40.0%), 6 did not manage to complete it (40.0%) and 3 did not participate
- Some staff participated in both programs but did not complete them. Staff who did not participate either in 2007 or 2008 indicated staff who could have been on leave, or new staff who joined the University after 2008.

**Question 2: Please rate the usefulness of the following Web 2.0 tools in your current job? (Tools presented in the '23 Things' 2007 & 2008 program)** A total of 16 Web 2.0 tools offered in the 23 Things program were given, respondents rated

- Google Scholar as being the most useful followed by WIKIs, Libx Tool bar and RSS feed.
- Firefox extensions as being useful followed by Blogs and RSS feeds
- Second Life as being the least useful followed by Twitter and Facebook
- Some respondents could not rate some tools as they felt they did not have enough knowledge regarding the tools

**Question 3: Did you use any of the Web 2.0 tools for your work? Please describe. If not, are you planning to incorporate any of the Web 2.0 tools in your work?**

- 15 staff responded to this question, 93.3% of them used Web2.0 tools or planned to incorporate Web 2.0 tools into their work. One of the respondents indicated that a Wiki is planned for Information literacy instruction for a particular group of students with the idea of re-using it as a template for further groups if it is successful
- A total of 8 respondents skipped the question indicating that they had already given their opinion in Question 2.

**Question 4: When using the Web 2.0 tools, how would you rate your ability level?**

- 43% of respondents rated their ability level in using Web 2.0 tools as being 'Good' and 47.8% as being 'Fair'.

**Question 5: Regardless of whether you completed the '23 Things' program, can you suggest ways that it can be improved?**

**Content:**

- Respondents felt that the program could have been improved if staff were given some more time and less 'Things' to complete. Officially staff was given an hour each week to complete the 'Things'. A number of staff chose to complete only those that were related to work. Some tried to follow the program but found the one hour was not enough and had to use their own time to complete the program. Some however chose to discontinue.
- Staff felt that clearer explanations of terminologies such as Web 2.0 versus Web 1.0, Library 2 versus Library 1 would be useful as that would provide more background knowledge of what the programs were about.
- Some staff found it frustrating that each tool required a separate unique login and password to access.
- The fact that a number of social tools appeared to have very similar functions also created confusion. Common questions were about the differences between Google Docs and WIKIs, blogs and WIKIs, email alerts and RSS feed etc.
- To include Google Wave in the next training

#### **Pedagogy:**

- One of the key aims of the program was to create a climate for open communication and building group cohesion. However, some staff had reservations about engaging in virtual social spaces when they could not see the associated academic relevance. As such staff felt that the program could have been improved if some pedagogical theory was provided.

#### **Question 6: Have you got any other comments?**

- A number of staff simply loved it and enjoyed the opportunities for trying these new technologies and viewed the program as an excellent professional development tool
- The program had given some staff confidence and experience in the use of the Web 2.0 tools
- The intention of introducing emerging technologies to staff was positive, but the focus on the applications needed to be linked to how they could be applied to tasks in the workplace.
- It was only a self awareness program so it was not necessary to complete all the tasks

#### **Discussion:**

The survey indicated there should be some discussion of relevant pedagogical theories of e-learning within the program. The Community of Inquiry (CoI) framework developed by Garrison, Anderson and Archer in 2000 was chosen as a means of justifying a pedagogical approach. 'CoI' was published in an article called 'Critical inquiry in a text-based environment: Computer conferencing in higher education' in *The Internet and Higher Education* in 2000. This article outlined that to achieve meaningful online learning education goals, it was important to have social, cognitive and teaching presence working together. 'Social presence' described how users collaborated and interacted with each other to acquire knowledge with the use of online technologies. 'Cognitive presence' described how learners solved problems via processes such as exploration, integration and application of scaffolding from one's previous learning. 'Teaching presence' described how learning occurred as a result of the design of course materials and their associated instructions. Each element influenced the others and successful online learning required practitioners to achieve a balance of these elements. Any element which outweighed the other would significantly affect the resulting educational experience (Garrison & Arbaugh, 2007).

Another issue which could have influenced one's learning depends upon the individual's learning style. Dr. Mark Pegrum, Assistant Professor at the University of Western Australia, pointed out a number of e-learning myths on his 'e-learning' website (<http://e-language.wikispaces.com>), one of them being an assumption of the homogeneity of users. Many students, young and old, still prefer traditional pedagogical approaches. He further stressed that e-learning was about flexibility of time and geography, not about flexibility of learning.

