

Technical Services in the Electronic Information Environment

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Abstract

Technical services are as a mix of skilled and professional jobs (done mostly behind the screen) to provide user services in libraries. Technical services have been with the libraries throughout their evolution from the days of clay tablets, papyrus to paper and virtual libraries. Technical services have evolved making use of available technology of the day. In the days of all powerful and era-defining information technology, the technical services are still necessary to help libraries to accomplish their mission of connecting users with the needed information. New technology affords splendid opportunity to extend and augment intensively and improve qualitatively the library services to the users. OPACs not only have tremendous capacity but equally versatile powerful searching capabilities and mechanism. Classification has many new roles to play in designing, searching and managing electronic databases. This paper cites Electronic Dewey as an example to illustrate the role of IT in editing and publishing classification schedules. At the end some unsolved issues have been identified and emerging trends in technical services are enumerated.

1. LIBRARIES AND TECHNICAL SERVICES

Library technical services can be defined as a mix of skilled and professional jobs (done as homework mostly behind the screen) to provide user services in libraries. Bibliographic control constitutes the essence of technical services. Cataloguing and classification in turn form inner core of bibliographic control processes. Use of information technology (IT) in libraries has indeed disturbed this distinction. It has often been heard, mostly from those dazzled by the power of IT, that classification and cataloguing have become redundant in the days of computerised information retrieval and information networks. It is like feeling and saying IT and computers constitute librarianship.

These technophiles overtook the basic fact that IT is simply a tool, not the contents of library services. A tool does not define a profession, though could be central to it. Even today, catalogue is a tool central to library service and management. Indeed a computer catalogue is bit more than its outer form. Computer is not the mission but a technological power to accomplish it. Physical plant, its outlook, shape of its wares may change, but value and mission of library and information centres remain the same that is to provide timely information to those who need it. Library is more of a process than a place. To provide the right information in right quantity at the right time in a cost-effective way has been and will remain the function of libraries.

Both the librarians and library users have been interested in the catalogue as an information retrieval tool irrespective of its form. However, the objectives set out by CA Cutter as far back as 1876 are still being attempted by librarians throughout the world. The librarians in the automated environment are required to develop more effective methods of service to facilitate better access point and multi-dimension searches in the library holdings. Dr Sewa Singh throws light on these areas in his article. Mr Rajesh Singh's paper addresses such problems in cataloguing in two different technological contexts—printed card catalogue and online catalogue.

The fundamental purpose of a library is to see that its resources are utilised for maximum help to information seekers. Classification and cataloguing are the two techniques designed to facilitate its use. These help to expedite the fullest possible revelation of knowledge stored in a library collection. For total retrieval strategy, a complementary approach is essential for satisfactory revelation of the contents of the collection. Support is, therefore, necessary from alternative means of accessing information, such as catalogues, bibliographies, subject indexes with alternative subject approaches and reader's advisory services in guiding the user through the collection. Any system, either manual or mechanical, should be able to display a great deal of resources on any subject and thus save time in allowing purposive browsing and searching for information.

Although researches in this area have been going on for the last two decades, still there is no sign that automatic procedures are sufficiently developed to replace manual procedures. Most of these findings lack theoretical justification. In document classification, it is necessary to recognise the inter-relationship of terms and keywords. Then devise a mechanism in algorithm-design to compute similarities between keywords. This is a tough job. Though several attempts have been made at automatic technique the main barrier still remains the same, i.e., the lack of complete theory of knowledge representation. This is the area for research with great promise.

It is, therefore, more befitting to conclude this discussion by quoting Arthur Maltby which holds good even today. Maltby states: "The real issue confronting is to find a constructive and viable alternative to classification that can serve most library situations so well—for despite the difficulties classification is a good servant." This stands equally good for cataloguing too.

