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APPROACHES TO RETROSPECTIVE CONVERSION OF CATALOGUE RECORDS OF LIBRARIES

Christopher O. Ola and Edward O.L. Eguavoen
Kenneth Dike Library,
University of Ibadan,
Ibadan.

Abstract. This paper discusses the precedents to retrospective conversion. It looks at the genesis and development of Machine Readable format. Emphasis is placed on thorough planning which should spell out the focus of the exercise; make provision for the right calibre of staff, provide the necessary funds; weigh and evaluate options; and ensure management involvement in monitoring the project. The options to retrospective conversion are detailed and the methods for carrying out the exercise are specified.

Introduction

The firm establishment of computer application to library processes, which enhances the possibility of analysing the whole operational system of the library and aids library services as well as decision making at various levels, heralds the inauguration of retrospective conversion. It is then time to improve clientele services by making all library records available to users on-line. The obvious method of providing library records (present and past) on-line is through retrospective conversion, which according to Gredley and Hopkinson (1990) is the conversion to machine-readable form of record, which predates the automation of library's catalogue. It means the adding to automated catalogue records of items that were originally catalogued manually. Retrospective conversion projects are usually undertaken at a later date with the assistance of files of machine-readable records for older Nigeria materials created by other organisations or libraries and information centres. Automation of library chores and functions constitute the necessary background for retrospective conversion. Libraries cannot embark on retro-conversion except they have already evolved the basis for such conversion.

The necessity for On-line Public Access Catalogue (OPAC) has provoked the automation of other library processes. This is particularly so with catalogue records. OPAC propels the conversion of bibliographic records to machine-readable form in order to make it (OPAC) functional. According to Peters and Butler (1984), the development of on-line catalogues and for on-line catalogue projects to be well established, the conversion of some or all of the bibliographic records to machine readable form must be achieved. Libraries can

harvest full advantage of computer technology and its impact on catalogue records only if the catalogue records are converted. Avram (1970), the chairman of RECON Working Task Force for Library of Congress posited that:

> *As libraries develop their plans for automation, it becomes increasingly apparent that the full benefits of the computer cannot be realized unless large stores of bibliographic information are available in machine-readable format.*

It is therefore pertinent that the first step to retro-conversion is the conversion of current bibliographic records to automated format. And, for any meaningful on-line searches to be conducted in any automated library, the materials in the library should have achieved a comfortable level of conversion. As it is commonly prevalent in the literature (Avram, 1970; Avram, Guiles and Maruyama, 1970), this is not a synopsis or an outline of a particular library's experience at retrospective conversion exercise as only a few, if any, can be said to have achieved partial conversion of their catalogue records among Nigerian libraries. The problems of retro-conversion have become quite omnibus today. Libraries in the country are battling with measures to be adopted in reconverting their bibliographic records. This is obviously an indication of definite progress in the level of information technology application in Nigerian libraries. Only libraries that have achieved a level of computerization can aim at retro-conversion in order to reap the full benefits of the new technology.

Historical Perspective

From 1967 the need to embrace the new horizon opened to libraries in managing their internal records and public catalogues became unavoidable, especially with the easily available and accurate bibliographic records in machine-readable form in the developed countries. Libraries then engaged in conversion exercises of their collection in an uncoordinated manner despite the fact that individual libraries were receptive to the policy of inter-library dependency in the exchange of bibliographic records i.e. libraries accepted catalogue data from external sources (other libraries). With the advent, from the middle of the 1960s, of MARC projects (especially MARC II) which were designed to develop a means and format for recording complete bibliographic data in machine-readable form and to establish a method by which data could be shared with other libraries through communication process, the barriers to adopting the machine-readable format for bibliographic records in Western libraries had finally been lifted. According to Butler, Aveney and Scholz (1978), the results of the developments in the decade since they were achieved are legion and the effect has been enormous.

