

Content Organization and Knowledge Management in the Digital Environment

Kamani Perera

Regional Centre for Strategic Studies, Colombo, Sri Lanka

Abstract - Knowledge Organization Systems (KOS) such as classification schemes, authority files, semantic networks, ontologies are mechanisms for content organization. These systems are used to organize content for the purpose of retrieval and to manage a collection. This serves as a bridge between the user's information need and material in the collection. Knowledge Organization Systems help the user to identify their need without prior knowledge of its existence. It guides user through a discovery process.

***Index Terms* – knowledge organization systems, abstracting/indexing service, metadata, semantic web, ontology, knowledge management**

I. COMMON CHARACTERISTICS OF KOS

- It imposes a particular view of the world on a collection.
- Same entity can be characterized in different ways.
- Sufficient commonality between the concept expressed in the system and real world object.

II. TYPES

Term Lists – authority files, Glossaries, Dictionaries, Gazettes
Classifications and Categories – Subject headings, Classification schemes
Relationship lists – Thesauri, Semantic Networks, Ontologies

III. ORIGIN AND USE OF KOS

In the physical library, classification schemes such as Universal Decimal Classification (UDC), Dewey Decimal Classification (DDC) reflect among other things, the need to store a single item at a single location on a shelf.

IV. ABSTRACTING AND INDEXING SERVICE

This is a very fruitful way of knowledge management. The user can go through the abstract of the document and decide whether its relevant for further references. In a physical library, professional librarian can go through the document and trace the major keywords for indexing purpose. This helps to user to search his needs without wasting time and can find out exact information for his research purpose. In Sri Lanka, we widely use this service when do content organization.

V. PLANNING KOS

When analyzing how the KOS might be used with a particular digital library, it is essential to understand the environment of the user. Librarian should analyze the user needs and its necessary to locate KOSs to meet the need.

Many users are aware of KOSs on the web within their discipline. Developers may also turn to directories, librarians in the field, and reference sources, or they may perform a general search of the Internet.

If the KOS is stored in database, user would need log-on information such as user ID and password from the digital library system to the external KOS, in order to provide access to the web-enabled database. In the case of more direct link, the access may be by URL (universal resource collector).

The KOS can be exposed to the user in different ways. Material can be grouped into KOS related themes or categories on the digital library's web site. The KOS may be used at a higher level to identify specific portals for different uses or users. If the content of the digital library includes meta data records, the KOS may be displayed as index terms on the records or in its entirety as a navigation aid to searching.

VI. METADATA

This is defines as 'data about data' or 'information about information'. In the other words, metadata is data that describe information resources. A short descriptive note on a book, an informal description of search hits by search engines, a catalog and MARC (Machine Readable Cataloging) record, are data that describe an information resources and hence metadata. To refine this popular definition, metadata is considered "structured" data about data.

Metadata is any data that supports the effective use of data, including information that can facilitate knowledge management, knowledge access and analysis. The data that metadata capture to describe an information resource can be divided into two categories such as intrinsic and extrinsic data. Intrinsic data are characteristics extracted directly from the information resource such as title, author, and subject. The extrinsic data are those related to the administration and other non-bibliographic data such as author e-mail, author department, password or digital signature. The first is useful for knowledge management and administrative purpose which the second facilitates resource descriptions, identification and discovery.

Metadata therefore, captures the wide range of intrinsic or extrinsic information about a variety of

objects. These intrinsic or extrinsic characteristics and features are described in the individually structured data elements that facilitate object use, identification and discovery.

Taking the metadata definition as structured data about data reveals that metadata is not new. Standard bibliographic information, indexing and cataloging information and classifications are all structured data that describe the characteristics and contents of information resources to facilitate their discovery and use. But what is new, is a new information environment with new challenges and problems that have made metadata for more eminent than before, expanding the metadata efforts beyond the traditional library environment.

In the traditional libraries, the user can consult with the librarian, as an intermediary, to interpret the metadata used for resource description; but in the web the story is different. The information provided by a wide range of resource description communities, each with his own metadata, and accessed through one portal.

VII. SEMANTIC WEB

The next generation of web, called semantic web, is based on the machine-processable semantics of the information, stored in the machine processable metadata. This is not a separate web but an extension of the current web in which the information is given well-defined meaning, better enabling computers and humans to work in cooperation.

VIII. ONTOLOGY

The prerequisite of this web, as its definition implies, is metadata that explicitly represent semantics of data which called ontology. This is the newest label to be attached to some KOSs. The knowledge management community is developing ontologies as specific concept models. They can represent complex relationships among objects, and include the rules and axioms missing from semantic networks. Ontologies that describe knowledge in a specific area are often connected with systems for data mining and knowledge management.

Ontology as a new emerging form of metadata is revolutionizing the current classificatory approaches towards semantic metadata. Consulting the traditional metadata systems with ontological view, such as thesauri, and card catalog systems as well as converting the controlled vocabularies into the ontology indicates this change.

IX. KNOWLEDGE MANAGEMENT (KM)

Knowledge management is a systematic approach that ranges from technology-driven methods of accessing, controlling, and delivering information to massive efforts in transforming corporate culture.

KM is not only about managing knowledge assets but managing the process including developing knowledge, preserving knowledge, using knowledge and sharing knowledge. KM involves the systematic process of finding, selecting, organizing, distilling and presenting

information in a way that improves an employee's comprehension in a specific area of interest.

KM is a conscious strategy of getting the right knowledge to the right people at the right time and helping people to share and put information into action in ways that strive to improve organization performance.

X. CONCLUSION

In Sri Lanka, most of the libraries use CDS/ISIS windows version for content organization. In this digital environment we do keyword indexing widely for knowledge management. It is very fruitful way of managing the knowledge. In this process it is very easy to locate a document without wasting precious time of its users. And also it helps to select the right documents for the right user. In the Regional Centre for Strategic Studies library, where I am the Librarian, do this task widely. It is the most practical way to give the better services to the user.

In a digital environment librarian should familiar with search engines such as google, yahoo etc. and relevant websites according to their users needs. In a traditional library system, librarian use d to compile cumulative indexes for the benefit of their users. But in a digital system librarians can use various databases, library networks, search engines, websites etc. to search information.

In the Regional Centre for Strategic Studies (RCSS) library, we use traditional and non-traditional knowledge organization systems for content organization. In the digital environment, we use classification systems such as UDC, DDC to organize the knowledge. And also we use traditional card catalogue as well as electronic database. In a developing country like Sri Lanka, we have to face electricity failures and at that time physical catalogue is very useful. In the RCSS library we used to store documents electronically and physically available as printed documents. Both ways user can reach their needs. If the user can't visit the library he can obtain visit the e-version of the documents after consulting the librarian through e-mail. In this environment KOSs act as a bridge in between users and their needs.

REFERENCES

1. Gail Hodge, "Systems of Knowledge Organization for Digital Libraries: Beyond Traditional Authority Files", 2000. www.clir.org/
2. Mehdi Safari, "Metadata and the Web", 2004. <http://www.weblog.ir/2004/v1n2/a7.html>
3. K. Vinitha and M. Mymoon, "Knowledge Management: Emerging challenges for Library and Information Professionals", 2005. In: *Proceedings of the National convention on Library and Information Networking (NACLIN 2005)*. Eds. H.K. kaul, Gayathri Sen, pp.122-135.

□

Knowledge Organization Systems (KOS) are mechanisms for cont