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Table 2: Some features of the 21st century libraries

Feature	Tool
Compact storage	Digital form, CD-ROM, DVD (Digital Video Disc—has 13 times more storage capacity than a CD-ROM)
Ease of reproduction	Scanners; computer copying
Remote access: removal of time and space barriers	Networks
Non-linear, multi-dimensional interactive texts	Multimedia and hypermedia

In brief, OPACs are compact, efficient, economic and powerful in bibliographic control. With the OPACs, keyword searching has gained popularity. Another advantage is that many variant forms of a heading can be retrieved, e.g., 'University Delhi' and 'Delhi University' both can be retrieved with two keywords 'Delhi' and 'University'. Ideally an online catalogue should allow the retrieval of a set of headings and then permits all headings in that set to be changed in the preferred form. OPACs allow enormously enhanced and economic access through multitudes of access points.

There is no need to place restriction on the length of the entry or on the number of subject headings anymore. Technology has an important role to play in determining what could be included in the catalogue record. It is now possible and viable to add extended annotations, or table of contents, or even back-of-the-book index to the catalogue entry. An online catalogue works as a classified and a dictionary catalogue; and also as a alphabetico-classed catalogue, simultaneously.

It is rightly said that with OPACs the libraries have regained some of the advantages of classified catalogues. Class number searching or shelf order browsing on the computer screen is now possible in all online systems. It has become, in fact, a standard feature now. Entries can be displayed in a strictly classified order. This will collocate information distributed in several different physical locations and can also

be made to indicate the status of the document, viz., whether out on loan, or still under process; or missing from the library or transferred to any other location. In addition, the subject headings in indirect form, e.g., Engineering-Civil Engineering-Bridges can be used with much advantage. These can thus work as alphabetico-classed catalogues.

Above all, an item can be assigned more than one class number; or an entire collection may be classified by more than one classification system. For example, a whole library or a part of it could be classified both by the DDC and the CC; and thus could be browsed on the screen in two ways. Simultaneous use of two systems on a given collection though bit costly could be quite useful in comparative classification and research. Easy reclassification of an existing library is another advantage.

4. USES OF CLASSIFICATION IN ONLINE DATABASES

The various uses of classification in online system were listed long back by Elaine Svenonius.⁵

In areas of knowledge, admitting of natural taxonomies, classification can be used to improve recall and precision and to save the time of the user in keying in search terms. In other areas of knowledge, perspective hierarchies can be used to contextualise the meaning of vague search terms, enabling the computer to stimulate in part the negotiations of a search request carried out by reference

librarians. Classification in online systems can be used to provide a structure for meaningful browsing. Classification can be used to provide a framework for the representation and retrieval of non-bibliographic information, e.g., statistical data. Automatic classification can be used to collocate citations in ways not possible in manual systems, e.g., by similarity of linguistic features, to achieve compatibility of retrieval languages by serving as a mediating or switching language.

Lois Mai Chan lists some additional uses of classification in computerised databases.⁶

Call number can be used effectively in retrieving large sets of related records on a particular topic, area, form, time or language. In a faceted classification searches could be made by any of the facet. Since long, libraries in Finland and Switzerland have been using UDC with many advantages in their computerised catalogues.⁷

Call number searches combined with verbal headings can locate data from many aspects and viewpoints. Such a highly manoeuvred searching may not be possible in traditional catalogues. Such versatility is useful for SDI services and for downloading subsets from large or cumulative databases.

Classification schemes with hierarchical notation, such as DDC, UDC and CC are designed for shelf arrangement as well as for subject retrieval. Built in hierarchy allows moving up and down the chain to move to precisely specific topics: to move from the bole to the newly sprouted leaf and vice-versa. Hierarchy allows expansion, refinement or even negotiating a search. We can construct virtual multi-dimensional classifications. Again, according to Chan: "with computer capabilities particularly hypertext, the development of poly-hierarchical and multidimensional classifications and post coordinate classifications appear promising".⁸

CK Ramaiah informs that a call number added to a hypermedia catalogue "helps the users in locating the information and also the physical locations of the books in different

floors showing the pictures of those floor, stacks, etc".⁹

5. COMPUTER EDITING OF CLASSIFICATION SCHEDULES

Conversely speaking, IT has come handy in editing and production of classification schedules. Computers and other elements of information technology find varied, vast and valuable applications in editing classifications in machine readable form. For example, since 1994, the DDC has been made available in CD-ROM version. For this a Unix-based Editorial Support System (ESS) was developed by Inforonics for the Forest Press in 1984.¹⁰

The ESS format is closer to the MARC format. The Dewey for Windows (DfW), the CD-ROM edition of DDC21 (1996), provides a Windows interface for the DDC. In the electronic version, upward and downward hierarchy has been added to each schedule and table record which provides disciplinary context of a number and shows major subdivisions of a number. It is easy to move up and down the hierarchy by highlighting and clicking. The relative index has been augmented by additional free tax terms; and Library of Congress Subject Headings (LCSHs) have been added to it.