First, MARC Project brought about standard communications format for bibliographic data, which made the use of data created by an outside source possible without the necessity to reconvert the data into machine-readable form. Second, a source of accurate authoritative bibliographic data in machine-readable form was established that could be tapped by any library. Ever since then, retrospective conversion exercises have been engaged in with relative ease. The experiences of several libraries taking advantage of the creation of resource databases by the Working Task Force set up to integrate records of about 70 participating libraries in the United States have been worthwhile. The contributions of On-line Computer Library Centre, Ohio (OCLC) at retrospective conversion efforts of libraries have also been germane to the development of automated library system and on-line services in the developed world (RECON Working Task Force, 1970).

Planning for Retrospective Conversion

A library that decides to convert its present catalogue records to machine-readable form is essentially creating a database of its own collections. There will be a need for thorough planning. It should be noted from the onset that retrospective conversion is time-consuming and library administrators must learn to be patient and allow the exercise to develop over a period of time although not necessarily over a long period. It is not advisable to rush the exercise, as the consequences of a hasty retro-conversion can be very grave.

Library administrators and managers must first be convinced of their desire to reconvert their records. With this, proper planning can then commence. Proper planning is imperative to spell out quite clearly the focus of the exercise and the way to go about it; to identify a team of competent staff; to make funds available; to weigh and evaluate different options of retrospective conversion; to make management responsible for monitoring the progress made; to ensure that moderate marginal latitude is given to accommodate possible errors; among other considerations.

Activities that require special attention while planning for retro-conversion include the following:

(i) **Identification of records:** The first step in retrospective conversion is to identify the catalogue records to be converted. Libraries of different sizes keep different types of catalogue records. Some libraries have the main public catalogue, a union shelf-list, subject authority files, branch libraries catalogue, special collection, public ordinance, etc. A library must decide which catalogue records should be converted and give the extent to which the records should be converted. Walton (1979) reported that at Old Dominion University (ODU) in Norfolk, Virginia, initially the shelf list was divided into four sections: exact LC copy with LC

card number; records with LC card number but requiring some changes to the call number or addition of copy/or location information; records requiring bibliographic changes; and OCLC records. This shows that the shelf list was identified for retro-conversion and further classification of the shelf list catalogue was made to make the process of conversion easy.

(ii) **Organising the records:** Retrospective conversion is a serious venture and must be carefully undertaken. A systematic arrangement of records to be converted must be made in order to achieve better results. Such arrangement can be in terms of drawing up program of phasing the conversion exercise by type of material or by period of acquisition. The report given by The Stella Project at the Trinity College, Dublin can be very enlightening in this regard:

> *In the early 1980s, the first retrospective conversion project began, targeting the card catalogue containing records for all books received between 1960 and 1968.*

It is clear from this that the phasing program adopted for "The Stella Project" was by period of acquisition of library materials.

(iii) **Costing and funding:** In order to maximise the success envisaged in retrospective conversion, there is need for adequate funding. It should be taken as a special project and although it needs many funds, efforts should be made to provide the needed funds. According to McDonald (1998),

> *The major stumbling block with retrospective conversion is financial. During the early 1990s, the Librarian began exploring ways of acquiring special funding for this. His efforts resulted in an anonymous donation spread over three years.*

Two things are apparent in this report: (a) Library administrators must seek for funding for their retro-conversion projects, even if they must seek for donations from private individuals and friends of the library; and (b) Retrospective conversion should be done systematically. It is noted that the anonymous donation was spread over a period of three years, which means that the exercise lasted for that period.

Peters and Butler (1984) identified four steps that must be costed when engaging in retrospective conversion, viz: (1) searching; (2) verification and editing; (3) coding and input of non-hits; and (4) obtaining final records. Variables, which must be examined in these steps, include: the amount of staff time required; changes imposed by bibliographic utilities and vendors; and the time required to complete the project. The final result of all this will be dependent on the various routines involved at every stage plus the cost of equipment and supplies.

(iv) **Staffing:** It is essential that the right calibres of staff are identified and given the mandate to execute the project. It is essential that the expert hands required that are not available in the library be employed. All this should be done bearing in mind cost-benefit and cost-effectiveness factors. Professional librarians, system analysts and data clerks should be pulled together to form a team of retrospective conversion staff. Lorenz (1970), the Deputy Librarian of Congress in 1969 said of the Working Task Force that handled RECON study:

> *Direct responsibility for the study was assigned to a working task force composed of librarians and system analysts representing different types of libraries. Henriette D. Avram was chosen to chair the working task force because she conceived the idea for the study and wrote the proposal for the Library of Congress.*

Not only was consideration given to the formation of a competent team, commitment of the experts was a parameter for nominating the person who headed the team.

