CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

5.1 Discussion of Findings

Generally, the academic libraries in Malaysia have set up well-designed and useful Web sites. A few academic library Web sites, however, have very simple and basic features.

Some of the well-designed and useful Web sites cannot be accessed during the study due to the instability of their Web servers. This instability has resulted in difficulty to examine the Web sites at the same period for the items noted on the matrix---and affected any generalisation of the findings of the study.

5.1.1. Virtual expressions of academic libraries in Malaysia

With regard to the provision of general basic information about the library on the Web sites, there does not seem to be much difference from what was reported in the literature review. Some of the general basic information cannot be found during the study due to the very common problems of Web navigation.

Provision of general basic information should not be the only major function of Web site as is the case in three academic libraries in Malaysia. As academic library Web sites are becoming an important navigational devices in the organisation of information, they should act as a source of information for teaching, research, and study for their universities staff and students (Stover, 1997).

The information professionals and library users have also indicated that the major function of Web site should go beyond general basic information. This indication is based on their questionnaire survey whereby they rated *the contents of Web sites are updated or refreshed on a regular basis* as the most important criterion for evaluating academic library Web sites in Malaysia.

The findings of the Online Public Access Catalogues (OPACs) show that six libraries have not provided OPAC of the library through a Web interface. Provision of OPACs should be seamless access as the information professionals and library users have regarded seamless access as very important criterion in their questionnaire survey.

Link to other Internet resources can be very useful to the library users. Therefore, those library Web sites that do not have links to other Internet resources should be

encouraged to organise Internet resources for library users. The questionnaire survey has also shown that *links to relevant Internet resources* gained the means of 4.25 and 3.95 (see Appendix C) among the information professionals and library users, respectively.

Similar to UK academic library Web sites, dead links are also found in some of the academic library Web sites in Malaysia. These dead links should be minimised as the results of questionnaire survey regarded the verification of links as a very important criterion.

Provision of interactive services is not common on academic library Web sites in Malaysia. These services should be widely developed for the convenience of library users. Library users will be encouraged to use the Web sites on an ongoing basis if they know that many services can be done through the Web site.

Academic library Web sites in Malaysia are also not aimed at providing internal information resources into the Internet. In addition to providing general basic information, emphasis in most cases is being put on accessing what is already available on the Internet rather than adding to the information content of the Internet. This emphasis is evidenced by provision of electronic database services largely focus on external electronic database.

Although Clyde (1996) has mentioned that an English version is virtually essential if the Web site is to be useful to the people who might visit it, the questionnaire survey has shown that this criterion in a very low ranking of importance compared to other criteria. This finding can be attributed to the large number of Malaysian academic library Web sites that are developed using English and also that most of the library users are bilingual.

Another criterion, *technical service departments are embedded in the Web sites*, is also ranked very low in terms of importance. Information professionals and library users have perceived the embedding of technical service department as one of the lowest important criterion. This perception can be attributed to the fact that technical services on the Internet seem to be intended for a narrower 'audience'--- other cataloguers. Technical services do not directly served the library users.

In analysing the provision of technical services, none of the academic library Web sites in Malaysia is found specifically provide information or issues related to acquisitions, cataloguing, serial, and preservation. The absence of technical services information contrasts greatly with the academic library Web sites in America and Europe, where there is an abundance of information about the technical service departments in these libraries. A few good examples of technical service department on the Internet have been mentioned. They include the

Princeton University Libraries Catalog Division Home Page at http://infoshare1.princeton.edu/katmandu/cathome.html, the University of California-San Diego (UCSD) Libraries Technical Processing Online Tools (TPOT) at http://tpot.ucsd.edu, and the Cornell University Library Technical Services Manual at http://www.library.cornell.edu/tsmanual (Harizan and Low, 1998).

Although Stover (1997) and Kroeker (1999) has advocated the need for academic library Web site to support teaching role of the university, provision of instructional materials and teaching techniques through collaboration with faculty, has not yet been embedded in academic library Web sites in Malaysia. The necessity of academic library Web sites in Malaysia to provide such instructional support is still in question as the information professionals perceive it as the lowest important criterion and the library users rate it as the third lowest important criterion.

One of a top ranking criteria, *date of last update should always be present*, is present in most of the main pages of academic library Web sites in Malaysia. However, they have failed to provide it in their information content. Only three libraries have incorporated date of last update into every Web page of their Web sites. All Web pages should have an indication of when the page is last updated

since the information professionals and library users have regarded it as one of the most important criteria.

Title of the Web site should be descriptive for search engines to get the most important content indexed is also a criterion that is in the top ten ranking of both the information professional and library user groups. However, the findings on marketing techniques show that academic library Web sites in Malaysia have not attempted to create a good meta tag description statement for search engines. The libraries should include the keywords likely to be used by people searching for the Web page if they aim to increase the number of visitors to their Web sites.

