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## **Workplace Practice**

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## **Collaboration and communication via wiki: The experience of Curtin University Library and Information Service**

### **Abstract**

The idea behind the wiki, a website that can be created and edited by many different users, can sometimes be difficult to come to terms with. Unlike traditional content management and web authoring systems, the wiki is “egalitarian”, enabling all users to have access to its writing and publishing features. Within the organisational context, the wiki is emerging as one of the more flexible, dynamic and simple yet powerful online tools available for knowledge sharing and collaboration. Its version control and change tracking capabilities can also facilitate efficient record keeping and promote transparency.

This paper describes Curtin University Library’s experience of designing, developing and implementing a wiki for enhancing communication within and across teams, as well as for collaborating on cross-sectional projects. The challenges of training library staff in using this new technology are discussed. Some of the advantages and disadvantages of wiki technology, as experienced in an academic library environment, are also examined.

## **Introduction**

The wiki is a recent development of the web that has been attracting the notice of organisations because of its usefulness as a collaborative tool. The Research Services unit, part of the Library and Information Service at Curtin University of Technology, has been trialling the use of a wiki. This paper describes the experiences the team has had to date with its wiki. The benefits of this technology, and the problems experienced, are also examined.

## **Research Services**

The Research Services unit was formed at the beginning of 2005, and consists of nine staff members (two of whom work part-time). The unit's mission is to 'Proactively support research activities by providing relevant resources, strengthening research processes, facilitating scholarly communication, and promoting research output' (Curtin University Library and Information Service, 2006) across the university. As part of this mission, it provides a range of information literacy and other services to the University's academic staff and postgraduate research students. Additionally, the unit is responsible for collection development (working with other units within the Library), a number of special projects and the management of Curtin's branch libraries.

The Senior Librarian team is a part of the Research Services unit. Attached to each of the University's five teaching divisions, and to the Vice-Chancellory, the Senior Librarians each have an office within their division, which enables them to develop and maintain

close links with the staff and students of the division. The team assists academic staff and research students with their information needs. This includes the presentation of a series of seminars intended to train academic staff and research students in the use of tools and resources available for their research, assistance and training with bibliographic management software, and one-to-one assistance in individuals' offices. During the recent Research Quality Framework trial that was conducted by the Australian Technology Network universities, the Senior Librarians were responsible for assisting academic staff who needed to obtain information about their publications, and provided extensive training to academic staff on citation indexes and journal impact factors.

The team works with a range of different documents and information sources, reflecting its varied responsibilities and projects. We hoped to investigate how a wiki could be used for internal communication purposes, and whether a wiki would make some of our daily tasks and project activities more efficient.

## **Wikis versus 'traditional' sites**

The wiki has been the subject of media attention recently, with its most famous exemplar, Wikipedia, receiving criticism for outright inaccuracies and bias. Wikipedia is an online encyclopaedia that turns the idea of the subject expert on its head – anyone can create an entry on a topic, or edit and change the information contained therein. A study conducted by the journal *Nature* (Giles, 2005), comparing Wikipedia with the venerable Encyclopaedia Britannica,

famously concluded that Wikipedia was *not* significantly less accurate than Britannica, and that 'Wikipedia's strongest suit is the speed at which it can updated' (p.901).

Controversy aside, the wiki is beginning to be adopted by organisations as a tool for communication and collaboration. It can be somewhat difficult to obtain information or examples of corporate usage, as many organisational wikis can only be accessed via organisational intranets. For example, Google's wiki, *Goowiki* (Stone, 2005), is used for collaborative authoring, for writing 'spec[ifications] and other documentation', and for 'sharing ideas' on potential new projects. Other large organisations that are reported to have begun using wikis for internal communication include Disney, McDonalds, Sony, BMW, MIT and Stanford (Richardson, 2006, p.62).

Wikis have been around for a little while, having been invented by Ward Cunningham in 1995. He described it as 'the simplest online database that could possibly work' (Cunningham, 2002). 'A wiki could be called collaboration "for the masses." Unlike most tools that require different categories of users — that is, administrators, designers and users — any wiki user can become an administrator, designer or user.' (Burton, Knox, & Drakos, 2004).