Learning still required organisation, structure and sheer hard work. He also pointed out to his students enrolled in the unit 'Emergent Technologies in Education' that e-learning was all about the 3 P's – Pedagogy, Pedagogy and Pedagogy! (Pegrum, 2009)

## VI. '14 Things' Survey Results

An email survey was also sent to over 10 staff and students who attended the 14 Things (only those who could be located via the University's directory), 3 replies were received.

Though it did not represent all the participants, a few points were summarised as follows:

- Respondents found the program was good and was well presented. The hands on opportunities were great and having it on the website was useful. The program gave them the confidence and knowledge to try using the Things eg. WIKIs, Blogs and Google Reader
- One respondent would like to attend a refresher course with additional materials added

The ETS also compiled a report with recommendations and some of them are listed as follows:

- The 'Things' covered should constantly change as new tools become important and other tools become mainstream and are added to general user education.
- The programme should still be open to all staff and students but have a marketing focus targeting those who do research and teaching - postgraduate students and academic staff.
- Participants should only be allowed to enrol in the entire programme, not only selected workshops

The findings from the report was also presented in an 'Unconference' event in 2009 in Perth (Greenhill & Freedman, 2009)

## VII. Library 2 tools Murdoch University Library has adopted

The most positive outcome of the programs was that in general they had raised the awareness level of staff regarding different types of Web 2.0 tools. A large number of Web 2.0 tools have been embedded either into one's work to improve productivity or to enhance the sustainability of information dissemination. The following list outlines what Web 2 tools Murdoch University Library has used and most of these implementations were rated as being 'Very useful' to 'Useful' from the survey.

### Tools assisting research

- **Google Scholar:** is a federated search so it could seamlessly link to Murdoch University online subscription via SFX software.
- **LibX Tool Bar:** is a piece of software installed on an individual's browser to provide a short cut to search the Murdoch Library Catalogue. Users therefore do not have to go via the catalogue page to perform a search.
- **RSS feed:** New monograph titles for each subject discipline added to the library collection are automatically displayed on the feed, allowing users either to view or to subscribe.
- **Libguides:** The Library purchased a Libguides licence from Springshare, so that staff could simply fill in content within the existing template. Updating content was instant. The template also allowed uploading video, podcasts or slideshare. Staff without much HTML knowledge were able to make content available on the Internet without going through a Library or University server.
- **Slideshare:** Powerpoint presentations at conferences were uploaded to Slideshare for wider readership

- **Viddler:** Interview with Stephen Abram to launch the '23 Things' and the summary of the 'Second Life' program at Murdoch University were uploaded to Viddler

#### **Tools assisting collaboration**

- **WIKI:** One of the regional campus Libraries used WIKI for internal staff communication. Another WIKI has recently been set up between Murdoch and Macquarie University Libraries so as to keep statistics and key notes for action on the joint 'Online Librarian' chat services.
- **Blogs:** A reference desk blog was set up to keep track of all the issues that reference desk staff should be aware of. The blog was moved from the commercial server to a server at the Murdoch University. Hence staff did not need to create another set of logins and passwords. The intention in creating the library blog was that staff could try to post entries there and have a feed set up to the email.
- **Ning:** Librarians also have a Ning to share their opinions on issues that could be discussed outside a meeting room.

#### **Tools assisting directional queries**

**Mashups:** External students enter their home addresses to see if they are eligible for external delivery services which are only available to students living further than 30km from the Murdoch University Library, Murdoch Campus

- **Podcasts:** Self paced library tours from MUL to assist students who could not join a physical library tour during orientation

#### **Tools assisting spread of messages**

**Facebook** has also been set up and the Library is in the process of making it known to users. This would open up another means of communication

## **VIII. What can Murdoch University Library do?**

### **Clientele Changes**

The Online Computer Library Centre (OCLC) did a survey in 2005 on 'Perceptions of Libraries and information resources'. The results should have sent a rather alarming message to all libraries. Respondents were quite indifferent in trusting information that came from subscribed databases or was simply available freely on the Internet. Respondents also rated search engines higher than referring to librarians for assistance. Only 1 % of respondents would begin an information search via the library website with 84 % using search engines as their preferred method of finding information. Library resources were not perceived as efficient or fast enough to meet respondents needs (OCLC, 2005).

