Chapter 5
Knowledge Organisation in Academic Libraries: The Linked Data Approach

Madireng Monyela
University of Limpopo, South Africa

ABSTRACT

Linked Data (LD) emerged as an innovation in libraries over a decade ago. It refers to a set of best practices for publishing and linking structured data using existing Semantic Web technologies. Knowledge organisation in academic libraries can use the advantages of LD technologies to increase availability of library resources on the world wide web. Existing methods of descriptive cataloguing are based on describing metadata and constructing unique authorized access points as text strings. However, this strings-based approach works well in the closed environment of a traditional library catalogue and not in an open environment where data are shared and linked. This chapter investigates the introduction of LD in the organization of knowledge in academic libraries, as literature shows that students prefer to search the internet for their information needs. Secondary literature was reviewed and analysed. Findings indicated that libraries that adopted LD increased the visibility of their products on the internet.

INTRODUCTION

Academic libraries should contribute immeasurably to the research, and the teaching and learning activities of the institutions that house them. Generally, library services are social institutions that were established to serve the communities that created them and should prove their value to their stakeholders, especially during this era of advanced and evolving technology where information is available on everyone's reach such as google, social media, social networks etc. (Malapela and De Jager, 2018). According to Malapela and De Jager (2018), the concept of valuing a library service has concerned library and information professionals for decades; however, there has been little consensus on the best approaches to determine and measure the value of library services. Library performance can be measured by accessibility and usability of information sources and services rendered. Advances in information technology such as the

DOI: 10.4018/978-1-6684-3364-5.ch005

Internet of Things (IOT), the Fourth Industrial Revolution (4IR) and Linked Data (LD) offer opportunities for improved service delivery in libraries and may transform the roles of library staff.

BACKGROUND TO THE RESEARCH PROBLEM

The principle of Knowledge Organisation (KO) means to arrange library resources in a manner that will facilitate easy access and retrieval when users need those resources (Macgregor & McCulloch, 2006). This could be attained through metadata creation such as cataloguing, classification, authority control, subject analysis and indexing. These bibliographic descriptions have been specified by standards, such as Resource Description and Access (RDA), Machine Readable Catalogue (MARC), subject headings schemes, classification Schemes and other metadata standards used. For instance, RDA is a content standard. The MARC structure is a coding standard and format that originated in the 1960s by Avram (1968) and was developed in pace with the technology of the time. The MARC system is a mathematical code using cataloguing numbers, letters and symbols to denote different elements or fields of bibliographic information. The philosophy behind the MARC system as stated by Avram (1968) was the design of one format structure (the physical representation on a machine readable medium) capable of containing bibliographic information for all forms of materials (books, serials, maps, music and other library information sources). The classification scheme is used for organising knowledge into a systematic order. On the other hand, the subject heading scheme is used to assign subjects for the library materials to increase consistency and easy retrieval (Olson, Boll & Aluri, 2001).

The metadata is then accessed through the library catalogue, Online Public Access Catalogue (OPAC), which is treated as a textual tool for KO (Nahotko, 2020). OPAC is a database of bibliographic records describing the holdings of a library. It allows users to search a document by author, title, subject and keywords, standard number, and more from a terminal, as well as for printing, downloading or exporting of records via different electronic means (Gohain & Siakia, 2013). According to Fabunmi and Asubiojo (2013), OPAC is an interface of an information retrieval system, which assists information searchers to access resources of libraries using several access points. OPAC thus provided users with a means of searching and accessing information; users can see the collections and issue the status of each document in the library, and can reserve and renew a document of their interest when needed (Swaminathan, 2017).

OPAC GENERATIONS AND LD

Nahotko (2020) opines that the OPAC interface has developed over time and with the advancement of technology. For instance, first OPAC generation (I) was created during the 1970s and 1980s and replicated the traditional card catalogue, mainly used to search for previously known items according to a limited number of basic metadata attributes, such as author, title, and call number. Options of search transactions in OPAC generation (I) were limited to entering a strict search phrase, as it required character-by-character matching between user query and the OPAC record.

The second generation (II), which appeared at the end of the 1980s, added the possibility to search by subject heading (with controlled vocabulary) or keywords from the title. Other fields were also added, as well as new mechanisms for request construction, like the use of Boolean expressions. Browsing facilities were also added. Catalogues have become available via Telnet. OPAC was connected to the circulation