STUDYING ABOUT THE KOS, DL, ETD AND VDL: A CONCEPUTAL FREMEWORK

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ABSTRACT

Knowledge organization systems (KOS) in digital libraries are becoming more important because to the ever-expanding digital material and the rising demand for digital information. While social tagging and conventional categorization methods have been used to organize and browse digital collections, they both have their drawbacks that prevent them from providing users with the best possible experience. To overcome these constraints and improve the digital library user experience, new methods need to be investigated and created, such as the prototype hybrid model of knowledge organization systems. Information overload is a result of the exponential expansion of digital material, which makes it difficult for consumers to quickly locate the information they need. Classification schemes based on strict hierarchies may fail to do justice to the richness and interconnection of data in such large databases. To address this problem, the prototype hybrid model combines several methods of organizing information to provide a more holistic and integrated picture of digital assets. Users of digital libraries come from a wide range of demographics and have a wide variety of information demands and informational interests. Knowledge organization that attempts to please everyone with a single model may fall short of meeting the needs of its diverse user base. The hybrid approach uses machine learning algorithms to study individual users' activities, tastes, and interactions to provide suggestions and custom content.

Keywords: - Machine, Network, Library, Science, Hybrid.

I. INTRODUCTION

The rapid expansion of digital libraries of various kinds is now one of the most notable and prominent scenarios of advancements in information and communication technologies within the area of Library and Information Science. Digital libraries (DLs) have changed the way information is distributed and delivered, and their growing prominence has cast doubt on the value of traditional libraries. As a result, the rate of expansion of digital material has quickened, with more and more e-documents being added, both in the "born digital" and digitized heritage forms. One of the main drivers of the explosion of digital libraries is the convenience of providing widespread networked access to vast amounts of data. The publication of the first issue of D-Lib Magazine in 1995, which sparked the design and development of DLs around the world (Malwad, et al., 1993), is widely credited as the impetus for this phenomenon. Prior to this time, most work on DLs was done by individual groups or small institutions.

As the number of websites proliferates at a fertile rate, it has created a paradoxical situation: on the one hand, there has been a tremendous increase in the availability of e-content, and on the other, it has been posing some constraints in accessing information. There is an overabundance

of digital information on the web because of developments in simpler data gathering technologies, which are also credited with contributing to the expansion of DLs.

One major drawback of search engines, the primary tool used to find content online and the backbone of DLs in particular, is that they don't provide users with accurate access to the information they need. High-recall references are abundant in the search results. Although there are several search tricks to help you refine your query and increase the relevancy of your retrieval, the WWW search tools, primarily search engines, can only execute a superficial search. Research into web-based IR has resulted in the development of a number of precision tools for gaining access to more narrowly focused findings; they have yet to be included into the online ecosystem. Metadata, a novel form of information organization that has a mutually beneficial relationship with Library Classification and Library Cataloguing, is increasingly being used to categorize and catalog digital materials. Metadata has developed from conventional approaches of cataloging material in both human and digital settings. Metadata is widely used in the organization of DL resources, and it has been conceptualized via the evolution of conventional and standard library tools and procedures like the AACR2, ISBDs, and the MARC formats and the library categorization systems.

Knowledge organization systems (KOS) provide a potential answer to this problem, which might lead to successful outcomes in DLs. Web search engines have improved over the years, but there are still issues with keyword searching that need to be fixed before information can be retrieved more efficiently. Minor adjustments to search terms might provide drastically different results. KOS that incorporates old and modern technologies including categorization systems, lexical databases, topic headings, ontologies, taxonomies, and thesauri are necessary to overcome these issues. Tudhope and Koch (2003) approved a study plan presented by Hill and colleagues (2002) to examine the effects of considering KOS as integral DL components on improving search results in DL. Therefore, the primary focus here has been on improving the results of DL searches for end users.

Studying the KOS in DLs and its potential to improve information retrieval efficiency and the user experience is necessary to reach this goal. There is a pressing need for research on the interplay between the several facets of DL and the KOS in this setting. Several studies have shown the potential for KOS integration with DL to improve the user experience. This aided in the creation of a prototype hybrid KOS model well-suited to DL architecture with varying informational content, with an emphasis on ETDs. The findings of this study suggest that it aided in improving the user experience and retrieving better information from the targeted DL in ways that were both user-friendly and intuitive. As a result, DL's retrieval performance was enhanced, and user expectations for better information retrieval were realized, all while precious time spent on fruitless searches was conserved.

