Do we still need bibliographic standards in computer systems?

Helena Coetzee

1 Introduction

The large number of people who registered for this workshop, is an indication of the interest that exists among cataloguers in the importance of bibliographic standards,. Those of you who work on computerized library systems get a lot of prompting from the system, but usually mainly in the coded fields, by way of drop down menus., as well as work forms with tags and indicators, based on the MARC 21 framework and the validation function available on the system. As far as the data content is concerned however, it remains the responsibility of the cataloguer to consult the appropriate standards namely AACR2 for description and bibliographic access points for authors and titles, DDC for classification numbers and LCSH for subject headings. Many things we do so often, that we can enter that data from memory but in some instances we do have to consult our rule books.

2 What is a standard?

A standard is something that, through authority, use or universal agreement, serves as example or model that can be followed and against which quantity, weight, extent or quality can be measured or evaluated. Standards usually go through a number of stages before they are finally accepted and becomes official. If formally ratified by an officially recognized body, it becomes a de jure standard, but if it is only widely implemented in practice, it is a de facto standard.

Standards provide a unified structure, a statement of minimum expectations and guidelines to determine when absolute uniformity in execution is essential and when it is not. A standard is ignored when it is perceived as either unnecessary, or as too difficult or costly to implement.

3 What are bibliographic standards?

Bibliographic standards are standards aimed at consistency and uniformity of practice in the creation of bibliographic records. Standards which are applied to achieve bibliographic control are based on the principles of adequate identification, search ability and consistency so that:

- no two different documents can be confused with each other
- the description of a given document can be accessed by any data element or access point, judged by the cataloguer to be relevant to users
- the many details comprising a description, are presented in a uniform manner so that they can be interpreted without unnecessary ambiguity.

There is often different ways in which something can be done, depending on the purpose, the processes, costs or historical antecedents. Interpretation of data and standards differ and because cataloguers often have to use their own judgment, variation in the resulting bibliographic records are understandable. Bibliographic standards also do not have the compelling force of, for example, an electrical standard, and are often applied haphazardly.

To be adopted, particularly at the international level, a standard must be as flexible as its purpose permit. The purpose of most bibliographic standards is not absolute uniformity, but rather compatibility ensuring mutual understanding.

4 The changing cataloguing environment and the development of standards

Probably the most important factor bringing about changes in the cataloguing environment was the increasing use of computers in libraries. Many libraries developed their own computerized systems, custom made for their own purposes, which worked well, but when libraries researched the possibility of exchanging bibliographic records and other forms of cooperation, it became clear that standardization was essential to achieve this successfully. Computers need standards for electronic storage and transmission, and for formats within which the data is recorded and to some extent for the data content itself. The computer has become the primary communication device, also on the information scene. The development of MARC formats by the Library of Congress and the British Library in the late sixties opened the possibility of increased cooperation among libraries. In the early seventies there was a proliferation of MARC formats, differing considerably. The ideal of international cooperation was therefore limited, because conversion programs were needed to transfer data from one format to another. In the early eighties IFLA developed UNIMARC as a universal standard on which new formats could be based, to achieve optimal compatibility. USMARC was however too well established by this time and networks with huge databases created in the United States, were all based on USMARC. Although

member libraries of networks all use the same standards, many variations in interpretation and application still occur causing many duplicate records to be created, affecting optimal retrieval. UNIMARC is used extensively in Europe, but the availability of millions of records in USMARC makes it more profitable for libraries to use USMARC, or MARC21, as the harmonized USMARC and CANMARC became known. Apparently the United Kingdom will also join the harmonization effort soon.

After World War II, the publication output increased enormously and libraries could no longer acquire and process everything in a timely fashion. The Library of Congress launched its Shared Cataloging Program, to spread the load of cataloguing in stead of attempting to catalogue everything themselves as before. Records created by other libraries working to good standards, could be accepted as they stood. This idea was also accepted by IFLA for its programme for Universal Bibliographic Control (UBC). If all countries compiled national bibliographies it would be possible to locate all information, no matter where it was produced or in what language, with obvious advantages, especially for research.

An increased awareness of the importance of standards and the quite amazing degree of agreement reached in 1961 at the International Conference on Cataloguing Principles, where a set of principles were agreed upon, also paved the way for international cooperation and the development of new standards to make this possible. Before this, each library worked according to its own standards, but in the bigger picture of international cooperation, this was no longer feasible.

