CATALOGUING OF ELECTRONIC INFORMATION RESOURCES IN NIGERIAN LIBRARIES

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ABSTRACT

The increasing volume of electronically published Content has made knowledge of organizing these types of resources critical for today's librarians and information professionals. This paper discusses the steps and procedures for description of coverage data of typical electronic information resources like CD-ROM, electronic journals, electronic books, online database, and web page, using the present standard of Machine- Readable Cataloguing (MARC). The choice in the use of machine readable cataloguing reflects the present attention devoted to the success of the Online Public Access Catalog (OPAC) as a finding aid to the resources of a library in automated form. Secondly. MARC contains a guide to its data hence it is suitable for transferring catalog records between systems. Among the problems the paper observed are whether to use single or multiple records for resources with more than one manifestation; secondly, the seeming absence of title pages which often makes it difficult for catalogers to look for alternate places for tifle information. Also, the existence of marked differences in metadata platforms is observed to constitute yet another problem The paper concludes that the practice of cataloguing must adapt to technology, most especially as it is the driving force behind many activities today, even organization of information. The paper also recommends that future research be undertaken to meet the challenges in cataloguing these resources in order to keep pace with changes in technology

INTRODUCTION

The use of electronic resources in libraries has grown over the years. Web based content developed by publishers is attributed to the success of the World Wide Web (www) which became public since the 1990s.Thus by the end of the 20th century, with the explosion of digital formats and the Internet, the treatment of non book formats using the model of book became less useful. Even conventionally published materials began to appear on the market in multiple formats. Coyle and Hillmann (2007) identified the much wider distribution channel of the Internet as eliminating information resource packaging and any vestige of description that the packages contributed. Theoretically, our cataloguing process begins with the Anglo-American Cataloguing Rules, second edition with the most up-to-date amendments which is the Resource Description and Access (RDA) now considered as the cataloguing Rules of the 21st century. Before the emergence of RDA in 2010, the Functional Requirement for Bibliographic Description (FRBR) was published in 1998. Its introduction was aimed at a rationalized approach to cataloguing practice in multiple-version

resource environment. These internationally acceptable rules tell us the bibliographic information we are to provide for any given type of material. Once we have used these rules to determine the information that we must provide in a bibliographical record, we must then figure out how to code that information into the format required by the Machine-Readable Cataloguing (MARC) standards.

In practice, however, we are usually faced with a blank MARC template populated with a few empty tags; we have to figure out what we should put in these tags, and what additional tags we might need. Ordinarily, MARC 21 fields starts and end with the 0xx-9xx fields, (Eden, 2002). According to Mal (2006), a field is a portion of a record set aside for a particular type of data while tags are numbers used to represent fields. Other standards in use include CORE (shortened form of Dublin Core metadata) .This is an internationally agreed-upon set of elements that can be "field in" by the creator of an electronic document in order to create a metadata record for the document. Another standard is Metadata Object Description Schema (MODS) which is a schema for bibliographic elements set that has been particularly developed for library applications, a subset of MARC expressed in Extensible Mark-up Language (XML). The scope of this work is limited to digital objects that include files, images, computer software, multimedia, etc.

Types of Electronic Information Resources

AACR2 2005 update defines electronic resources as material (data and/or program(s)) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to computerized device (e.g., (CD-ROM drive) or a connection to a computer network e.g., the Internet. Lang (2008) defined electronic resources to consist of data (information representing numbers, text, graphics, images, maps, moving images, music, sounds, etc) programmed instructions, etc, that process the data for use. Direct access (Electronic resource)' is defined in the AACR Glossary as:"The use of electronic resource via carrier (discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment." A direct access electronic resource, therefore, has a physical carrier, and is sometimes called a "tangible electronic resource"

Curran (2002) and Myer (2003), drew on the importance of adhering to standards, guidelines, and specifications in AACR 2, especially chapter 9 (Electronic Resources). These guidelines affect mainly the choice of certain fixed field elements like the type of record, bibliographical level and type of file codes as well as the use of variable fields. Similarly, AACR 2 provides more instruction for bibliographical description as it guides the information professional (usually a cataloger) on what steps to take. The manifest of electronic resources that include components with characteristics found in multiple classes of material, combined with their general volatile nature compelled the International Federation for Library Association (IFLA) Cataloguing Standing Committee, in collaboration with the Section on Information Technology to initiate moves that led to the present use of the term "electronic resource" as against "computer file". Igbeka (2008) outlined types of electronic resources to include CD-ROM, electronic journal, E-mail, e-book, online databases, and web pages.