A traditional website first needs to be edited using specialist software such as Microsoft FrontPage or Macromedia Dreamweaver (or you can edit pages by hand if you know HTML well); once edited, the website then needs to be uploaded onto a server before any changes or new content can be

displayed. Usually, only those who have the authority to do so can make changes or add content to traditional webpages. In many organisations, such content also needs to be approved before it is displayed. A wiki, on the other hand, is 'a Website where anyone can edit anything anytime they want' Richardson (2006, p.59). Wikipedia has used this principle to great effect, allowing its users to create entries on practically any topic they wish, and add to or amend anything they come across within the wiki.

Apart from this ease of editing, the wiki has a number of other features that make it unique and ideal for collaborative writing projects:

- Version control. Not only does the wiki allow changes to be made very easily, it also keeps track of these changes, and allows users to revert to an earlier version if necessary. It is also possible to compare versions of documents from different dates.
- Record of users. A wiki user usually create an account, so that when they edit a wiki page, their contributions are recorded. Additionally, although many wikis might allow anonymous editing, the IP addresses of a computer used to make a change is recorded and can be used to determine the identity of a user if necessary.
- Discussion. Many wikis have a 'talk' page, where any topics can be discussed by users. Wiki pages that have been created also have this 'talk' feature, where users who may not want to change the content of a page, but wish to discuss it, can leave comments.

- Navigation. The wiki has a number of features that assist the user with its navigation, including the 'recent changes' feature (a page that tracks and lists any changes to the wiki), a means of categorising pages, and a search facility.

Wikis use a simplified version of HTML (also known as wiki syntax or 'wikitext'). Many proponents of the wiki argue that because the HTML used in wikis is 'simplified' it is therefore easier for users to work with. This is definitely true if the user is already proficient with HTML or web authoring, however there is a slight learning curve for those new to HTML.

### Wiki options

There are a number of options available, ranging from open source, freely available options, through to proprietary, licensed products with a range of features aimed at the corporate market.

Issues that need to be considered by any library wanting to use a wiki include:

- Cost
- Number of users. Many proprietary products have pricing models based on number of users.
- Need for access control. While this might seem to contradict the idea of the wiki, some wikis do permit permissions to be set on particular pages, so that only certain categories of users can edit or change these pages.
- Installation or hosting of the wiki. Where it is not possible for the Library to host a wiki on a server, there are so-called 'wiki farms' – companies that will set up and host a wiki for an organisation (or an

individual) for a price (*Wiki farm, 2006*).

Wikipedia (*List of wiki software, 2006*) provides a good list of wiki software options.

### Implementation

The software chosen for the Research Services wiki was MediaWiki (the same software that Wikipedia runs on), The low cost (MediaWiki is open source software, free to download, install and modify), and the fact that MediaWiki is an established wiki package, were the two main reasons driving its selection as the wiki for the team.

The wiki was installed on an Apache web server with PHP and MySQL. The Research Services unit had the benefit of being able to call upon on the expertise of the Library's Information Technology unit for assistance with installation and configuration. The installation documentation for MediaWiki is clear and easily accessible, and they report that the installation process was relatively straightforward.

Once the wiki was installed and available for use, one Research Services team member (the author) was assigned the task of investigating the new wiki further. The team member concerned had some existing familiarity with web authoring and HTML (as one of the Library's blog coordinators), and wikis, having investigated and used existing wikis such as Wikipedia and the Library Success Wiki (*Library Success: A Best Practices Wiki, 2006*).

The editing guidelines and help pages for MediaWiki are all available online, and are reasonably clear and easy to

follow, covering almost every conceivable need a novice or even a more experienced user would have. However some of the help pages for MediaWiki are so detailed and dense that they could be difficult for a novice wiki user to navigate. One of the tasks undertaken, therefore, was a selection of all the possible tasks and requirements beginning users would need. Instructions and guidelines for these tasks were then simplified and modified, where necessary, using the information provided in the online MediaWiki Handbook (*MediaWiki Handbook*, 2006). Some of these included:

- Creating a user account on the wiki. While this was not strictly essential, all team members were encouraged to create an account, so as to allow the wiki to track any changes made to material held on the wiki.
- Creating pages.
- Editing content on existing pages.
- Basic text formatting. This included instructions on how to *italicise* or bold text, create lists and add links to other pages within the wiki or external webpages.