II. KOS, DL, ETD AND VDL: A CONCEPUTAL FREMEWORK

In order to better use, identify, and organize library resources, physical libraries have developed and implemented several Knowledge Organisation (KO) methods and approaches. Classification schemes like the Dewey Decimal System, the Library of Congress Classification, the Colon Classification, the Universal Decimal Classification, and others are good examples of KOS. In the past, libraries relied heavily on categorization systems, cataloging, indexing, and other classic Knowledge Organisation tasks to keep their collections in order. Recently, the use of electronic and digital documents has presented a threat to this method. The philosophy and practice of knowledge organization are under attack and challenge by the new electronic world. It is not necessary to rely on "classical" knowledge organization activities like indexing and categorization when conducting electronic retrieval operations on documents. Thus, in the new electronic settings, an argument expressing the qualitative difference of knowledge organization must demonstrate that knowledge organisation is worthwhile and that it provides a meaningful assistance to users of IR systems.

It might be helpful to provide a quick overview of the study's core sections before diving into the main concerns surrounding information retrieval from digital libraries. Electronic theses and dissertations (ETDs), digital libraries (DLs), and KOSs (Knowledge Organization Systems) all have mutually beneficial relationships with one another.

This study uses the Vidyanidhi Digital Library (VDL), a real-world example of an electronic thesis or dissertation, to implement and evaluate its concepts. This aided comprehension of their mutual dependence and the various components of KOS as previously envisioned. Briefly discussing the interconnections among DL, ETD, VDL, and the KOS. The widely used automatic indexing system PRE served Context Indexing System (PRECIS) has elucidated a mutually inclusive and context dependency in information storage and retrieval, and these concepts will be used, at least in part, to comprehend the connections between the many parts of KOS used in the case studies.

III. KNOWLEDGE ORGANISATION SYSTEMS (KOS)

The first step is to have an understanding of the term "Knowledge Organisation" (KO).

Libraries, archives, information professionals, subject experts, computer algorithms, and the general public all play a role in knowledge organization by performing tasks like document description, indexing, and Classification. Knowledge organization (KO) is the study of the methods and tools used to classify and catalog information such as text, images, audio, video, and other media in order to better understand and use that information. The second facet of KO is best shown by the Periodic Table of Elements in chemistry and the Taxonomies of Life in the Biological Sciences.

"Knowledge Organization" is defined by Dahlberg (2006) as "the science of

structuring and systematically arranging of knowledge units (concepts) according to their inherent knowledge elements (characteristics) and the application of concepts and classes of concepts ordered by this way for the assignment of the worth knowing contents of referents (objects/subjects) of all kinds."

IV. CONCLUSION

This study indicates the potential for every DL and ETD situation to use a hybrid KOS model to improve the user experience throughout the retrieval process. When seeking data stored in a DL or ETD system, the KOS is necessary. KOS's many moving parts and qualities make it easier to find what you're looking for by improving the system's indexing, index navigation, and user interface. However, these KOS parts are not one-of-a-kind and may be found in a wide variety of other systems. Information scientists and researchers will face a number of challenges as a result of this KOS variant. This will motivate them to investigate and create a user-centric KOS for their platform. An in-depth examination of KOS is necessary since an efficient DL/ETD system depends on a correct application of KOS and its properties.

The consequences of KOS's growth and evolution for DL study are made clear by an analysis of research tendencies in the field. Research in KOS has found new facets of the field at every time scale from antiquity to the present. KOS approaches have shown their evolution, trend, and progress, with implications for DLs and ETDs, in areas such as classification, categorization, concept mapping, search strategy visualization, thesaurus taxonomy ontology semantic web artificial intelligence. The most up-to-date findings and developments in the field of Knowledge Organisation are also presented. Current trends indicate a great deal of study is being published from the perspective of the Semantic Web, which includes Linked Data, Cloud Computing, Cyber-infrastructure, and Service Oriented Architecture (SOA) applications in the DL domain.

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