Chapter 5

DISCUSSION AND CONCLUSION

5.1 Discussions

The analysis of Computer Science journal titles impact factors held at selected Malaysian university libraries indicates a reasonable degree of overlaps. This study also puts forward the view of possible sharing of resources to provide quality scholarly journals in Computer Science. This section will discuss the answers to the various research questions put forward in Chapter One.

What is the extent of serial overlaps among the selected university libraries in Malaysia?

The results indicate that the degree of overlaps is higher than previously assumed. The rate of overlaps ranged from 68.00% till 90.00% for all libraries, with an average of 79.60%. This findings is consistent with Potter's (1986) observation that journal overlaps was dependant upon library size. The findings from this study show that as the size of journal availability gets bigger, the degree of overlaps also increases. Out of 212 titles available, 54.24% are overlaps which means that are 115 titles subscribed by these five which libraries are overlap copies.

This study indicates a general trend in the collection of Computer Science journals among the university libraries. The degree of title overlaps and the percentage of unique titles were dependent upon the size of title availability in each library. This is clearly observed among the selected university libraries especially in UTM, UM and USM. The similarities in the holdings of Computer Science journals in each library

also reflect the degree of overlaps of the teaching and research programmes in these universities. Most of these libraries intend to stop their print subscriptions when the particular journal offers electronic versions either on CD-ROM or online. This, however, does not solve the problem of increasing cost of journal titles. If every library subscribe electronic edition of journals, their serials budget also need to be increased. However, the subscription of electronic journal titles can be shared within a consortium set up, on condition that efficient network systems exist. The results from this study can be used as an evaluation tool for libraries intending to cut cost on Computer Science journals with the intention of setting up electronic journal subscription consortium. Cooperative ventures could control the problem of overlap subscriptions and promote a more comprehensive coverage of quality Computer Science journal collections either in print or electronic online.

What is the level of availability of each journal title from the selected university libraries in Malaysia?

The results indicate that there is a relationship between the availability of journal titles and the unique titles. This study can be considered as a study on homogenous collection of Computer Science journals in university libraries and reveals that as the journal collection grows, the percentage of unique titles also increases. Hence, UTM has a larger pool of titles available and a higher percentage of unique titles. This findings is consistent with the study by German, Kidd and Pratt (1997) who observed a high level of unique titles held by four nursing college's libraries.

Generally, the level of journal titles availability in Computer Science among the selected university libraries collections is not encouraging. The measurement rating

ranged from 16.61% to 40.20%, with an average of 29.10%, which is within the lowest rating range of "Very Poor" collection. This indicates low coverage of high profiled journal collection in all the university libraries. This situation is worsened by the higher degree of overlapped titles compared to unique titles. There is a need to probe into this problem of low percentage journal titles availability in local university libraries if university libraries in Malaysia want to serve the much emphasized research in Computer and Information Sciences. A good quality Computer Science journal collection does not mean having (numerous) titles of journals in this field but rather making sure that the high ranking journals in this field are available for Malaysian researchers. Generally, the journals that are listed by *JCR* in term of high impact factor are highly cited and their articles are referred by experts and professionals in the discipline.

There are no clear trends in the holdings of titles in the seven categories under Computer Science. Perhaps, all university libraries considered have good collection in the area of hardware and architecture. The field of Cybernetics has just been added in *JCR 1998* and journal titles in this area are poor among all the libraries. However, three university libraries showed strong coverage of journals in the seven categories of Computer Science. They are UTM, UM, and USM.

Are the duplicate titles priced higher than non-duplicate titles?

The study on the cost of overlapping subscriptions of journal titles indicates that most of the overlapped titles cost below $2000 compared to the more expensive unique titles subscribed by one library. One conclusion that can be derived in this situation is the budget allocation for journals in each library is not enough to buy

expensive titles. Therefore, most of the libraries subscribe journals with low subscription rate and this results in a higher percentage of overlap titles below $2000.