Documents and relevant information were then selected for uploading onto the wiki. The criteria that were used to choose documents for inclusion on the wiki were:

- Documents that needed to be kept up-to-date, and that would be regularly added to or edited.
- Documents that were going to be worked on by the team.
- Documents that were not confidential, and that did not contain sensitive information. During this trial

stage we did not want to risk losing or compromising any confidential information.

Using this set of criteria, it was very clear which documents could be chosen to be made accessible as wiki documents.

### **Policy statements and guidelines**

The wiki has proven to be a useful tool for working with policy and guidelines documents. It tracks or records the history of changes to documents and allows comparison of different versions of the same document, on one screen.

One incident illustrates some of the problems that arise when using 'traditional' methods of collaborative authoring. The team was revising the Library's collection development policy. This was a document that was drafted and redrafted a number of times and sent to other teams within the library for discussion and feedback. Unfortunately work on this document quite some time before the wiki was available, so discussions of this document were conducted the 'traditional' way, that is, using email to send the document in Microsoft Word format to members of the team, and occasionally to other Library units. Inevitably it became quite difficult to track the annotations and changes that were being suggested on the document. At one point the document even went 'missing' briefly, when someone inadvertently saved the working version in the wrong location on the file server. If this policy document had been worked on using the wiki, there would have been just one working version maintained, with all changes and additions recorded and tracked on the wiki.

### Knowledge base

Another ideal use of the wiki is for documents of the 'Frequently Asked Questions' variety. The Senior Librarians, in dealing with very varied teaching and research divisions across the university, work with a lot of information that needs to be collected on an ongoing basis, for future reference and for training purposes.

Traditionally, each Senior Librarian has been responsible for ensuring that a Word document, listing all the

information relating to their work within their division, is kept current. In many cases, the information does not change greatly from day to day, but it is important to keep track of changes where they do occur, such as the contact details for particular individuals and areas within the university, and, notes on where to find information on specific issues that arise in the course of a Senior Librarian's duties.

Maintaining this document in the traditional Word format has proven to be rather cumbersome.

The screenshot shows a Mozilla Firefox browser window with the title 'Handy hints - RSWiki - Mozilla Firefox'. The address bar shows the URL 'http://intranet.lis.curtin.edu.au/RSWiki/index.php/Handy\_hints'. The page content includes a navigation sidebar on the left with links like 'Main Page', 'Community portal', and 'Current events'. The main content area features a 'Handy hints' title, a 'Category: Divisional' label, and a 'Table of contents [hide]' section. The table of contents lists 24 items under the heading '1 A-Z Handy Hints for divisional Senior Librarians, (A Guide for all of us!):', including '1.1 A constantly evolving list:' and sub-items like '1.1.1 Accessing email from home', '1.1.2 Acronyms', '1.1.3 Collection Development', '1.1.4 Contacts in the Division', '1.1.5 Contacts in the Library', '1.1.6 Divisional information on Curtin University Website', '1.1.7 Divisional profiles', '1.1.8 Document Delivery', '1.1.9 Email set up on new PCs', '1.1.10 E-space', '1.1.11 Information Literacy', '1.1.12 Internal Phone Calls', '1.1.13 Intranet', '1.1.14 Lecture Rooms', '1.1.15 Map of Campus', '1.1.16 Meetings', '1.1.17 New Books lists to send to Divisional staff', '1.1.18 New Academic appointments', '1.1.19 Network drives', '1.1.20 NVIVO', '1.1.21 Ordering Books', '1.1.22 Parking', '1.1.23 Phone setup', and '1.1.24 ProQuest Wording'.

Figure 1. Handy hints for divisional senior librarians

Using the wiki it has been possible to create a page to collect all of this information (see Figure 1).

Using the wiki, changes to the information are very easily made. The wiki tracks the date specific information was added or edited, which allows users to see how current the information is, and also records who made particular changes. The fact that a Table of Contents is automatically generated and updated as information is changed or added also makes the information contained easy to locate. Because the wiki is so easy to use, some information that despite its usefulness, was previously either not well recorded, or not recorded at all, is now being noted using the wiki. The *Handy Hints* document in wiki format is a 'living' document that is 'maintained collaboratively in a way that just isn't possible with Word documents' (Fichter, 2005, p.49). As Tonkin (2005) notes: 'Any good technical support team needs to retain their experiences somewhere, and a wiki makes a reasonably good knowledge base.'

