



# Library Web Site Assessment

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## ABSTRACT

Libraries must increasingly compete as providers of information. Most, if not all, libraries now have a Web page that serves a variety of functions. Increasingly for some users the library web page may be their first introduction to a library. Furthermore, on-line use of library resources is becoming increasingly common. Accordingly an effective Web page design is essential. This paper presents a Web page assessment tool, developed by the authors, based on a model used in the e-commerce sector. This tool was used to analyze the Web pages of libraries in the Australian Vocational Education & Training sector. The results clearly show both the strengths and weaknesses of Web pages. The lack of a standard method and guidelines for web page authoring is discussed.

## 1.0 INTRODUCTION

This paper sets out to investigate the current state of Web site development within Vocational Education & Training (VET) sector libraries in Australia. The scope has been kept narrow to facilitate comparisons between Web sites. The different goals set for different types of Web sites would cloud issues and make direct comparisons difficult to achieve. In particular the paper aims to, develop a tool for comparing and assessing library Web sites, test the tool on selected library Web sites, identify strengths and weaknesses in the process of library Web site development and, finally, identify directions for future development

Much is written on the application of the Internet to commerce. Here the potential for economic gain funds and fuels a frenetic pace of development. Libraries, on the other hand, have generally been required to meet the new demands and challenges presented by the growth of the Internet with little additional resources.

## 2.0 METHODOLOGY

### 2.1 Literature Research

McClure (1997) concluded that, from the library science perspective, most reports pertained "to the assessment of information content and its organization in the Web site". Smith (1997) proposed a set of criteria, which could be included in a librarian's "toolbox" when selecting sites to "be linked to a resource guide, library Web site or in judging the "appropriateness of information for a particular query or user". However, as suggested by McClure, none of this material considers the assessment of library Web sites.

McClure also indicated that, "Except for the field of computer graphics, most of the literature from the field of computer science does not deal directly with Web site design". He also, usefully observed that, "the literature from the business field focuses on designing Web sites for customer use".

As libraries increasingly regard their users as clients, it seemed reasonable that information produced for the develop-

ment commercial Web sites could be used. Data on what is held to be good design could be turned into guides for assessment.

Abernathy (1999), for example develops some simple rules of what he refers to as Web site Wow. Windham (2000), concentrates on content. He states that "relevant and dynamic content...keeps the customers coming back."

Gomez.com is a commercial organization which measures the quality of e-commerce Web sites. The company produces a "scorecard" for each Web site it assesses. Up to one hundred and fifty criteria may be assessed on a scorecard for a particular class of web site. Criteria are gathered into five categories as follows:

- Ease of use
- Customer confidence
- On site resources
- Relationship services
- Overall cost

The paper How to manage a library Website (2000) sets out a number strategies library Web site designers can employ to improve their Web sites.

In addition to these general ideas it also offers some specific suggestions, including:

- Keep the look and feel pleasant, consistent and functional
- Have the library catalog included on the site, preferably in a Web based format
- Provide a mechanism for communication with the library
- Establish a reference and information service either by e-mail or FAQ's

A different model was developed by Mich and Franch (2000) in the 2QCV2Q model. This model derives its name from the questions associated with the six loci, or sets of questions introduced by Cicero. The six questions are:

- |              |               |
|--------------|---------------|
| · Identity   | Quis (Who)    |
| · Content    | Quid (What)   |
| · Services   | Cur (Why)     |
| · Location   | Ubi (Where)   |
| · Management | Quando (When) |
| · Usability  | Quomodo (How) |

Web sites, even in their most simple forms, represent an expenditure of time and effort which, in accountable organizations such as libraries, has to be justified in some way. In order for a Web site to be assessed in terms of how well it fulfilled its purpose, its purpose needs to be clearly stated. Golding, Carter and Konia (2000) detailed the need for the development of Web site guidelines. In developing the guidelines they highlight the need for a thorough needs analysis.

As the literature research failed to produce an acceptable model for a library Web site assessment tool it was decided that one should be developed.

**2.2 Assessment Tool**

The 2QCV2Q model was selected as the starting point for the development of a suitable assessment tool. As developed by Mich and Franch (2000) the model was originally proposed for the evaluation of Web sites in the tourism sector. In modifying the model information was incorporated from all the other papers discovered in the literature research. This was combined with the personal experience of the author as the manager of a VET sector library Web site.

Particular emphasis was placed in expanding the content and services criteria. This was in response to a recurring theme in the literature that, content and interactivity are key factors in determining the usefulness of a library Web site. Each criteria requires a simple Yes or No response. Table 1 sets out the list of criteria developed.