The DDC databases at the Library of Congress today serves as the basis for standard English language print and electronic editions. Translated editions are also made from this database. It is extremely helpful to understand the use of class numbers in various ways, and to evolve an end user browsing mechanism using amplified DDC captions with DDC numbers. Translations are used to develop multilingual browser with Dewey notation as the common language.¹¹

Printouts from this database are made available for discussions at the regular meetings of the Editorial Policy Committee. Members of this committee can now interact via the Internet. A prototype is available at the Dewey Web page : <http://www.oclc.org/fp/>.

6. PROBLEMS OF USING OLD TOOLS IN NEW ENVIRONMENT

Our traditional subject access tools, such as classification and subject headings lists were designed for manual catalogues. Economically it is unviable to have new catalogues independent of these MARC records. The tools, such as the DDC or the Sears List, have simply been transported to the OPAC environment. According to Chan, studies show that users are not faring well in subject searches in OPACs. However, these tools provide a springboard for augmenting searches. She suggests:¹²

One road for such improvement is to load features of classification schemes into online catalogue to provide alternative routines to catalogue records to enhance vocabulary of the catalogue and to provide users with a map of how topics are inter-related. A second route is improvements to LCSH and the policies governing its use. The legacy of classification schemes and subject headings can be incrementally improved and adapted in the online environment.

7. SUBJECT ACCESS TO INTERNET

The World Wide Web has emerged as a gold mine for subject access to information and documents on the Internet. Librarians are at work to bring some order to the chaos of information available on this information super highway in order to improve subject access to it.¹³

There is no tradition of cataloguing or classification for the Web documents which is an uncontrolled but exponentially growing source. Mostly one has to rely on automated tools for subject access, especially the keyword access to full text documents. Chan pointedly identifies the following two questions grouping for answers in the new matrix.¹⁴

1. How can the subject retrieval tools found on the Web adapted for use in library catalogues?
2. How can the traditional tools for subject retrieval in library catalogues—classification

and subject headings—be used to control the great volume of information on the Web?

8. CURRENT TRENDS

In the West the technology is highly unstable. As in other matters so in library automation, India is a country of great paradox. There are libraries no better than a jumbled store house of books where accessioning is the only technical processing to the most advanced use of technology available anywhere in the world. But at the moment, a large number of libraries are through their first pangs of transition. Some of the trends can be easily visualised:¹⁵⁻¹⁸

- ❑ Card catalogues are being frozen and discontinued.
- ❑ More and more libraries will get automated, though virtual and print libraries will coexist.
- ❑ Very little original cataloguing will be done locally relying mostly on copy cataloguing; large scale out-sourcing of technical services may also be resorted to.
- ❑ More libraries are using multimedia interactive catalogues for various purposes.
- ❑ More regional area networks and subject networks are being established for pooling and sharing of resources, processes and experiences.
- ❑ CD-ROM or now DVD (Digital Video Disc) databases will become popular especially in small and remote libraries, and in the Third World countries libraries still struggling to have reliable telecommunication system and services.
- ❑ More and more non-print materials are being acquired in libraries. Large percentage of acquisition budgets is getting spent on electronic media, and large amount of budgets earmarked for buying access to commercial databases on networks.
- ❑ Technology will be used to add class number and other unique numbers to digitised material and hypermedia.
- ❑ Hierarchical classifications and subject headings are being inter-linked to provide intersecting searches.
- ❑ Navigation tools based on broader outlines of knowledge in libraries are being developed.

