

Resource Description and Access (RDA): enhancing information discovery through effective description

Catherine Thuku
Library of Congress, Nairobi
Email: cthu@loc.gov

Abstract

Rationale of Study – Resource Description and Access (RDA) is the new cataloguing content standard providing instructions and guidelines for creating effective bibliographic data for information resources in all formats of content and media. It replaces the Anglo-American Cataloguing Rules, 2nd edition (AACR-2). This paper seeks to draw the attention of librarians to RDA as a means of promoting its application.

Methodology – This study was conducted as a literature review analysing the origins and rationale of RDA, its structure, benefits, relationship with AACR-2, and how to implement it in libraries in developing countries such as Kenya.

Findings – RDA is founded on established cataloguing principles, standards and models. It is schema-neutral and can work with the existing cataloguing formats such as Machine-Readable Cataloguing (MARC), formats for interchange of data over the Internet such as Extensible Markup Language (XML) and other structures that may be developed in the future. It is user-focused utilising terminology that is widely used and describes resources in a way that promotes specific user tasks - find, identify, select and obtain information resources as a way of enhancing their use.

Implications – This paper can be used by librarians to understand the benefits of RDA as a cataloguing platform and adopt the same to enhance the findability of information resources through effective description and access.

Originality – Although this paper relies on existing scientific literature, it provides new perspectives for the Kenyan context. To that extent, it is original.

Keywords

Resource Description and Access, descriptive cataloguing, metadata, Functional Requirement of Bibliographic Records, cataloguing

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1 Introduction

Resource Description and Access (RDA) is the new cataloguing standard that replaces the Anglo-American Cataloguing Rules (AACR). As observed by Keenan (2014), RDA is not just an outline of rules for describing library resources, but is a fundamental rethinking of descriptive cataloguing rules and practice. It is based on internationally established principles, models and standards and is designed for the digital environment, reflecting both the technology of the time and the types of materials that modern information professionals organise, describe, and make available to current library users.

Initially RDA was intended to be the third edition of AACR (AACR3) which was to take into account the latest ideas of the purpose and function of catalogue data in the digital environment. However, in April 2005, the Joint Steering Committee (JSC) for the revision of AACR and its parent organisation, the Committee of Principles (CoP) determined from comments received on the revision of Part 1 of AACR3 that there was need to change the original approach. A number of alternatives were reviewed and it was concluded that a new standard was the way to go. According to Brown-Syed (2011), the new standard, named RDA, was to provide:

- A flexible framework for describing all digital and analogue resources;

- Data that is readily adaptable to new and emerging database structures;
- Data that is compatible with existing records in online library catalogues; and
- A set of guidelines and instructions on formulating data to support resource discovery irrespective of type of content and media.

Change in technology was another major influence that led to the development of RDA. Over the past two centuries, catalogues have moved from book catalogues to card catalogues to Online Public Access Catalogues (OPACs) and a time has come for the next generation of library systems that support exchange, reuse and display of the rich metadata that librarians and information professionals provide in addition to the need to have library catalogues integrated into the wider Internet environment (Merčun *et al.*, 2013). As noted by Barbara Tillett, a renowned cataloguer at the Library of Congress, RDA enables cataloguers to make new kinds of links and generate new displays for users from the data that can be packaged in new ways, all of it on a global scale (Library of Congress, 2012). Technology has not only brought about changes in information resources, but changes in users, user activities and even library collection. Therefore, RDA is designed to adopt the technological capabilities of the Internet today and into the future.

2 Functional Requirements for Bibliographic Records (FRBR) as the Foundation of RDA

Functional Requirements for Bibliographic Records (FRBR), sometimes pronounced as Ferber, provides the conceptual foundation for RDA. As observed by Croissant (2012) an understanding of the FRBR model is essential to the understanding and application of RDA. From FRBR model, RDA gets the structure, terminology, the entities, the identifying attributes or characteristics for each entity, the relationships and the user tasks: find, identify, select and obtain.

The FRBR model was developed and published in 1998 by the International Federation of Library Associations and Institutions (IFLA) (IFLA, 1998). FRBR is a conceptual model that represents the bibliographic universe that those offering description try to organise and control through the use of various description codes and standards. The model's main objective is to help users to navigate catalogues and find what they want in the form they want it.

The FRBR model uses an entity-relationship framework to model the bibliographic universe. The main components of this framework are: entities (things in the bibliographic universe), attributes or characteristics of the entities, and relationships between the entities.