Mal (2006) defined cataloguing as the process of identification and description of an item, the recording of this information in the form of a cataloguing record, and the selection and formatting of access points-with the exception of subject access points. The term refers to the physical make-up of the item and to the responsibility for

intellectual contents without reference to its classification by subject or to assignment of subject headings, both of which are the province of Subject Cataloguing.
Identification consists of the choice of conventional elements, formulated by a set of rules that cataloguers use to describe an item. When the cataloguer has properly identified these conventions in such a fashion that the description is unique and can be applied to no other item in the collection, they are described in the catalog

General Cataloguing Steps
Step 1 Search your own catalog to see if *you have a copy of the resource.*
Step 2 If the record is found, use the table called "Quick Match Criteria" (QMC) to decide whether or not the record matches your resource. Consider each element on the table. The tables shown below contain the required information:

Table 1: Electronic Information Resources Descriptors

Mono text ER—Electronic resources +Books
Serial text ER—Electronic resources + serials
Mono sound ER--Electronic resources + sound recordings
Serial sound ER—Electronic resources + sound recordings + serials
Mono video ER--Electronic resources + videos
Serial video ER—Electronic resources + videos

Table 2. Structure of the AACR 2 and their corresponding chapters with MARC Tags

AACR 2	MARC tags	CHAPTERS					
Bib. Areas		All	BK	ER	SR	VD	SE
Title	245	**1.1**	2.1	9.1	6.1	7.1	12.1
Edition	250	**1.2**	2.2	9.2	6.2	7.2	12.2
Pub. Distribut.	260	**1.4**	2.4	9.4	6.4	7.4	12.4
Phy. Dist	300	**1.5**	2.4	9.5	6.5	7.5	12.5
Series	4xx	**1.6**	2.6	9.6	6.6	7.6	12.6
Notes	5xx	**1.7**	2.7	9.7	6.7	7.7	12.7
ISBN	**20**			**9.8**	6.8	7.8	
ISSN	**22**			**9.8**	6.8	7.8	12.8
A S	**37**			**9.8**	6.8	7.8	12.8

(Key: BK= Book, ER=electronic resources, SR = serials, VD=video)

Step 3. If you find a record that exactly matches your resource, edit it. Do this by going through it carefully because a useful field might be missing
Step 4. If you cannot find a match on your catalog, search your source of copy cataloguing records. This might be bibliographic utilities such as Library of Congress (L.C), Online Computer Library Centre, (OCLC) or other Library databases via Z39.50
Step 5. If the only record that you can find is not an exact match, but it is close, 'clone.' This means that you copy the record and give it a control number (to make a brand new record), modify the record to match.
Step 6. If you cannot find even a near match record, make an original record.

Whether you are editing a record, cloning a different edition record or creating an original record remember to:

-add or check subject heading
-verify all the headings against the appropriate authority file
-validate coding
-add a call number or holding data.

Chief Source of Information for Electronic Information Resources

According to AACR 2 Rule 9.001, the chief source of information for electronic resources is the resource itself. It states "take the information from *formally presented evidence, (e.g. title* screen(s), main menus, program statements, initial display(s) of *information, home page(s), file* header(s)". The rule further explains that if the information is not available from the resource itself, it should be taken from the following sources (in order of preference):

- Printed or online documentation or other accompanying materials e.g publishers letter "about file."
- Publishers web page about an electronic resource.
- Information printed on a container issued by the publisher, distributor, etc.

(A) **Example of Electronic Information Resource Records.**

1Computer disk card format:

QA95	Amazing arithmetricks. [electronic resource] -- Version		
		1.0 -- Minneapolis, Minn : MECC, c1993	
			2 computer disks ; 3 1/2-5 1/4 in. + 1 manual (71p.) Title from title screen Ed. statement from disk label Copy-protected Same software on both disks Interest grade level: 5-12.
			ISBN-0792902637 1. Mathematical recreations -- Juvenile software