(v) **Equipment and Supplies:** Adequate provision should be made for the procurement of necessary equipment like computers, special interfacing hardware such as OCR elements, etc. Supplies like diskettes, compact disks, electricity and other facilities must be constantly provided so that the retrospective conversion project will continue smoothly.

The Pragmatic Alternatives

The adjectival word pragmatic has been used to describe the options because some library administrators have very vague idea about retrospective conversion. Emphasis has been laid earlier on planning to draw attention to the fact that retro-conversion is not a project that can be handled hastily. The exercise has to be

approached with caution and handled with care. As it is capital-intensive, it is easy to throw the patrons money down the drain. The process of retrospective conversion is that sequence of steps necessary either to acquire, create or modify machine readable records, each of which would represent one or more physical items present in a given library's collection and it is subsumed under the available options. What really are the options? Do librarians in the developing world have alternatives from which to choose in matters concerning retrospective conversion?

The options available in retrospective conversion are basically three viz;

(1) **In-house retrospective conversion:** A library can decide to engage in the process of retrospective conversion in-house. This means applying all the necessary tools for the exercise using the staff and materials available. Whatever external expertise is required will be employed. Whatever materials or equipment are needed would be procured by the library.

(2) **Using Vendors and/or agencies:** There are a number of international commercial vendors and agencies. These agencies include OCLC Europe, North West Data Systems, Ebsco: the periodicals subscription agents, etc. All these engage in retrospective conversion exercises. A popular retrospective conversion agency is Saztec Europe Ltd. They can use many different techniques to achieve the best database for the catalogue cards that a library has to start with. They can also upgrade the catalogue cards by, for example, exchanging old classification numbers for new ones (McDonald, 1998).

OCLC offers data conversion as part of its service. It started out using LC MARC but having expanded into other countries recognized the need to convert data for its customers into national formats (Gredley and Hopkinson, 1990). Conversion cannot usually be made sufficiently generalized to work on all possible occasions. Because exchange formats depends on underlying cataloguing rules, conversion between formats entails conversion between cataloguing data. These agencies and vendors could be used to handle retrospective conversion wholly for a library.

(3) **Shared retro-conversion:** This is a situation where the two options identified above are adopted for retrospective conversion exercise in a library. Some parts of the catalogue records can be sent to established agencies to handle while the remaining records can be handled in-house. The system of shared responsibility could be adopted between the vendors and the internal retrospective conversion staff. This will mean that certain retrospective conversion functions will be done by the vendors while others will be handled in-house.

Methods Adopted for Retrospective Conversion and Their Implication for Nigerian Libraries

It should be noted that one or all of the following methods may be used in carrying out the exercise;

(i) **Keying Manually:** Keying or keyboarding is the most accurate way of getting a library's catalogue into machine-readable form. This process is time-consuming and needs to be done with a team of properly trained people under careful supervision to make sure the records are consistent and correct. Most retro-conversion activities that have resulted in the production of new MARC records have involved upgrading records by cataloguers who may have seen only the catalogue record and not the original document. It is therefore necessary to supervise keying of records to ensure accuracy.

(ii) **Optical Character Recognition (OCR):** This is synonymous with scanning. It requires expensive equipment and the cards must be properly formatted so that the author can be distinguished from the title. A scanner can be programmed to recognise the first line as the author and the second line onwards up to a specified piece of punctuation, as the title. Machines cannot make sensible decisions like human beings about how to index a catalogue card. Thus, there is a danger that the records created by a scanner may not be properly indexed, which will mean invariably that the database will be inaccurate and so not useful as a search device.