Entities are the objects that hold data of interest to the user of bibliographic data and

they include: the resources or the products of intellectual or artistic creation, the creators of and affiliates to these resources (the persons or corporate bodies responsible for those products), and the subject matter covered by the resources (Ehlert, 2010). They are broadly categorised into three groups.

Group 1 entities: These are products of intellectual or artistic endeavour. Group 1 classifies information resources into four elements: work, expression, manifestation and item (often referred to as WEMI).

1. **Work** – This is at the top of the hierarchy. It is an abstract entity and refers to the ideas in a creator's mind. It is recognised through individual realisation or expression.
2. **Expression** – This is how the ideas are communicated. It is the intellectual or artistic form that a work takes each time it is realised. Expression takes the form of alpha-numeric notation, music notation, choreographic notation, sound, image, object, movement, or any combination of such forms.
3. **Manifestation** – This is the third element in the hierarchy. It is concrete and represents all the physical objects that bear the same characteristics in respect to both intellectual content and physical form. It encompasses a wide

range of materials such as manuscripts, books, maps, posters, periodicals, sound records, CD-ROM, multimedia kits.

4. **Item** – This is the fourth element in Group 1 entities. It is also a concrete entity and denotes a single physical object such as a copy of a one-volume monograph or a single audio cassette. Sometimes an item can comprise more than one physical object such as a monograph issued in two separately bound volumes or a recording issued on three separate compact disks.

Group 2 entities: This group includes those responsible for the intellectual content, the physical production and dissemination, or custodianship of the entities in the first group. These entities include persons such as authors, publishers, distributors, and producers, among others as well as the corporate bodies.

Group 3 entities: Group 3 entities include concepts, object, event, place and all group one and two entities. Concepts are the topics, subject headings or classification numbers that are used to describe what a work is about. Objects are material things such as pieces of sculpture, buildings, and ships, among others. Events are happenings like war, battles, conferences or exhibitions. A place refers to a location like Nairobi, Kenya.

The group two and three entities are fairly self-explanatory. The group one entities present a challenge because they do not exist as separate tangible objects.

3 FRBR model attributes

Each FRBR entity has unique characteristics referred to as attributes that define its uniqueness and other features that it shares with other works. Some of the work attributes include title of the work, form of work, date of the work, and the intended audience; expression attributes are form, date, language, medium of performance, and extent of the expression; manifestation attributes are title, statement of responsibility, edition, place of publication, date of publication, and series statement; and item attributes include item identifier, marks/inscriptions, condition of the item, and access restrictions, just to mention a few.

The attributes of an entity help the user of a catalogue or bibliographic database to find, identify, select and obtain a needed information resource. Attributes can either be inherent – those that are discovered by examining the resource itself such as extent, title on title page of a printed book – or externally-imputed attributes that come from outside of the resource such as assigned identifiers such as International Standard Book Number (ISBN) or accession number.

4 FRBR user tasks

The FRBR model is an entity-relationship model with the user and his/her needs as the starting point of information seeking. The model maps out the relationships between data recorded in bibliographic records and the needs of those who use the data (Oliver 2010). It defines the user needs in terms of user tasks generally referred to as FRBR tasks. They include find, identify, select, obtain and navigate.

1. **Find** – This is to find an entity/resource that meets a certain search criteria. Find gives the user the ability to locate either a single entity or a set of entities in a file or database as the result of a search using an attribute or relationship of the entity;
2. **Identify** – This is to identify an entity, that is, to confirm that the entity described corresponds to the entity sought, or to distinguish between two or more entities with similar characteristics;
3. **Select** – It is to select an entity that is appropriate to the user's needs, that is, to choose an entity that meets the user's requirements with respect to content, and physical format, among others, or to reject an entity as being inappropriate to the user's needs;
4. **Obtain** – This is to acquire or obtain access to the entity described, that is,

to acquire an entity through purchase, loan or to access an entity electronically through an online connection to a remote computer; and

5. **Navigate** – This is being able to make one's way through a catalogue, a search engine or a website to find what one wants.

5 FRBR entity relationships

Relationships form an important component of the FRBR model. Relationships assist the user to complete the FRBR user tasks: to find, identify, select and obtain. As noted by Oliver (2010), there are several relationships that can exist between entities. For example, some of the relationships that exist within group 1 elements include:

1. **Equivalence relationships:** These are relationships that exist between the original item and its reproductions such as reprints, photocopies or microfilms;
2. **Derivative relationships:** These include editions, translations, summaries or digests;
3. **Descriptive relationships:** These include criticism, evaluation or reviews.