Lee Rainie, Director of the Pew Internet & American Life Project, which is a non-profit, non-partisan "fact tank" which studies the social impact of the Internet, provided a profile of 'millennials' in his blog 'Library Web Chic'. Millennials were born between 1982 -2000. They were more self-directed in their research and relied upon feedback from the environment around them. They tended to look to their peer groups for validation. They were multi-taskers and tech-embracing. They had different expectations about how to gather, transfer and use information via multiple mobile devices. Many had their personal web pages and blogs. They saw the library as only a secondary source of information, because they were very much constrained by speed, scope and scale. Technically the Internet would continue to serve as a platform for communication. The production of software changes every day and would be better than ever. An important task was to encourage students back to the library to use library resources and to change some users' perceptions that librarians were equivalent only to books (Rainie, 2006).

John Blyberg also indicated that millennials had very little interest in the 'traditional' library via his 'library-geek' blog (Blyberg, 2006).

Hence, an ideal case would be to conduct a student and staff survey to determine what students really want rather than what we think they want. University of Rochester in the United States did a comprehensive survey on students named 'Studying Students: The Undergraduate Research Project' in 2004-2006. The result relating to the Library indicated that students asked family and friends to help to choose topics for assignments and to edit their papers. They also assumed Google searches included the Library. They did evaluate resources but not thoroughly and not using all of the recommended criteria and they also did not remember who presented their library session. (Gibbons et al., 2007)

### **Continuos development of Web 2.0 Tools within Murdoch University Library**

Cuong Linh's paper provided a general overview regarding the use of Web 2.0 in Australasian university libraries. He used content analysis for the four types of Web 2.0 tools, however the information presented did not reflect a complete scenario and the result was far from ideal. Having said that, he highlighted a number of tools that have already been implemented in Australasian libraries, they are:

**Blogs:** 'Blog @your library' (<http://apps.library.curtin.edu.au/blogs/public/>) at Curtin University of Technology in Western Australia, allows users' comments and Library's replies to be available for all to view. It also serves as an archive for suggestions; there are also RSS feeds to the 'blog @your library'.

**Podcasts:** Both La Trobe University Library (<http://www.lib.latrobe.edu.au/podcasts/>) and Swinburne University have a number of Podcasts (<http://www.swinburne.edu.au/lib/researchhelp/tutorials.htm>) produced for library users on directional information or research assistance. (Cuong Linh, 2008)

Currently blogs, WIKIS and Google Docs have been used by staff at Murdoch University Library as working tools. To further increase our innovative library services, these examples of blogs and podcasts could be considered. As summarised by Bryan Alexander, Director for Research at the National Institute for Technology and Liberal Education (NITLE), social software does not indicate a sharp break with the old but, rather, the gradual emergence of a new type of practice. Technically, some take more time and effort to develop than others (Alexander 2006).

### **Future planning of the Library**

The Library's future planning is to ensure the best possible services and resources are developed and available to the Murdoch University community, with a particular focus on providing an equivalent library experience and service to transnational and external students. To be able to achieve this, service delivery has to be flexible, innovative and sustainable. [Transnational students' residences were mostly overseas; external students choose to study externally because of work or family commitments or living far away from the campus].

### **Professional Development**

Stephens & Kern (2008) discovered that a lot of staff working in libraries are approaching into a stage of 'Technostress' because new tools and web sites came at them daily. These could easily create a feeling of unease or anxiety about how much technology they could take on or even understand.

All three programs (23 Things and 14 Things) are available online and they serve as ongoing staff development tools. John Thompson advised new learners to take baby steps and adopted one small application at a time. He commented 'Web 2.0' offered powerful applications with great potential, but one had to use them to experience their benefits (Thompson, 2008).

In 2009 Semester 2, the information literacy co-ordinator and a Liaison librarian at Murdoch University Library completed a 6 week unit at the University of Western Australia, titled 'Emergent Technologies in Education'. The aim of the unit was to familiarize students with new and emerging technologies and at the same time to emphasize the pedagogy in developing e-learning. The Library would benefit from their acquired knowledge.

## Staffing

In 2006 an ETS was employed in a half time contract position. In 2010, a full time ETS position was created with the support by three stakeholders (Library, Information Technology Services and Student Life and Learning). This new ETS position would be involved in researching, evaluation, developing, communicating, training Library staff and the campus community. As such, new and emerging technology tools will be used to assist in the delivery of information resources and teaching and learning in higher education.