Is there a relationship between duplicate serial titles and certain characteristics of serials such as publications form, publications starting date, language, price and impact factor (citation frequency and cited half life)?

In this study, all selected university libraries do not reveal clearly any existence of relationship between duplicate or overlap titles with certain characteristics of serials. Basically, all the university libraries held journal titles which are available in the English language and mostly in print format. This may be because English is the common language of communication among the scientists, technologist or researchers in Malaysian universities.

Some titles are now available online as electronic journals and most university libraries would subscribe to the journals in the new form. However, overlaps would still happen in journal subscriptions even in this electronic form as the new format is preferred. The librarians would be able to save on storage space and costs of bound journals. Hence, the move towards electronic journal support would result in some journal subscriptions being cancelled or changed to the electronic version. The reasons behind this rapid change in the late 1990 was the enhanced capabilities that the electronic medium provided such as integrated media, full text searchability, cheaper distribution costs, faster turn around time and easy access from any place. However, there are still some constraints especially among publishers of electronic

journals who insists on an agreement of copyright licensing, which only gives access to members subscribing to the IEEE/IEL publications.

The results from this study also indicates that the availability of high impact factor journals in Computer Science are not promising. The highest impact factor (IF 4.938) journal is *J Mol Graph Model* and it is available only in UKM, under the category of "Interdisciplinary Applications". According to a report on National Survey of Research and Development (1998), UKM spent about 68.8% of its research and development expenditure on Chemical Science, 12.3% on Medical & Health Sciences, followed by 5.3% on Environmental Sciences and 5.19% on Biological Sciences (MASTIC, 1998). This may be the reason why UKM subscribe to *J Mol Graph Model* as most of its research are concentrated in the field of Biological and Chemical Sciences. Therefore, this journal is not a totally pure Computer Sciences research and studies. One of the significant findings among the university libraries is their subscription to IEEE journals since the holdings data indicate that eleven IEEE journal titles are averagely held by the four university libraries. Therefore, a cooperation in acquisition of journals or a licensing consortium is needed among the university libraries to save cost and increase the availability of journal titles in Computer Sciences.

5.2 Implications

The findings from this study can be used by serials librarians in Malaysian universities as an evaluation tool in building a strong and quality journal collection in Computer Science. There is a need to subscribe to high profiled journals to

support research and development in this field. This study assumes that high profiled journals with high impact factors are heavily cited by researchers and listed in the *JCR*.

With the growth in serial publications and the rocketing cost of information, libraries are faced with financial constraints and this often results in the reduction of the serials budget. Generally, librarians would embark on a serials cancellation project, which in the long term could result in the deterioration of bibliographic services and support for research and university teaching. The main journal targeted to be cancelled would be those in low-use, high cost per use journal or overlap journal. The results from this study provide an awareness of the existence of journal overlaps and recommend methods to preserve the journal subscriptions.

Recognizing the existence of overlaps in this study, there are few ventures undertaken to overcome this old age problem in serials collection management. Malaysian university libraries have been fast in handling this situation. The most recent cooperative venture is the acquisition on CD-ROMs and electronic journals by several university libraries in the year 2000, called *Perpustakaan Digital Nasional (PERDANA)*. This cooperative acquisition venture allows the consortium libraries to negotiate collectively with serials vendor in order to cut cost and obtain volume discounts. Through the cooperation, acquisitions and resource sharing have been developed into formal purchasing consortia, either on a membership basis or on a regional, state or even national basis. Besides this, a union list of all titles acquired by participating libraries will be produced and mounted to participating libraries' websites. Cooperative acquisition allows rapid access to the serials bought by the

participating institutions. This cooperation is more on a regional basis as all the participating libraries are in the Klang Valley.

A cooperative venture into the acquisition of titles in a more focused area such as Computer Science can subsequently be implemented especially among universities which offered courses on Computer Science and Information Technology. Cooperation acquisition would increase the range of titles purchased besides cutting down the costs of purchasing overlapped titles. With this form of cooperation, the cost efficiency decision of buying a journal title would be based on the present value of future journal use, the marginal cost of consortium and the access time value for the end-users.