Relationships also exist between the various groups of entities. For example there are specific relationships between group 1 (work, expression, manifestation and item) and group 2 (persons and corporate body) which reflect

the role of the person or corporate body with respect to work, expression, manifestation or item. Group 3 entities are the subjects and it is possible to have works about another work or works about a person or about a corporate body. Relationships are important in that they enable collocation and provide pathways to improve resource discovery.

It is clear from above that the FRBR model presents a major shift in the way information resources have been conceived and organised. As noted by Tillet (2003), FRBR describes the bibliographic universe as it is today using more precise language and vocabulary and placing more emphasis on relationships between entities that has helped explore new ways to fulfil the objectives of a catalogue. The model was developed to improve on current bibliographic descriptions and consequently library information systems (Merčun, 2013).

6 International Cataloguing Principles (ICP) and RDA

The IFLA Statement of International Cataloguing Principles issued in 2009 informs the cataloguing principles used throughout RDA. The principles place the user first and assert that the users should always be kept in mind when providing bibliographic descriptions and access points. The principles include:

1. **Convenience of the user:** According to this principle all efforts should be made

to keep description easy and comprehensible for the user. A user is anyone who searches and uses the bibliographic data. Users range from information service patrons to information professionals who create and share the data.

2. **Representation:** It is important that the description represents the resource as it appears. Titles used should be in the form appearing on the first manifestation of the original expression and form of name based on the way the entity describes itself.
3. **Common usage:** Vocabulary and terminology used in description should make sense to a broader audience.
4. **Accuracy:** Always ensure that the description is an accurate portrayal of the entity being described.
5. **Sufficiency and necessity:** The description should include only those data elements that are needed to fulfil the user tasks and are essential in the identification of an entity.
6. **Significance:** Data elements used in the description should be relevant and should allow for distinctions among entities.
7. **Economy:** Where alternative ways exist, preference should be given to the most

practical approach in terms of cost and simplicity.

8. **Consistency and standardisation:** Descriptions should be standardised as far as possible to enable consistency.
9. **Integration:** The description for all types of resources should follow a common set of rules to the extent possible.
10. **Interoperability:** All efforts should be made to ensure the sharing and reuse of bibliographic data within and outside library community.

There is a deliberate attempt to incorporate these basic principles in the design of RDA (Tillet, 2008). The principle of convenience is achieved by use of terminology that makes sense to a broader audience or “common usage”; allowing the agency preparing the description to make choices regarding language of supplied data, calendar or numeric system. RDA adopts a “take what you see and accept what you get” principle when transcribing certain elements in the description. This is consistent with the ICP principle of representation to represent the resource the way it represents itself. Effort is also made to ensure an accurate portrayal of the entity described to facilitate identification and communication of bibliographic information. Descriptions created using RDA should include minimum elements (core elements) necessary

to uniquely identify a resource achieving the “sufficiency and necessity” principle. Information provided in description should be bibliographically significant to the needs of the user and follow common set rules for consistency purposes.

7 Differences between RDA and AACR

Although RDA is built on foundations established by AACR, it is quite different. It incorporates most of the existing rules but provides more and better in-depth description to help users find and identify information resources. RDA is an attempt to build a catalogue code on the FRBR model making its structure different from AACR2. On the other hand, AACR2 is based on the International Standard for Bibliographic description (ISBD) and is divided into two parts. Part 1 of AACR2 deals with bibliographic description and is structured around the ISBD areas of description which include title and statement of responsibility area consisting of title proper, parallel title, other title information, statement of responsibility and edition area; material or type of resource specific area comprising numbering in periodicals or mathematical data in case of cartographic materials; publication, production, and distribution area; material or physical description area which encompasses number of pages in a book or number of CDs issued as a unit; series area; notes area; and

resource identifier and terms of availability area such as ISSN or ISBN.

ACCR is further organised by chapters some of which cover the different categories of materials such as books, maps, music and sound recording, among others. Part 2 deals with access points which include headings, uniform titles, and references. RDA's structure, on the other hand, is based on FRBR which is an entity relationship model that identifies all entities first, then specifies which attributes of the entities ought to be recorded and finally defines the possible relationship between identified entities.

Unlike ACCR2 which is both a content and display standard, RDA is just a content standard. RDA does not give any provision as to how data should be displayed. The assumption is that any decision about how data should be displayed would be made by the individual cataloguing agency or the library software vendor. RDA also treats each element of data in a record as a separate entity in its own right, and tries to make no statement as to the order or sequence in which these elements should be presented in a print or screen display.