## IX. Conclusion

Murdoch University Library is innovative in being one of the first Australian Universities to provide a staff position known as 'Emerging Technologist Specialist'. The ETS successfully increased staff awareness of knowledge and applications of Web 2.0 tools by introducing the two 23 things programs in 2007 and 2008 and the '14 Things' programs in 2009. All programs raised the Library's profile in the Murdoch University community.

Following the programs, a number Web 2.0 tools have either been implemented or will be implemented in the Library. The survey done in 2010 highlighted the success of these programs, and their uptake by staff appears to be closely related to the relevance of the tools to individual staff duties. However in addition, it is essential to include e-learning theories in a discussion of the use of Web 2.0 tools in library services. Community of Inquiry (CoI) has been selected because it indicates that a balance of 'social, cognitive and teaching' elements contributes towards successful e-learning educational experience.

This paper serves to provide an account of what Murdoch University Library has achieved and how we could improve if a similar program is administered. This paper further provides the Library with a framework of what we could be done in the future. Derek Whitehead, Director of the Information Services from Swinburne University of Technology mentioned in his seminar in 2009 that over 10% of Web 2.0 programs worldwide take place in Australia. Murdoch University Library is proud to be within that 10% (Whitehead, 2009).

**[The work described in this paper owes much to the Emerging Technologist Specialist (ETS), Kathryn Greenhill who led Murdoch University Library towards the Web 2.0 World. Kathryn resigned from Murdoch University in July 2009]**

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## Appendix 1

### Summary of for Web 2.0 tools covered by MU

	MULTA	23 Things (2007)	23 Things (2008)	14 Things*
Start Date	16/06/2006	19/09/2007	20/10/2008	23/06/2009
Finish Date	11/08/2006	7/12/2007	19/12/2008	24/07/2009
Week	Pilot Project	Program	Program	Program
1	RSS feed	Reading about the program	Reading about the program, Set up gmail and blogger A/C and blog; put progress onto WIKI	Background,Gmail, Blogging
2	WIKIS	Set up gmail and blogger A/C and blog; put progress onto WIKI	Using google Reader and subscribing to feeds	Google reader, Firefox
3	Blogs	Using google Reader and subscribing to feeds	Firefox Extensions - general & Zotero & LibX	LibX , Google Scholar, Open Access
4	Forums	Free	Google docs, Google Earth, and surveys on spreadsheets and igoogole, PBWIKI	Productivity Tools, wikis
5	Social Tagging	Free	Social bookmarking & Tagging and Del.icio.us	Creative Commons, youtube, slideshare, flickr
6		Create & Share a Google Doc & create a WIKI	Image generator, upload photo onto blog & Flickr	Zotero, Connotea, CiteULike, delicious
7		Social bookmarking / Tagging & Del.icio.us	Facebook & Twitter	
8		Image generator, upload photo onto blog & Flickr	Upload youtube and slideshare onto blog & Ustream	
9		Free	Gaming and Second Life	
10		Facebook & Twitter		
11		Second Life		
12		Upload youtube and slideshare onto blog		
13		Library 2.1		

\*'14 Things' class structure: 10:00-11:30 for 6 weeks or 9:00-2:30 for 2 weeks

## Appendix 2

### Summary of for Web 2.0 tools covered by PLMC and McMaster University Library

	<b>Library 2 (PLMC) US</b>	<b>McMaster Uni. Lib.(Canada)</b>
Start Date	16/06/2006	19/09/2007
Finish Date	11/08/2006	7/12/2007
Week	Program	Program
1	Find out about programs	Introduction
2	Set up blog and register	Set up Blog & write blog
3	Flicker , write blog and mashups	RSS feed & subscription
4	RSS feed & subscription	Wikis
5	LibraryThing & online image generator 7 Rollyo	Social Bookmarking & Tagging (Delicious & Flickr)
6	Tagging, Folksonomies & Technorati	Discovery - read Web 2 impact on libraries, play and explore podcasts, continue to blog
7	Wikis	same as above week
8	Wikis	Online applications and tools such as Google Docs, Soho, Meebo, Snipshot etc
9	Podcasts, Video (youtube) & Downloadable audio-netlibrary books	Online social network -Facebook, Myspace
10		Gaming & Virtual Worlds
11		Firefox add-ons & bookmarklets
12		Catch up
13		Sum up