2. MARC 21 Content Designator Format

008 930305s1993 m
020 ## $a 0792902637 : c $59.00
037 ## $a A-336 b MEC
040 ## $a DLC c DLC d DLC
050 00 $a QA95 b Ama
082 00 $a 513.2 12
245 00 $a Amazing arithmetricks $h [electronic resource].
250 ## $a Version 1.0
256 ## $a Computer programs.
260 ## $a Minneapolis, Minn. : $b MECC, $c c1993.
300 ## $a 2 computer disks ; $c 3 1/2-5 1/4 in. + $e 1 manual (71 p.)
538 ## $a System requirements: Apple II series; 128K RAM, floppy disk drive; color monitor recommended.
500 ## $a Title from title screen.
500 ## $a Ed. statement from disk label.
500 ## $a Copy-protected.
500 ## $a Same software on both disks.
521 2# $a 5-12.
520 ## $a Using the motivating environment of carnival setting, students are challenged to solve a variety of puzzles. Intended to improve logic and mathematical problem solving skills. Includes a provision allowing students to choose a level of difficulty matched to ability.
650 #0 $a Mathematical recreations $v Juvenile software.
650 #0 $a Problem solving $v Juvenile software.
650 #1 $a Mathematical recreations $v Software.
650 #1 $a Problem solving $v Software.
710 20 $a Minnesota Educational Computing Corporation.\

(B). **Examples of MARC Records for a Serial Document**

Example no 2: MARC record for a serial document from a database

007 cf n
008 8 61031c19569999
022 0 - \a 0030-364
040 - - \a DLC \d NSDP \d OCLoC \d NST \d MH \d AIP \d Inu d\ MCM \d NLGGC \d NNC \d CU-S \d NG-ZaABU
042 - - \a pcc
050 0 0 \a HD28 \b Ope
222 - - \a Operations research
245 - - \a Operations research \h [Electronic resource]
260 - - \a Linticum, MD \b Institute for operations Research and the Management Sciences \c 2006

300 - - \a v \b ill
362 - - \a v 4- Feb.1956
500 - - \a Published in Baltimore by Operations Research of America, 1956
530 - - \a Also available on microfilm and via the World Wide Webs
550 - - \a Journal of the operations Research Society of America
555 - - \a *Vols* 1-15 1952-67 1v *includes* index to journal under its earlier title
610 - - \a Operations Research Society of America \v Periodicals
650 - - \a Operations Research \v periodicals
710 - - \a Operations Research Society of America
710 - - \a Institute for operations Research *and the Management Sciences*
859 - - \u http://www.jstor.org/journals/0030364x.html

(C) Example of MARC record for CD-ROM

007__cf
040 __ DLC $c YJL
050 00 AE5
090 __ AE5 $b .C66 1999
245 00 Computer desktop encyclopedia $h [electronic resource].
250 __ 2nd. ed.
260 __ Point Pleasant, PA : $b Computer Language Co., $c c1999.
300 __ 1 CD-ROM ; $c 4 ¾ *in.*
538 __ System requirements: IBM-compatible PC; Microsoft Windows 3.1 or higher, CD-ROM drive, VGA color monitor.
500 __ Title from disc label.
520 __ A source of computer terms, concepts, important products, and interesting items. Provides more than 10,000 definitions, illustrations, photos, diagrams and charts from micro to mainframe.
650 _0 *Electronic encyclopedias.*
710 2_ Computer Language Company.

(D) Example of Webpage Catalog Record

245 10 \a CNN.com \h [electronic resource].
246 1-\a Cable Network News
247-- \a CNN interactive\f Oct.1998-2007
250-- Version 1.0 for Windows.
260-- \a Atlanta, Ga. : \b Cable Network news
310-- \a *continuously updated*
362 – \a Began in 1990s
538 --\a Mode of access :world wide web
500 – \a Title from screen (viewed on July 17 2003).
520 --\a Main website of the cable network news includes world news, US news, weather, health, entertainment, travel, *and education* .
710 2-\a Cable News Network.
856 4-\a http://www.cnn.com

(It may be observed from the above examples the use of different symbols representing delimiters, (\, ±, s,) The choice of a delimiter largely depends on what characters are preferred to be used by developers of individual Integrated library systems)

Search Strategies for Access to Electronic Information Resources

Briscoe, Selden and Nyberg (2003) point out the justifications for providing journal title access through the catalog. This view is also strongly supported by Cole (2003) *and Gatti and Miller (2004) who stressed* on the important role this would play for users. Thus any library that intends to create access to journal titles through its OPAC will make use of the federated search engine. According to Dahl, Banerjee and Spalti (2006), federated search engines create a single search interface to multiple online databases, including OPACs, Union catalogs, research databases, and search engines but due to the presence of many players there seems to be no consensus whether records for remotely– accessible electronic resources should be held in the *library's online public access catalogue.* The Integrated Library System, Virtua, used by Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Bayero University, Kano, Obafemi Awolowo University, Ile-Ife, *University of Jos, University of Ibadan* and University of Port Harcourt, has Chameleon iPortal which allows for the

use of modular extensions known as Drop-In Pull-Out (DIPO) components. DIPO components greatly extend the basic functionality of the Web OPAC, providing access to subscription and external databases, search engines, and multimedia services.

