

## Chapter 27

# Indexing and Abstracting as Tools for Information Retrieval in Digital Libraries: A Review of Literature

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### ABSTRACT

*Indexing and abstracting are like Siamese twins in the information retrieval process. Indexing and abstracting are the two approaches to distilling information content into an abbreviated, but comprehensive representation of an information resource(s). They are knowledge organisation tools which usually provide detailed and accurate maps and road signs in the information superhighway. Digital libraries are characterised by an electronic stock of information which can be accessed via computers, and are extension and augmentations of physical libraries in digital forms. They are information retrieval systems (a device interposed between a potential user of information and the information itself) which provide opportunities to access and retrieve information that is often accessible for a variety of reasons. This chapter presents a literature review on indexing and abstracting, information retrieval process, digital libraries pointing out the importance of indexing and abstracting in the information retrieving process and then highlighting the roles played by indexing and abstracting as tools for information retrieval in digital libraries. The chapter posits that indexing and abstracting plays a significant role as information retrieval tools in digital libraries.*

### INTRODUCTION

The world today, as a thousand years ago has two basic needs: wealth and knowledge. The most generous, efficient and effective information manager may not be able to make available to others what does not exist. Likewise, the most gifted intellects may not be able to apply the powers of reasoning and imaginative deduction to information they do not possess. Hence as the dire need for information drives

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the individual so also it goads the societies. The Web and wireless technologies have indelibly altered our lives (Tensen, 2013).

Rapid developments witnessed in telecommunications, computer technologies and other related technologies (Internet) have made it possible to store and retrieve information in many different forms and from diverse location. The first use of computers in information management in libraries opened the door to new ways of accessing and using information, making it possible to create and access electronic index to collections, electronic databases of journal article, conference papers and so on (Chowdhury and Chowdhury, 2003). Libraries are repositories of information and knowledge. However, more recently, libraries are understood as extending beyond the physical walls of a building, to serving as a 'gateway' or 'information superhighways' to stored information and knowledge. Such libraries are known and referred to as digital libraries. Libraries connect people and information; digital libraries amplify and augment these connections (Badhusha, 2008). It is pertinent for one to say that one of the most important contributions of web technology has been the creation of digital libraries which gave the means for having unhindered access to diverse information resources irrespective of location.

In digital repositories, the organisation, and access to information, information materials and tremendous amounts of knowledge is guarantee with the aid of information retrieval tools. These tools are indexing and abstracting. They are ancient and dependable information retrieval tools and plays a significant role in the information retrieval process of any information retrieval system be it digital, hybrid or traditional libraries. The indexing and abstracting method guarantees unhindered access to stored information and knowledge and at the same time allow for precision and high recall of information in an information retrieval system.

Indexing and abstracting are like Siamese twins. They are pioneer schemes of early civilization of knowledge classification and document arrangement and are still relevant and serve as the legacy to information retrieval system of the twenty-first Century. According to Cleveland and Cleveland (2000), indexing and abstracting have their distant origins somewhere and at some time when someone realised that written records need to be organised to enhance accessibility. Rubin (2010) describes indexing and abstracting as knowledge organisation tools which usually provide detailed and accurate maps and road signs in the information superhighway.

Traditionally, information retrieval has been a task for professional librarians, however, the availability of the Internet made literature searching directly available to widespread groups of researchers (Schatz, 1997). Information retrieval is the term commonly used to describe many types of literature searching. It is the science of searching for information in documents, searching for documents themselves, searching for metadata which describe documents or searching within databases whether relational stand-alone databases or hypertextually networked databases such as World Wide Web, digital libraries.

Basically, information retrieval system is concerned more with retrieving information about a subject than with retrieving data that satisfies a given query. The major functions of an information retrieval system are organisation and retrieval of information. However, for fast retrieval and ranking, documents in the central repository which provides access and management capabilities to collections and catalogue need to be indexed (Baeza-Yates and Ribeiro-Neto, 2011; Goncalves, 2011).

Digital libraries are a metaphor for access to collections of electronic documents through a network while the classic research area dealing with the electronic search for documents is information retrieval (Ferber and Thiel, 1996). Digital libraries can be seen as new tools for achieving human goals by changing the way information is used in the world. The main channel of access to digital libraries, through which information is created, discovered, enriched, accessed and ultimately used is service (Goncalves, 2011).

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