As the only permitted responses are Yes or No the criteria had, in so far as possible, to be stated in a way which does not necessitate a value judgement to be made by the assessor. It proved to be impossible to avoid this in all cases. Forcing a Yes / No answer should, however, limit the confusion in the case of criteria which do not naturally produce a Yes / No answer.

Each of the selected library Web sites was examined by the first named author. Prior to this examination the author had not examined the site. This work aimed to validate the assessment tool. Further validation will require the application of the tool by a wider range of assessors.

**2.3 Survey**

To assist with the validation of the assessment tool and, provide information on the design, construction and management of library Web sites a survey of library managers was also undertaken.

The first section of the survey aimed to get a measure of the degree of importance library managers placed on their Web sites. Questions in this section required respondents to rank their responses to the following the statements:

Our Web site/page is:

- Very Important to the Operation of our Library
- Useful only for information about the Library (hours, locations, etc.)
- Used extensively by external students
- An important way of collecting information from the Internet
- An important way for our users to communicate with us

The second section asked for information relating to the planning process undertaken in the development of the library's Web site. The questions put were:

- Was your site planning included in the planning for your institution's site
- Was the planning for your site assisted by consultants or contractors hired by your institution
- Did you perform a Needs Analysis before designing or implementing your site/pages
- Was the Needs Analysis formally documented
- Please list the main headings under which the analysis was documented
- Did you conduct any formal survey or research work in drafting the Needs Analysis

The next section looked at design and implementation. The questions in this section were:

- Was the design and implementation of your Web site included in the design of your institution's site
- Was the design for your site performed by:
  - ~ Consultants or contractors hired by your institution

- ~ Specialist staff or computing staff working for your institution
- ~Library staff

- What software tools were used in the creation of your Web site/pages

The following section looked at how the site gets updated. The questions in this section were:

- Have you documented a maintenance schedule for updating your web site/pages
- Is your Web site updated directly by Library staff
- Have you scheduled reviews of the design of your Website

The final section of the survey sought information about staffing issues in relation to the development and maintenance of the library's Web site. The questions put in this section were:

- Does your institution employ a Webmaster or a person responsible for the maintenance of its Web site
- Is there a member of the Library staff responsible for the maintenance of your Web site
- What level of formal training does this person(s) have in computer science or multi media
- What level of formal training does the Library manager have in computer science or multi media

The survey was prepared as a html form on the first author's Web site and the URL sent to selected library managers in an e-mail. Respondents were asked, in the e-mail, to complete the form on line.

**2.4 Selection of Library Web Sites**

The National Library of Australia's library gateway service (<http://www.nla.gov.au/libraries>) was used to select libraries for this survey.

**3.0 RESULTS**

**3.1 Assessment Tool Results**

Table 1 shows the number and percentage of library Web sites, which obtained a Y against each of the criteria.

\* To score a Y on this criteria a site had to list within two pages of results when searched for on the search engine.

**3.2 Survey Results**

**3.2.1 Importance**

The answers to the importance questions were given numerical values ranging from 1 for strong agreement that the site is important to 5 for strong disagreement that the site is important. As question two was phrased in the negative the scores were reversed for this question. The scores for each question were added and averaged to give a measure of the importance of the Web site to the library.