- ❑ On the other hand traditional classifications will be adapted to organise and mine information on the Net.
- ❑ Formatting of classification schedules is being improved to carry more information in the form of extended notes, instructions and improved terminology.
- ❑ In future, there may be two subject access systems: one for the indexers/cataloguers, and the other for the end users.
- ❑ Reclassification and switching over to a new system is on the increase. Automation provides a splendid opportunity to switch over to a better system without many hassles faced in the days of card catalogues (Title is retrieved from the database and the new class number is assigned on the computer screen. Later the spine level of the book is changed). A linked question is the retrospective conversion of old record into machine readable format. It is indeed a formidable task for which local policies have to be formulated whether to do it or not. If yes, then how to do it.
- ❑ In OPACs more access points and less description will become the norm. To do this, cataloguing codes will have to be revised.
- ❑ Catalogues will be mounted on the Internet or on regional and national networks. Catalogues will be integrated with other databases in the library.
- ❑ A major problem confronting libraries to be faced in near future is how to integrate all the databases housed or accessible in a library into a single user friendly system with a single interface.

9. CONCLUSION

Technical services have come a long way in libraries. Procedures and then practices *pari-passu* with the media and tools available have changed. The mission remains the same—to connect the user with the right information in the most efficient way. In the online environment the value of classification as a tool of retrieval has been greatly enhanced. It complements rather than duplicates the function of subject headings. Classification tends to play many new and more effective roles in the electronic and networked

information. There is a growing need to organise and retrieve subject information on the Internet. Aspects of traditional classification are being explored to use them in the new system and set up. Reciprocally, the subject access tools of the Internet may be adapted for use in the traditional libraries. Technical services will continue to play their supportive role and know-how details in helping the libraries to accomplish their humane and cultural mission of *acquiring, organising, dissemination and preserving knowledge for progress of the society and welfare of its citizens.*

REFERENCES

1. Younger, Jennifer, *et al.* Technical services organisation. *In* Technical services today and tomorrow, Ed. 2, edited by Michael Gorman. Libraries Unlimited, Littleton, Colo, 1998, pp.165-82.
2. Gorman, Michael. Technical services today and tomorrow, Ed. 2. Libraries Unlimited, Littleton, Colo, 1998. p. 201.
3. Buckland, Michael. Redesigning library services. ALA, Chicago, 1992. p.6.
4. *Ibid.* pp.9-17.
5. Svenonius, Elaine. Use of classification in online retrieval. *Lib Res and Tech Serv*, 1983, 27(1), 76-80.
6. Chan, Lois Mai. Classification: Present and future. *Cat & Classif Quarterly*, 1995, 21(2), 5-17.
7. Satija, MP. FID-88 Pre-conference seminar on computer application of UDC. *Int Classif*, 1988, 15(3), 149-50.
8. Chan, Lois Mai. *Op.cit.* p.11.
9. Ramaiah, CK. Multimedia systems in libraries and their applications. *DESIDOC Bull of Inf Technol*, 1998, 18(6), 35.
10. Finni, John J & Pauline, Peter J. The Dewey Decimal Classification enters the computer age: Developing the DDC database and editorial support system. *Int. Cataloguing*, 1987, 16(4), 46-48.
11. Beal, Julianne. Dewey for Windows. *In* Dewey decimal classification and international perspectives. Ed. 21, edited by

- Lois Mai Chan & Joan S Mitchell. Forest Press/OCLC, Albany, NY, 1997. pp.29-42.
12. Chan, Lois Mai, et al. Subject cataloguing and classification. In *Technical services today and tomorrow*, Ed. 2, edited by Michael Gorman. Libraries Unlimited, Englewood, Colo, 1998. p.107.
 13. Kao, Mary Liu. *Cataloguing and classification for library technicians*. The Haworth Press, New York, 1995. pp.130-32.
 14. Chan, Lois Mai, *op.cit.* p. 108.
 15. Kao, Mary Liu, *op.cit.* pp.130-32.
 16. Chan, Lois Mai. *Classification present and future*. *Cat & Classif Quarterly*, 1995, 21(2), 16.
 17. Cochrance, Pauline Atherton. *New roles for classification in libraries and information networks*. *Cat & Classif Quarterly*, 1995, 21(2), 4.
 18. Ramaiah, CK, *op.cit.*, pp.25-40.

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