A number of new initiatives followed after this conference. It led to the 1967 edition of AACR, dealing mainly with access points. In 1969 the International Meeting of Cataloguing Experts met to formulate an international framework for the description of books. A number of national bibliographies were compared to establish differences and similarities between countries. It was realised that the similarities were much more than the differences. It took only three years to complete the ISBD (M), and others for other kinds of material soon followed. In order to prevent divergence between the ISBD's, a general framework, the ISBD (G) was published in 1977. The underlying principle of the ISBD's was that the national agency of each country would create an authoritative description for

works published in it own country, which would then be available to other countries for copying and adding their own access points. The prescribed punctuation would ensure that areas in the description and elements in the areas would be recognizable even in other languages.

The 1967 AACR was not widely adopted and had quite a number of weaknesses In 1974 a thorough revision of this code was undertake and as the ISBD's were being developed. It was decided to incorporate it in the revised AACR. AACR2 was published in 1978, and cannot be described as even a close relative of its predecessor. It is continually revised to make provision for new developments. Cataloguing ha always been the codification of existing practices, rather than deliberate formulation of concepts.

T he number of physical formats in which information became available, also posed new problems for libraries. At first these new formats were not integrated in the catalogue, but it became clear, that, if access were to be provided to all available information, no matter in which physical format it was, standards would have to be adapted to make provision for the unique nature of the new formats. Rules that did exist, did not treat the so called non-book material in the same way as books, making it impossible to integrate all records in one catalogue.

The concept of resource sharing also evolved. Libraries could no longer acquire and process all the information their users might need. Cooperation was essential, where libraries could only collect material on their main focus areas, and borrow the rest from other libraries through inter library loans. Resource sharing however require the availability of union or joint catalogues, which in turn could not exist without an agreement on the standards applied in their construction.

There was also an increasing need to reduce cataloguing costs, by minimizing duplication of cataloguing effort. The process of cataloguing is expensive, utilizing professionally qualified staff. This led to attempts to simplify the cataloguing process and the increased exchange of bibliographic data between libraries. This was however only possible if records created by different libraries was compatible, which can only be achieved through consistent application of

agreed upon standards. Copy cataloguing is only feasible if good copy is available, needing no editing before it can be used by another library.

The need to respond more effectively to an increasingly broad range of user expectations and needs also became clear. In the study: "Functional requirements for bibliographic records", undertaken by the IFLA Study Group on the Functional Requirements of Bibliographic Records, analyzed the uses that are made of bibliographic data with special reference to the entity that is the object of the user's interest, and to the attributes and relationships that are relevant to the task being performed by the user. They found that users need:

- to find entities
- to identify entities
- to select an appropriate entity
- to obtain access to this entity.

In order to achieve this, data in bibliographic records were evaluated to see if they assist users in finding what they need. The FRBR also distinguished between entities, works, expressions and manifestations, their attributes and relationships. The aims of this study was to provide a clearly defined, structured framework for relating the data recorded in bibliographic records to the needs of the users using those records, and to recommend a basic level of functionality for records created by national bibliographic agencies.

5 Types of bibliographic standards

Within the context of bibliographic control, the following types of standards can be distinguished:

Technical standards

Specifications or technical standards should be followed closely in order to ensure compatibility. Examples are:

- Standards for the exchange of machine-readable bibliographic records (ISO 2709 : 1996).
- Codes for the presentation of the names of countries (ISO 3166:1993)
- standards on specifications for the title leaves of books, presentation of title information of series, etc. It would also help cataloguers if publishers followed these standards.

Item identifiers

These standards help to identify items by using unique numbers. Examples are:

- International Standard Book Number (ISBN)
- International Standard Serial Number (ISSN)
- International Standard Audiovisual number (ISAN)

Format standards
These standards make it possible for computers to process and manipulate bibliographic data and are essential for the exchange of records and other data. Examples are:

- MARC21
- UNIMARC

Data content standards
These standards aim at ensuring consistency of practice in the creation of bibliographic records. Their application requires understanding and good judgement. Unfortunately the existence of these standards does not guarantee identical results. Examples are:

- International Standard bibliographic Descriptions (ISBD's) which deals only with the descriptive part of bibliographic data and prescribes punctuation.
- Anglo-American cataloguing rules, 2nd ed. 1988 revision (AACR2R) which is continually updated and of which the first part consists of the ISBD's for all kinds of library material.
- Library of Congress Subject Headings which is also continuously updated to include new concepts and terms
- Dewey Decimal Classification of which the 22 nd edition is the latest. It is also kept up to date as far as possible.