In the case of Kenneth Dike Library (KDL), University of Ibadan for instance, 'Expert-Edge' an agency using OCR technology for retro-conversion, handled a part of the catalogue record but did not quite succeed in its efforts. This is because the bibliographic record elements i.e. the fields and the sub-fields were not properly tagged to make it identifiable mechanically. OCR could easily have been the most acceptable option for Nigerian libraries if only a program that will ensure uncomplicated translation of records into collection databases could be developed. Effective delineation of fields and sub-fields need to be done such that the system will recognise and distinguish a corporate name, for instance, from a title. This is the function of tagging in the automation process.

(iii) **Resource database:** A library can approach resource databases when engaging in retrospective conversion. These databases include national bibliographic databases like LC MARC or UK MARC and commercial organizations like OCLC or Saztec.

According to Gredley and Hopkinson, (1990),

> *The way that retrospective conversion is usually undertaken now is to approach a cooperative to see what proportion of records that need converting is available in their database and then, if necessary, convert the rest oneself or have them converted by the agency. This is possible because a large core of records has been produced over the years by other organizations in their retrospective conversion activities and these can be made available more widely.*

This system of conversion involves the matching of records through the use of ISBN or LCCN or using other bibliographic particulars like authors, title, publication date and other data elements. The attempt made by KDL at matching catalogue records i.e. shelf list with L.C CD MARC was slow. The number of systems and staff devoted to searching the LC databases were few. Exporting of the bibliographic details into the hard disk and copying same into a diskette which would then be edited to meet local requirements and finally imported into the KDL collections database was a very slow process. It was further discovered that the library did not acquire the converter module with the software, (TINLIB) being used at KDL. This module includes an interface, which can facilitate record conversion. All these, made the effort of converting catalogue records using the system described above to be futile in KDL. It should also be noted that none of the vendors or library and information agencies in Nigeria is known to have the capacity for this method of conversion. No machine-readable resource databases have been developed locally. The agents merely engage in keyboarding what is generated on worksheets from card catalogue records.

(iv) **Editing:** This is mentioned here not as a method but as a procedure for retro-conversion. Whatever options we may decide to adopt whether keying manually, resource databases or OCR; one paramount thing is that we must ensure that converted catalogue records are properly edited before we import them into our collections databases. Editing is important in ensuring that converted records are consistent with local practice.

Conclusion

In concluding this paper it is necessary to note the following:

(1) Library managers must be careful when trying to contract out their records for retro conversion to agencies. Well-known, reputable agencies should be engaged.

According to Peters and Butler (1984),

> *the unwary librarian who is trying to engage in retro-conversion may be trapped by vendors whose interests lie mainly in selling their service, so they put themselves in the best light possible.*

(2) To discover the pitfalls and problems of retrospective conversion exercise, it is necessary to talk to librarians who are carrying out such projects or who had carried out such projects. They can detail their experiences and provide expert advice for the neophyte. This way, specific problems and techniques can be discussed.
(3) It must be known that each situation has unique aspects and a procedure satisfactory in one library cannot necessarily be transplanted to another without modifications. Librarians must be ready to accommodate these differences.
(4) Interaction with those carrying out retro-conversion will also give opportunity to gather data on the performance of various vendors.
(5) Visits to libraries currently carrying out conversion project will be most useful to observe the actual procedures and learn what such projects entail.

Libraries in Nigeria may have to live with dual catalogues for years to come. It may take some time before the card finally disappears from our libraries. We must not be hasty in discarding our card catalogue records. Perhaps the greatest singular challenge for our Association in our efforts towards automating the library system in Nigeria is the uncoordinated manner in which retrospective conversion, nay, automation process itself is being carried on. The Association and National Library should evolve a pragmatic approach towards a coordinated retrospective conversion exercise in line with the approach adopted by the Tidewater consortium. The consortium, which include Old Dominion University; College of William and Mary Eastern Virginia Medial Beach, Portsmouth and Chesapeake started with a Union Catalogue project though limited to current acquisitions in 1978 and recorded much success in creating cooperative resource databases useful for retro-conversion (Burtler, Aveney and Scholz, 1978).

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Christopher O. Ola and Edward O. Eguavoen are academic librarians in Kenneth Dike Library, University of Ibadan. They have published jointly and individually in several learned journals both locally and internationally. They jointly authored "The Use of Library: A Hand Book", which is a major guide to the use of the library for university students in Nigeria.