## Survey Data

1. In 2007 and 2008 did you enroll in the Library's '23 Things' program ? Select your answer from the down arrow.					
	<i>answered question</i>				22
	<i>skipped question</i>				1
2007					
	Yes, completed	Yes, but did not complete	No, did not participate	Response Count	
1	36.8% (7)	<b>52.6% (10)</b>	10.5% (2)	19	
2008					
	Yes, completed	Yes, but did not complete	No, did not participate	Response Count	
1	<b>40.0% (6)</b>	<b>40.0% (6)</b>	20.0% (3)	15	
	Explain your main reason for not participating or what prevented you from completing the programme				14

2. Please rate the usefulness of the following Web 2.0 tools in your current job? (Tools presented in the '23 Things' 2007 & 2008 program)						
	<i>answered question</i>					23
	<i>skipped question</i>					0
	Most Useful	Useful	Not Useful	Not enough knowledge to rate	Rating Average	Response Count
Blogs	26.1% (6)	<b>56.5% (13)</b>	17.4% (4)	0.0% (0)	1.91	23
Del.icio.us	4.5% (1)	31.8% (7)	<b>40.9% (9)</b>	22.7% (5)	2.82	22
Facebook	0.0% (0)	36.4% (8)	<b>59.1% (13)</b>	4.5% (1)	2.68	22
Firefox extensions	19.0% (4)	<b>57.1% (12)</b>	9.5% (2)	14.3% (3)	2.19	21

**2. Please rate the usefulness of the following Web 2.0 tools in your current job? (Tools presented in the '23 Things' 2007 & 2008 program)**

Flicker	4.5% (1)	<b>45.5% (10)</b>	31.8% (7)	18.2% (4)	2.64	22
Google Doc	36.4% (8)	<b>54.5% (12)</b>	4.5% (1)	4.5% (1)	1.77	22
Google Scholar	<b>78.3% (18)</b>	17.4% (4)	4.3% (1)	0.0% (0)	1.26	23
Libx tool bar	39.1% (9)	<b>43.5% (10)</b>	13.0% (3)	4.3% (1)	1.83	23
RSS	39.1% (9)	<b>56.5% (13)</b>	4.3% (1)	0.0% (0)	1.65	23
Second Life	0.0% (0)	4.8% (1)	<b>90.5% (19)</b>	4.8% (1)	3.00	21
Slideshare	9.1% (2)	<b>36.4% (8)</b>	27.3% (6)	27.3% (6)	2.73	22
Twitter	0.0% (0)	18.2% (4)	<b>63.6% (14)</b>	18.2% (4)	3.00	22
Ustream	4.5% (1)	4.5% (1)	<b>45.5% (10)</b>	<b>45.5% (10)</b>	3.32	22
Wikis	40.9% (9)	<b>50.0% (11)</b>	9.1% (2)	0.0% (0)	1.68	22
You Tube	18.2% (4)	<b>50.0% (11)</b>	31.8% (7)	0.0% (0)	2.14	22
Zotero	15.0% (3)	25.0% (5)	<b>35.0% (7)</b>	25.0% (5)	2.70	20
Please explain the tool(s) you have selected are the 'Most Useful'						20

3. Did you use any of the Web 2.0 tools for your work? Please describe. If not, are you planning to incorporate any of the Web 2.0 tools in your work?			
<i>answered question</i>			15
<i>skipped question</i>			8
	Yes	No	Response Count
1	93.3% (14)	6.7% (1)	15
If yes, please describe			22

4. When using the Web 2.0 tools, how would you rate your ability level ?						
<i>answered question</i>					23	
<i>skipped question</i>					0	
	Excellent	Good	Fair	Poor	Rating Average	Response Count
1	4.3% (1)	43.5% (10)	47.8% (11)	4.3% (1)	2.52	23

5. Regardless of whether you completed the '23 Things' program, can you suggest ways that it can be improved? ( e.g. the delivery or content or any other issues)	
<i>answered question</i>	18
<i>skipped question</i>	5

Survey was created and compiled by surveymonkey which is a free tool available via the Internet (<http://www.surveymonkey.com/>)

6. Have you got any other comments?	
<i>answered question</i>	15
<i>skipped question</i>	8
	<b>Response Count</b>
 <a href="#">Show replies</a>	15