### **Electronic notebook**

Although the main focus of the wiki was as a tool for the entire team, some team members also use the wiki to record personal tasks and individual projects. One of the Senior Librarians has begun using the wiki to record specific daily tasks, including the one-to-one assistance provided to academic staff and research students. The wiki is also being used by some team members to record their notes on new resources such as journals or databases.

### **Issues**

While the Research Services wiki has been a very useful tool, it is worth noting some of the issues and challenges experienced during this project.

Although most users found the wiki easy to use, it should be mentioned that initially, most did also have a few minor difficulties with the software. This is possibly because MediaWiki's editing tools, while simple, are not as easy to use as some other wikis. The user interface is rudimentary, with only a few graphical options for formatting text, and relies on users learning the elements of wiki syntax. Access to administrative functions can also be very daunting for users unfamiliar with such options and capabilities. Team members have varying levels of proficiency in its use.

Many of the team members, being accustomed to more traditional ways of working with Web-based material, initially found the concept of being able to create a new wiki page for anything, at any time, somewhat difficult to get used to. Also, while tools such as email, and word processors (Microsoft Word in Curtin's case) are well-established, familiar, and regularly used as part of the unit's work flow and work processes, the wiki is still a very new tool and is not yet a 'habit' (Olsen, 2006).

Participants in this wiki project have been drawn from only one section of the Library, the Research Services unit. Team members are already beginning to acknowledge and discuss the limitations of such an operational model. Because other units have not been using the wiki, it has been necessary to reformat wiki documents into Word formats (for example), for cross-unit projects and discussions. Such documents then need to be re-translated into wiki format, incorporating any changes or additions. More needs to be done to properly integrate the wiki into existing structures and procedures.

During the early stages of the development of the Research Services wiki, it was important to have one team member to oversee the wiki and to ensure that all relevant information was in the correct locations. To use wiki parlance, this person functioned as the 'wiki gardener'- someone who 'cleans up the content of a wiki' (Ito, 2003). Here, the Research Services team's experience has been similar to that of wiki users at Gartner, who found it 'helpful to have someone "behind the scenes" who can "clean up" the wiki. Otherwise, the wiki can become a confusing mess of information and ideas.' (Burton, Knox, & Drakos, 2004) It is likely that, like any good garden, the wiki will continue to need 'constant care and pruning' (Fichter, 2005, p.48).

As an aside: it may interest (and amuse) some readers to know that the language that is emerging around wikis seems to have a gardening (or at least plant-related) theme. The wiki gardener presumably helps in managing and controlling the 'wiki jungle', defined as uncontrolled wiki pages 'that nobody can make heads and tails of' (Essmann, 2004) And don't forget the wiki farms, mentioned earlier: that is, servers that host wikis. There are also 'walled gardens' – the wiki variety not possessing many of the pleasant connotations we may associate with the green variety – the wiki 'walled garden', being a section of the wiki 'intended for the private use of an individual or group' (*Walled garden*, 2006), is seen as exclusivist and therefore undesirable.

### **What next?**

The experience of the Research Services team demonstrates that the wiki can be a very useful tool. The next

step is to extend the use of the wiki to staff from other teams. The efficiencies experienced by the Research Services unit through its use of the wiki have been good, but they have been somewhat limited as the wiki is currently not widely used within Curtin.

Other issues to be investigated involve improving the usability of the wiki. For example, a WYSIWG ('What You See Is What You Get) editor was recently released by a MediaWiki user, as an extension to MediaWiki, and may be worth incorporating into the team wiki to assist users when updating or creating material (*FCKeditor*, 2006).

Currently documents created and edited on the wiki need to be reformatted by hand when completed (for publication on the Library website), or when they need to be shared with people outside the Library. Options for exporting such documents into Word or .pdf format need to be investigated.

Additionally, if the wiki is to be used more widely within the Library, it may be necessary to ensure that some pages are 'locked', so that they are 'read-only', and cannot be edited by just anyone.

### **Conclusion**

The experience of using a wiki has been a positive one for Curtin's Research Services unit. The wiki is worth investigating as a tool for the Library, as it can make collaboration more efficient and more effective. The fact that material on the wiki is so easy to edit, means that users are more likely to develop a sense of ownership and responsibility, and are more inclined to keep material on the wiki current.

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