The AACR2 concept of "chief source" has been replaced by the RDA concept of "preferred sources." This is not only a change of term but also reflects RDA's expansion from a single source to multiple sources for information. In

RDA, information can be anywhere on the resource, and the cataloguer only uses the square brackets for information recorded from outside the resource.

Transcription of data in RDA emphasises taking or accepting what is given on the resource being described. This is consistent with the ICP principle of "representation" that requires a description to represent the resource the way it represents itself. This is a fairly significant change from ACCR2 which includes extensive rules for abbreviations, capitalisation, punctuations, numerals or symbols and sometimes directs the cataloguer to "correct" data known to be wrong such as typos. In RDA one does not generally alter what is on the resource when transcribing information for certain elements. This is not only for the principle of representation but also for a more practical reason: to encourage re-use of found data one can copy paste or scan or download into one's description of the resource.

AACR2 instructs the cataloguer that when three or more persons or corporate bodies are listed to "omit all but the first of each group" followed by ... [et al.]. It further states that "If a single statement of responsibility names more than three persons or corporate bodies performing the same function, or with the same degree of responsibility, omit all but the first of each group of such persons or bodies. Indicate the

omission by the mark of omission (...) and add et al. (or its equivalent in a non-Roman script) in square brackets.” This is the so called “Rule of three”. This is also a product of the card catalogue where limits were introduced to save space. With the advent of the online environment that rule is no longer necessary. In RDA, again relying on the “take what you see approach”, all of the authors will be listed as they appear on the resource.

Another departure in RDA is the move away from the AACR2 General Material Designation (GMD). Instead RDA uses the three new data elements media type, carrier type and content type. These appear in their own separate descriptive fields rather than embedding the GMD in the title field as had been the practice in AACR2. All three fields are repeatable, which allows the cataloguer to record more than one media type, type of content, or type of carrier. This helps to clarify the data, keeping type information out of the title area, and making it easier for other software applications to make better use of the library data.

Compared to ACCR, there is a greater emphasis on relationships in RDA. In RDA relationships are described in a structured way making it easy for computers to search, compile and give feedback to the users. This is a major improvement to catalogues that have always expressed relationships using textual note fields

that are difficult for a computer to process (Keenan, 2014). Relationships are important in that they enable collocation of related items and facilitate navigation of sometimes complex networks on the bibliographic universe (Tillet, 2004).

8 Reasons for adopting RDA

RDA is a content standard intended for the digital environment. As noted by Bertuca (2012) RDA’s interface with the Internet allows library catalogues to be more accessible to users of the catalogues. In addition to improving access to non-print resources, RDA does not limit the number of access points that can be included in a bibliographic record. The records created using RDA can also be integrated with those created using other metadata standards thus allowing institutions beside libraries to make use of them. This has led to library collections that are more active and visible especially on the Internet where users readily access them while performing Internet searches.

RDA’s purpose is to support the production of well-informed data that can be managed using both current technologies and newly emerging database structures and technologies of the future. RDA unambiguously defines the elements required for description and ensures each element contains one particular data. This allows RDA to be compatible with a range of encoding schemas such as Metadata Object

Description Schema (MODS), Dublin Core and Machine-Readable Cataloging (MARC).

Another important feature of RDA is its flexible and extensible framework that allows for the description of all types of resources including the traditional library resources in all formats and even those that may develop in future. RDA simplifies harvesting of descriptive metadata from many sources including those from other metadata communities such as archives, museums and publishers than is currently possible in AACR2. RDA is the tool that will help libraries and other information services to move into the future.

The focus of RDA is the user and how to make information resource more accessible. Data elements used in RDA description are based on FRBR tasks: find, identify, select and obtain. Further, the emphasis on relationships helps provide additional navigational paths for the user. RDA brings together different versions and editions of the same work helping users to see the difference between similar resources.

Lastly, RDA provides rules that are more international. Apart from being less Anglo-centric, it allows the choices regarding the language of additions to access points, language of supplied data, calendar and numeric system.

9 Conclusion

RDA builds on the foundations of AACR2 but adopts new and different aspects that gear it to function effectively within the digital environment. It is based on the FRBR model that helps define its shape, structure and content and the international cataloguing principles. It is independent of any communication format thus making it flexible to be used with other encoding standards both within and outside library community.

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