A center for cooperative measurement in journal collection should be set up with representative from each library as committee members to organise the operation and services of the cooperation. Besides cooperative in acquisition, a union list of journal titles can be produced to inform users of journal availability and its location. In Malaysia, there is a general joint listing of 573 titles of CD-ROM and Multimedia CD by 40 libraries known as the Union Catalogue of CD-ROM. This listing is published by the National Library of Malaysia and is available through website (http://www.pnm.my/cd-m.htm). However, this listing was updated up to July 1997 only. To solve this problem, a common system needs to be developed to handle the search and update records by each participating library.

Another service which can be offered by the center is the current awareness service for academicians and researchers who are members of participating libraries. This service provides interested people with photocopies of content pages from currently

received journals and it can be personalised to accommodate individual needs. The form of delivery can be fax or internal mail. In fact, many electronic journals that are online offer contents pages for free access through the Internet. This type of service and venture can be easily implemented for journal titles in Computer Science and Information Technology.

To provide an added value service, the serials center can provide copies of articles to faculties of participating libraries. With the digitised library system, copies of articles can be sent by fax or mailed directly to end users or the requesting library. The choice of journal availability would therefore increase because the journal collections in each library would be divided into three groups. The three groups are journals duplicated in other libraries belonging to the center, unique titles within the cooperative acquisition system and finally, journals that are not held in own library but available in other participating libraries. In this way, more titles will be available to member libraries. Besides that, cooperative use of indexes and automated abstract can be offered in the form of CD-ROM technology.

There are several benefits to the implementing cooperative acquisition and use of serials center to overcome the problem of high percentage of overlapped titles and low level of availability faced by the selected university libraries in this study. The significant benefits would be wider coverage and more titles made available under cooperative acquisition. The scope of collection will also increase due to the addition of unique titles from each participating library. Each library would have something to contribute to a cooperative programme because the smallest collection would have unique titles which other libraries can benefit from it. These suggestions

were also voiced by other studies on cooperative ventures (Altman, 1972; Tolliver, 1982; German, Kidd, Pratt, 1997).

The other benefit of a cooperative venture is saving of resources and cost for acquisition of journals. This enables an increase of other publication subscriptions as the cost of journal purchased by the center will be estimated by the average price paid by the universities. The five participating libraries will share equally the cost of journal subscriptions. Another benefit is cost saving as a result of negotiations with vendors for standard discount price for journals especially those in the electronic and CD-ROM format. Besides saving cost, this kind of cooperation can help reduce overlaps and duplications among libraries and achieve a wider range of locally available journal titles. The main benefit is undoubtedly the provision of quick and ready access resources. The success of such a venture would depend on the commitment and mutual understanding from participating libraries in maintaining the journal titles. They are responsible for their unique or overlapped titles. All the participating libraries must provide an OPAC that can accommodate links to electronic journals and cataloguing details to ensure that users can readily locate the issues of titles wanted. The current cooperative venture can be extended to other regional libraries such as UM, UKM and UPM.

5.3 Future Research

The findings of this study on journal subscriptions in Computer Science could be more accurate if combined with a survey on journal use. This journal overlap study is the beginning of many more subsequent research which are needed to study the feasibility of other cooperative acquisition programme in Malaysia. A larger sample

of collection is needed to provide a valid picture on the degree of journal overlaps and the level of title availability in local libraries. A further study is needed to investigate the characteristics and trends of overlapped titles. A larger data set on different subject areas are needed to emphasize the national need for a wider serials cooperation programme within different fields of study. Further research on journal costs and benefits of study are also needed to promote the cooperative measurement programme and to combat the escalating prices of serials.

Finally, it would be interesting to know what are the roles played by serials librarian in handling the rapid emergence in the print and electronic serials. A study on the impact of electronic serials on library and information staff in Malaysia libraries would be a plausible future study.