Internet cataloguing standards
These standards aim at creating order on the Internet. An example is:

- Dublin Core,

Protocols
These standards are also technical and make it possible to do searches in different databases. Examples are:

- Information Retrieval Protocol (Z39.50) (ISO 23950)
- Inter Library Loan Protocol (ILL)

6 Who makes the standards?

International bodies and programmes

- **International Organization for Standardization (ISO)** is the ultimate international standard-approving body. Both the original initiative for a new standard and the ultimate responsibility for promulgation of these standards and persuading people to implement it rest with ISO's component national bodies, such as the National Information Standards Organization (NISO) and the American National Standards Institute (ANSI). The actual work is done by technical committees, such as ISO Technical Committee 46 (Information and documentation).

- **International Federation of Library Associations and Institutions (IFLA)** was responsible for the development of the ISBD's, UBC and FRBR
- **United Nations Educational, Scientific and Cultural Organization (UNESCO)** has supported three major programmes in bibliographic control: the General Information programme (PGI), the Universal Bibliographic Control and International MARC Programme (UBC) and the Universal Availability of Publications Programme (UAP). It also operates the United Nations Information System in Science (UNISIST). UNESCO also initiated the development of the Common Communication Format (CCF).
- **Fédération International de Documentation (FID)** is responsible for the development and maintenance of UDC.

Professional associations

The American Library Association, the British Library and the Canadian Library Association are jointly responsible for revising AACR2.

Role of the Library of Congress

The Library of Congress became the acknowledged leader in standardization throughout the twentieth century, at first by its distribution of printed cards. It also developed the first MARC format in the late sixties, and has since been responsible for its maintenance as well as the harmonization of MARC formats. It is also responsible for the NACO and SACO projects to improve authority control of names and subjects.

The Library of Congress Rule interpretations of AACR2 are also widely used by libraries. The Library of Congress List of Subject headings is also maintained by the Library of Congress and it has also taken responsibility for the Dewy Decimal Classification.

Bibliographic networks

OCLC also plays a significant role in the promotion of standards through its WorldCat and authority files, providing cataloguing copy of good quality.

7 Why are standards important?

The most important advantage must be saving of time and money, reducing the cost of bibliographic work by using each other's records interchangeably or acquiring records produced centrally. This requires that libraries use a common set of standards and follow a common set of procedures to develop consistent structure in their catalogues. Standard records can be used without change or adjustment. Cooperative uses of bibliographic records demand standardization and make the multiple use of the same bibliographic record by different

institutions and for different purposes in the same library possible. It also increases the quality of cataloguing, because standardization is a prerequisite of quality control.

Standards promote universal bibliographic control and this in its turn, makes resource sharing possible, because of the possibility of compiling joint or union catalogues, enhances both the availability of cataloguing copy and efficient use of interlibrary loans.

The bibliographic structure leading a user to information must be sound. The user can then expect that the transition of one file or database to another will be transparent, meaning that all can be searched in essentially the same way. Bibliographic standards give searchers a sense of familiarity.

Standards make better provision of service possible because most other bibliographic resources such as bibliographies are also compiled according to the same standards. It also leads to optimum retrieval from any catalogue

8 Why are bibliographic standards not applied consistently?

Adhering to standards are expensive, because quality control and authority control must be done by trained professional staff.

Differences between library systems and the needs of their users, sometimes makes it difficult to follow standards fully. Incompatibility requires conversion programs. In the application of standards too many local adjustments are often made, because libraries do not want to surrender their autonomy.

Lack of trained staff, and lowering of standards in the education and training of cataloguers, also has a detrimental effect on the quality of records.

Cataloguing has also become much more complicated than in the good old days.. Not only must cataloguers know their codes, they must also know the rules of their own system as well as the rules of the network to which the library belongs.

Weaknesses in the standards themselves can also lead to unwillingness to apply standards rigorously. There is a lack of co-ordination in standards, because too many bodies involved are and the development and revision of standards sometimes too slow.

Cataloguers also find that too many options and alternatives in rules hamper their consistent application. Because library standards are not enforceable, cataloguers have to be committed to apply them. Bibliographic standards are

also regarded by some as over complex and even irrelevant in computerized systems.

9 Conclusion

This was only a brief discussion of bibliographic standards. We all believe bibliographic standards are important and should be applied correctly and consistently, to ensure records of good quality and maximum retrieval from catalogues.

10 Bibliography

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