Important							Not Important			
1.4	1.4	1.8	2	2.4	2.8	3	3.2	3.4	4.2	

**3.2.2 Planning**

Table 2 details the responses to the questions on planning

**3.2.3 Design & Implementation**

Table 3 details the responses to the questions on design and implementation

**3.2.4 Updating**

Table 4 details the responses to the questions on design and implementation

**3.2.5 Staffing**

Table 5 details the responses to the questions on staffing

Table 1

Criteria	Number of Y's	Percentage of Y's
<b>Identity</b>		
Do the pages clearly identify the library service or library	31	91
Do the pages have a consistency of design with the pages of the parent organization	32	94
Do the pages provide a link back to the parent organization's home page	32	94
Do the pages include clear page identifiers	33	97
Do the pages include page footers or headers	22	65
<b>Content</b>		
Do the pages have more than one page	25	74
Do the pages have subject organized links to other web sites	18	53
Do the pages give details of library locations	32	94
Do the pages give details of library hours	31	91
Do the pages give details of collection strengths and weaknesses	4	12
Do the pages give details of library rules & conditions	21	62
Do the pages give details of library services	29	85
Do the pages give details of recent acquisitions	3	9
Do the pages provide an e-mail link	21	62
Do the pages provide an e-mail address	15	44
Do the pages provide a physical address	22	65
Do the pages provide a phone number	27	79
Do the pages provide a fax number	17	50
Do the pages include how to learn & study guides	6	18
Do the pages include referencing & citation guides	9	26
Do the pages include searching guides	13	38
<b>Services</b>		
Do the pages provide access to the library's catalog	18	53
Do the pages provide access to other library catalogs	17	50
Do the pages provide access to other on-line databases	1	3
Can users request, thru the use of forms, additional information	4	12
Can users request, thru the use of forms, reference information	0	0
Can users request, thru the use of forms, new items for purchase	3	9
Can users request, thru the use of forms, the loan of items from the collection	0	0
Can users request, thru the use of forms, inter library loans	2	6
Can users request, thru the use of forms, library membership	17	50
Do the pages provide access to search engines	11	32
<b>Location</b>		
Is the URL intuitive and easy to remember	25	74
Is the Web site easy to locate on Web Wombat (an Australian search engine)*	23	68
Is the Web site easy to locate on alta Vista*	23	68
Are the pages linked from the parent institution's home page directly (one click required)	20	59
<b>Management</b>		
Is the information up to date	14	41
Do the pages include creation and modification dates	14	47
Do the pages use appropriate technology	33	97
<b>Usability</b>		
Can the pages be accessed with standard hardware and software	33	97
Do the pages support disabled access	0	0
Do the pages download quickly	33	97
Are the pages easy to navigate	34	100
Do the pages support languages other than English	0	0
Are the terms and symbols easy to understand	32	94
Does the site provide a site map or search facility	11	32

Table 2

Criteria	Number of Positive Responses
Was your site planning included in the planning for your institution's site	5
Was the planning for your site assisted by consultants or contractors hired by your institution	1
Did you perform a Needs Analysis before designing or implementing your site/pages	1
Was the Needs Analysis formally documented	0
Did you conduct any formal survey or research work in drafting the Needs Analysis	1

Table 3

Criteria	Number of Positive Responses
Was the design and implementation of your Web site included in the design of your institution's site	4
Was the design for your site performed by consultants or contractors	0
Was the design for your site performed by specialist staff	1
Was the design for your site performed by library staff	6

Table 4

Criteria	Number of Positive Responses
Have you documented a maintenance schedule for updating your web site/pages	0
Is your Web site updated directly by Library staff	7
Have you scheduled reviews of the design of your Web site	6

Table 5

Criteria	Number of Positive Responses
Does your institution employ a Webmaster or a person responsible for the maintenance of its Web site	10
Is there a member of the Library staff responsible for the maintenance of your Web site	7

Only one library reported that the person responsible for updating their Web site had any formal training. Two library managers reported some university training in an information technology related area. Another library manager reported having attended an introduction to html course.

**4.0 ANALYSIS**

**4.1 Assessment Tool Data**

**4.1.1 Web Site Ranking (All Assessment Tool Criteria)**

Analysis of the data obtained from the Assessment Tool indicates a broad range of standards. Graphing the distribution of the number of Web sites against the number of positive responses to criteria (Y's) reveals a bi modal distribution. See Graph 1

Clearly there is a cluster of Web sites which achieved positive results on approximately 40% of the criteria and, another cluster achieving around 65%.

This supports the observation that some library Web sites exist only because they are part of their parent institution's site. They often contain a minimum of information. Often the informa-

tion is in a standard format for the site.

Other Web sites appear to demonstrate a strong commitment on the part of the library to use the Web to extend the services they provide. In many ways these Web sites appear to be following some of the patterns established in e-commerce.

**4.1.2 Identity Criteria**

Most library Web sites identify the library and the library pages well.

**4.1.3 Content Criteria**

Only 74% of the library Web sites surveyed had more than one page.

Location and contact information was generally well provided. Over 90% of Web sites provided location and hours information. 79% gave phone numbers and 62% gave an e-mail address.

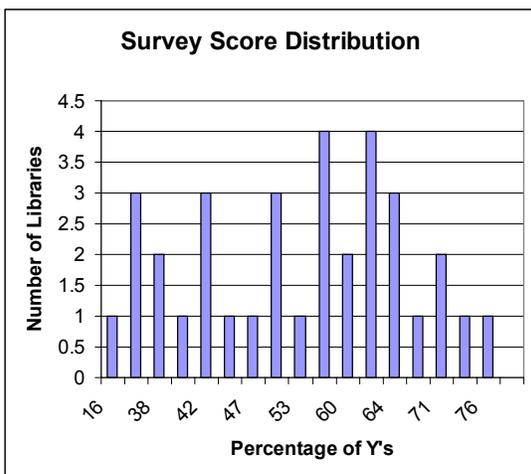
Beyond this basic information, however, many sites failed to offer the user very much at all. Only 9% of sites provided information on recent additions to the library collection. Given the emphasis on currency in the e-commerce literature this represents a very poor result.