Existing literature clearly discourages the creation of Web pages that are difficult to navigate. Most of the academic libraries in Malaysia have taken into consideration this Web page design principle when designing their Web pages. Thus, their Web pages with image files do not take a long time to load (to appear completely on the computer screen).

5.1.2. The perceptions and expectations of information professional and library users

The survey method is used in order to increase the validity and reliability of the qualitative analysis findings and to determine the core evaluation criteria of academic library Web sites in Malaysia. Information professionals and library users have chosen 14 core evaluation criteria (see Table 5-1). These 14 core evaluation criteria are from the top ten criteria in their perception ratings of which 7 criteria appear in both top ten lists of the information professionals and library users.

While Web quality standards have not yet led to widespread commonalties, these 14 criteria express the information professionals and library users' view and their expectations towards a useful academic library Web site. To what extent do the content and design of academic library Web sites in Malaysia meet their perceptions and expectations? Practically all of the Web sites have some faults and defects in nearly all core evaluation criteria. Each library has met certain, but not all, of the criteria.

Minor problems such as the font size is too small, the mix of British spelling and American spelling in few Web pages, and charts and Web pages do not appear,

TABLE 5-1: 14 CORE EVALUATION CRITERIA OF ACADEMIC LIBRARY WEB SITES IN MALAYSIA

Evaluation Criterion
The contents of Web sites are updated or refreshed on a regular basis
The Web sites have a logical and clear structure
Text should be written in a clear, concise manner
Notification on any changes in the address of the Web sites or Web pages
The sources for any factual information are clearly listed so they can be verified in another source
The information is free of grammatical, spelling, and other typographical errors
If there are charts or graphs containing statistical data, the charts and /or graphs are clearly labelled and easy to read
Seamless access to all electronic databases of the library (such as OPAC, exam papers, and thesis abstracts)
Link to the library's parent institution Web site
Link to the main page itself in each page of the Web site
Links to relevant Internet resources
Downloading of single pages are proportionately fast
Title of the Web site should be descriptive for search engines to get the most important content indexed
Date of last update should always be present

are found in all of the Web sites when examined for the following 4 criteria: *the sources for any factual information are clearly listed so they can be verified in another source; the information is free of grammatical, spelling, and other typographical errors; the charts and /or graphs are clearly labelled and easy to read; and downloading of single pages are proportionately fast.*

The issue of currency is critical. Information professionals and library users have also rated it in the top of the ranking. As mentioned above, however, there are three academic library Web sites that provide general basic information of the library only. Such general basic information does not change much. As a result, those Web sites would not have to be updated or refreshed on a regular basis.

Some of the academic library Web sites have listed all the items of general information of the library in their main pages. These main pages do not even attempt to include fundamental principles of information organisation. If the main pages are not organised, the Web sites cannot be considered as having a logical and clear structure.

During the qualitative analysis, it is found that the text information of one well-designed Web site is not written in a clear and concise manner. It is the biggest file among the text files, where all sorts of services, rules and regulations, and

inter library loan are explained as in its printed document files. Therefore, some items are written in English or Bahasa Malaysia without corresponding translation to the other. It reflects a "gold rush" mentality, which encourages a sense of false urgency. It appears to be a widespread belief that a presence on the Web is better than having no presence at all.

It is also found that one academic library Web site did not give notification of its change of its Uniform resource locator (URL). As a result, a message to the Webmaster that used the email address provided by the old version of Web sites was returned. Another library did not give notification of its change of URL having two OPAC Web pages with different designs could be accessed by users; of which, the old OPAC Web page is accessible through the link created by other library Web site. Such notification oversights confuse library users and outdated information may be given.

The lack of seamless access is evident in four library Web sites. Access to their online catalogues is achieved through a telnet link. Academic libraries in Malaysia must note that "seamless access" to electronic information is possible now, not "just around the corner". This is one feature that library users have been requesting for long time---a single interface to all electronic information.

Academic library Web sites in Malaysia should clearly identify its parent organisation. Two libraries do not include links to their parent university Web sites.

With regard to information organisation, every Web page should end up with a feature to bring library users back to the main page. Yet, many Web sites lack this feature. Four libraries have not included any link to their main pages.

Links to relevant Internet resources are a common feature in most of the libraries. These links sometimes result in the library user becoming overwhelmed with the amount of information provided by the Web site. Librarians have recognised this issue in other milieus. The same focus needs to be placed on Web site development and organisation.

Although information professionals and library users demand for descriptive title, academic library Web sites in Malaysia have made no attempt to create a good meta tag description statement for search engines. They lose an opportunity to promote themselves in the world. It implies that academic library Web sites in Malaysia have not aimed at competing for attention across an increasingly wide bandwidth of networking.