However, libraries have other options. These include access through web list of journal titles. Web list access implies compilation of content list on a library home page. Petrick (2004), suggests creation of a separate database made available from the Libraries home page.

Irrespective of standards, the prospects of achieving consensus appears good in the case of coverage data. Dahl, Banerjee and Spalti (2006) agreed with the simple coverage data as shown in the previous examples.

Challenges of Cataloguing Electronic Resources

1. One of the key issues in the cataloguing of electronic resources is deciding whether to use single or multiple records. Though AACR directs that separate records should be created for each manifestation rather than adding the details for all manifestations in a single record; in practice however, this standard is interpreted in various ways by the major organizations that issue data based on AACR standard. Choosing one approach over another has implications for libraries both in their presentation of information to their users and their work practices. OCLC for example, chooses one record to be the master record for each journal while FRBR in their aggregator-neutral records endorses "one record" principle for multiple versions of a journal. Haddad (2008) asserts that the National Library of Australia (NLA) creates separate records if it decides at any point in time to take responsibility for managing preservation and long term access of resources in two formats, otherwise it creates single records while adding a link from the single record to the other format

The example below indicates a single nature of a record with two formats from the OPAC of Kashim Ibrahim Library, Ahmadu Bello University, Zaria.

008 - - \a 110627
020 - - \a 978140344843
040 - - \a NG-ZaABU
050 - - \a BP 605.S2 \b Hub
100 - - \aHubbard, Ron
245 1 -\a Dianetics : \b the modern science of mental health / \c by Ron Hubbard \h[text]
260 - - \a Los Angeles:\ Bridge Publications \c 2007
300 - -\a xi, 679p.;\bill.
500 - - \a CD in pocket
530 - - \a Available online \u www.dianetics .org
650 1 0\a Scientology-doctrines
852 - - \a NG-ZaABU \b KIL \a Circulation
856 4 2 \a www.dianetics.org

2. Another problem of cataloguing electronic resources is that affecting titles. The lack of title pages makes it hard to establish the titles. The cataloger has no choice but to look through several sources to establish title.

3. The existence of various formats of MARC create incompatibilities which are yet to be resolved.

4 Differences in the use of Integrated Library Systems (ILS) create problems in the use of communication formats. A peculiar reference, for instance, can be made to the differences in the type of metadata standards in use by different institutions. Ahmadu Bello University Zaria, Bayero University, Kano, University of Jos, University of Ibadan, Obafemi Awolowo University, Ile-Ife and University of Port-Harcourt, for instance, make use of proprietary software, Virtua, whose

platform is MARC 21. Bowen University, Iwo, in contrast makes use of an Open source software, Koha, whose platform is Dublin core. Exchanging records between the six universities and Bowen University will not be simple because of differences in standards they use. American University, Yola and University of Lagos make use of Innovative millennium whose platform is MARC 21. Despite the differences in the choice of ILS between these two institutions and the six earlier mentioned, it will still be easier to exchange records because they all make use of MARC 21. The density and broadness of MARC 21 is incomparable with the simplified nature of Dublin core if a resource description model goes for precision. A "Crosswalk" may convert MARC records to other formats and vice versa but details may be lost. A crosswalk is a metadata translator.

CONCLUSION

The practice of cataloguing must adapt to technology, most especially as it is the driving force behind many activities today— even organization of information. Currently, both the process of cataloguing and the product itself have benefited from advances in computer technology. Many scholars are however worried if cataloguing rules, no matter how fast their attempt can keep pace with the ever increasing changes in technology, especially the Internet. This should constitute major concerns for future research because non-print media are increasingly adopted for conveying knowledge and information, thereby necessitating mainstreaming of their bibliographic control. In the light of the above, it is important that catalogers master the procedures for data entries into their catalogs in order to enrich them in the online environment, while ensuring how to be guided by relevant rules.

RECOMMENDATION

i. Libraries should provide their customers with records that are easy to locate, use and are current. There should be constant update of online catalog through adding or removing titles through identifying of errors and changes, and maintaining constant access.
ii. Enough number of staff should be assigned to handle the task of cataloguing electronic information resources in libraries.
iii. Best practice concepts should be focused on the standardization of data and holding through use of processes and tools compatible with the integrated library system in use.

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