Another key content area found on a few library Web sites is study assistance information. In particular the assessment tool looked for three features commonly found on library Web sites in the academic domain; study and learning guides, searching guides and referencing guides. These appeared on only 18 – 38% of sites.

**4.1.4 Services Criteria**

Somewhat surprisingly only 53% of sites surveyed gave users access to the library's catalog. E-commerce literature stresses the need for Web sites to build a relationship with their users. One key way of doing this is by making the site useful in communicating with the provider and a means of conducting business. Frequently this is done with the use of forms, which allow the user to make their requirements known to suppliers. Less than 10% of the library Web sites surveyed provided any forms to request services or information.

Graph 1



#### 4.1.5 Location Criteria

Most web sites were easy to locate using either an Australian (Web Wombat) or international (Alta Vista) search engine. Some URL's suffered as a result of the web page being hosted by a state level organization. This often made them long and not at all intuitive.

#### 4.1.6 Management Criteria

Only 47% of library Web sites surveyed displayed addition and modification dates. Again this is contrary to the recommendations given to e-commerce sites which wish to ensure users revisit the site.

#### 4.1.7 Usability Criteria

All the sites were simple to access and use. Only one of the sites surveyed required anything beyond a standard Web browser.

The lack of site searching software, or site maps (only 32% of sites had one or the other) was noted, but was not considered to be a significant problem given the relatively small number of pages on most sites.

Given that all the sites surveyed were owned by government funded institutions, it was surprising to note that none offered any assistance for handicapped users. Government policy clearly seeks to make access to government services available to all citizens.

Another apparent omission is lack of support for languages other than English. Australia is a very multi cultural country and, many students in the VET sector are migrants seeking to improve their language and other skills to prepare them to enter the workforce. In addition to resident, non English speakers the VET sector is increasingly seeking to market its courses to overseas students. However, the library Web sites surveyed make no effort to accommodate these users by providing even a minimum of non English support.

### 4.2 Survey Data

#### 4.2.1 Needs Analysis

Only one library reported having done any needs analysis before designing its Web site. No sites reported having documented any analysis. Library managers provided comments such as:

“Most of the analysis process was done by the IT Centre. I searched the Internet for information about creating successful / useful Library web pages and passed on this information to the IT Centre staff.”

Some libraries were required by their institutions to produce a Web site almost on the spot and were not given any time to do any analysis. For example:

“Development was on short notice and by library staff following the formation of TAFE ?????? from the 4 former ??????? TAFE institutes in 1998.” (Author's note. Name omitted to maintain confidentiality)

Lack of a rigorous and well documented analysis appears to be a common feature in the development of library Web sites in the VET sector.

#### 4.2.3 Training & Staffing

Training and staffing are major problems. VET sector libraries are often small and lack the depth of staff necessary to hold the expertise required to take full advantage of the possibilities offered by technology. As noted, only two library managers and one staff member were reported as having any formal training or skills in the information technology area.

## 5.0 CONCLUSIONS

This paper discussed the development of an assessment tool for library Web sites. The tool was based on a model proposed by Mich and Franch (2000) but, was customized for library application.

In the customization process considerable attention was paid to literature from the e-commerce field. While libraries have not traditionally been linked to the commercial world, they are increasingly being required to adopt more customer focussed, client centred methods of operation. In this environment it is entirely appropriate to borrow successful ideas from e-commerce.

The assessment tool was tested on a sample of VET sector libraries from across Australia. It produced a distribution of results, which had a close correlation with the subjective assessment of the first author. The results obtained could be logically explained and justified. It is felt, therefore, that the assessment tool is valid and could be applied effectively to other library situations.

In the process of testing and validating the assessment tool the strengths and weaknesses of VET sector library Web sites were examined. One particular problem is the lack of any formal needs analysis. Without a thorough understanding of the needs of the users and the purpose of a Web site it is arguably difficult for library managers to assess the efficiency and effectiveness of their web sites.

In many ways the situation may be analogous to the situation, which developed in the software industry before the introduction of systems analysis methodologies. The survey results indicate that Web sites are being developed on an ad hoc basis with bits being added as the need or inspiration arises. Experience with other software systems shows that it is almost inevitable this will eventually lead to the development of unmanageable Web sites.

Current systems analysis tools are not well suited to either Web site design or the library environment. A systems analysis methodology, which is suitable to both web site design and the library environment, is required if library Web sites are to progress.

In addition, institution management needs to clearly recognize the role of the library as a key provider of Web site content. Libraries will require additional staffing and training to enable them to take full advantage of the possibilities the technology is offering.

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