Some of the academic library Web sites in Malaysia do not state the dates of their most recent updates. The date should be indicated on every Web page since such information would be helpful to those who are concerned about the currency of the information.

5.1.3 Factor analysis results

By identifying 8 underlying factors in criteria evaluated of academic library Web sites in Malaysia, the factor analysis reveals the following key components: objectivity, reliability of links and information, authority and design control, accountability for content, marketing, accuracy, currency, and instructional support.

The eighth factor, "instructional support" can potentially be dropped, as most of the academic library Web sites have not incorporated instructional materials and teaching outlines of lecturers into the academic library Web sites.

There is a high degree of consistency between the revealed factor and the checklist developed by Alexander and Tate (1999). The factor analysis has made visible factors, which were not particularly focused on in the initial survey design.

Reliability of links and information is example of an important factor revealed through factor analysis.

It is important to note that the results of a factor analysis can be interpreted in various ways. Since the results do not, in themselves, offer any hard evidence in support (or negation) of any theory, care must be taken in interpretation. Although this factor solution suggests some overall useful factors, the interpretation of some criteria remains problematic.

5.2 Conclusions

This study confirms what other empirical studies found in other countries. Academic library Web sites in Malaysia are mainly providing general information of the library and their services. There is lack of information organisation in most of the Web sites. The stability of Web servers should be of the greatest challenge for academic library Web sites in Malaysia---they have to offer their information services around the clock.

Based on the findings, academic library Web sites in Malaysia have not come up to expectations as virtual expressions of the quality levels of the academic libraries. There are very strong expectations of these Web sites because people

would expect information professionals as one of several professions vying for leadership in the information age to organise and present information in a way that best fits the users attention and knowledge.

The findings also show that there are some remarkable differences between the usefulness of the academic libraries in Malaysia. Based on the 14 core evaluation criteria, the findings must be assessed as rather bad, with a few exceptions. Academic libraries are supposed to reflect the capacities of high-quality information institutions. However, some academic libraries would be embarrassed when their incomplete and sub-standard Web sites are posted for the entire world to view.

It is obvious that most of academic library Web sites in Malaysia are trying to make their content and design effective enough to draw the attention of potential users. Although they have not created a good meta tag description statement for the powerful of search engines which can boost the "visit" to their Web sites, they update their main pages on a regular basis. It seems clear that this update is an endeavour to follow each other closely and to copy features that they deem useful to attract potential users, from each other.

The findings reveal that every academic library Web sites in Malaysia has provided a good overview of the library and its services. This comprehensive information might persuade first-time visitor to read on and then use it. Therefore, the forth research question: what information content does the academic library Web sites in Malaysia display most effectively? There is no doubt that the answer is general basic information of the library.

Overall, Malaysian academic library Web sites are following the trends of academic libraries Web sites in developed countries. The findings reveal that academic library Web sites in Malaysia have many of the features mentioned in the matrix. They provide information and services, at least of the basic variety, similar to that of the academic library Web sites in developed countries. However, academic libraries in Malaysia have not provided information on instructional materials of lecturers and technical services of library which are common features of some academic library Web sites in Europe and America.

5.3 Recommendations for Further Research

The overall evaluation shows that Malaysian academic library Web sites are below the expectations of quality academic library Web sites. For this reason, it is

very important to conduct continuous evaluations in order to improve them in line with the development of information technology.

It is suggested that researchers and information professionals use the 14 core evaluation criteria to evaluate each academic library Web site based on a rating scale. This evaluation will give more specific results for the particular library to improve the weakness of its Web site---and come up to the expectations of quality academic library Web site.

Academic library Web site is a dynamic construction Web site. The evaluation results would be obsolete soon. Therefore, further studies should be conducted to evaluate the content and design of academic library Web sites in Malaysia. Regardless of time and budget, evaluation studies should combine two or more approaches to cross-check and validate results. The available approaches include survey research, interview, Delphi technique, focus group method, direct observation, self-assessment, performance appraisals, and records checks.

This study is portrays the perceptions and expectations of information professionals and library users pertaining to a useful academic library Web sites. Therefore, further studies should be able to include the Library and Information Science (LIS) students, LIS educators, as well as potential users of the library in

order to determine the core criteria required for evaluating the content and design of academic library Web sites in Malaysia.

Cross-nations studies on evaluation of academic library Web sites should also be conducted; the results of the studies can be established as a national or worldwide quality standard for academic library Web sites. This standard would allow the Webmasters of Malaysian academic library Web sites to refer for improvement.

Finally, other types of library Web site in Malaysia should be evaluated to determine whether they are good potential resources for those seeking information on the Internet. These evaluations would be able to give a comparison between academic library Web sites and other library Web sites in order to stimulate the continuous development of library Web sites.