

Course Title: Knowledge Organizations and Management I

(INSC 3122)

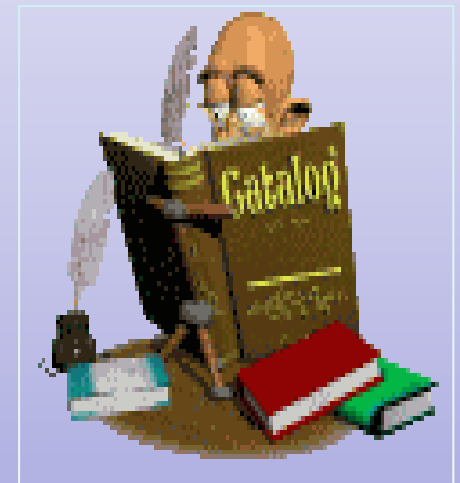
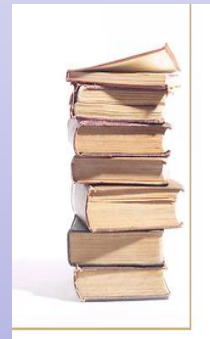
Instructor Name: Felegeweyin Yifru

Knowledge organization and management



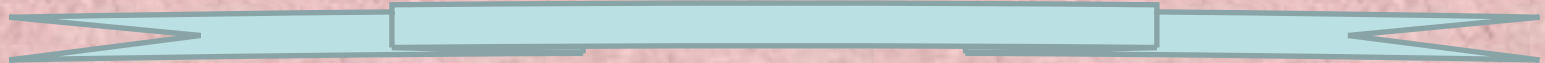
CHAPTER ONE

Introduction to Knowledge Organization(KO)



Outlines

**Definition of KO,KM, Need, Context
and formatting of Knowledge
organization**





What is knowledge

- ❖ Knowledge includes facts about the real world entities and the relationship between them. It is an Understanding gained through experience. It is always about something specific.
- ❖ Thus, The structures in specific domains are discovered or determined by professionals in those areas.

Definition of Knowledge organization

- ❖ **The term Knowledge organization** means making knowledge an "organum" (Greek = instrument, aid) for particular purposes". Organization (or order) being an arrangement, or organized structure for arranging or classifying.
- KO is about **activities** such as document description, indexing and classification performed in libraries, databases, archives etc.

KO...

cont

- Identifying existence of all types of information-bearing entities as they are made available.
- Identifying works contained within those information-bearing entities or as parts of them.
- Systematically pulling together these information-bearing entities into collections in libraries, archives, museums, Internet communications files and other such depositories

KO

Cont...

- Producing lists of these information-bearing entities prepared according to **standard rules**
- Providing name, title, subject and other useful access to these information-bearing entities
- Providing the means of locating each information-bearing entity or a copy of it

Organization...

(cont.)

- Historically there have been many institutions and tools devoted to knowledge organization
 - Libraries,
 - Museums,
 - Archives,
 - Indexes and catalogs,
 - dictionaries, phone books, etc.

General Steps for Organizing

- ✦ Obtain information package(object/s)
- ✦ Describe information package.
- ✦ Perform subject analysis on information package:
 - Verbal analysis (indexing)
 - Classification

Why Organize Knowledge?

✚ The main reason

- To *find things* more effectively
- It is made in order to facilitate the use of documents or recorded knowledge
- “Provide the right ‘information’ for the right reader at the right time”.
- To allow easy retrieval and for good service to readers

Need

❖ Knowledge organization is needed for different environments for different purposes.

▪ The description of documents, their contents, features and the organization of these descriptions so as to make these documents and their parts accessible to persons seeking them

- to provide structured access to information;
 - to bring essentially like information together and to differentiate what is not exactly alike.
- 🌐 Organizing information not only means bringing all the same information together, but also in pinpointing/locate the differences and assist the user in selecting from the alternatives.

Need..

Cont..

- ✓ Knowledge must be organized in a library in an appropriate manner with the objective of dissemination.
- ✓ Since books are the most common source of knowledge. In a library as larger the number of unorganized books; it is all the more difficult to locate a particular book.

Knowledge Management (KM)

- knowledge management is about making the right knowledge available to the right people.
- ❑ Doing what is needed to get the most out of *knowledge resources*.
- ❑ It is the process of **creating, acquiring, organizing, sharing** and **making available** important knowledge for end users.

Cont ...

KMS

- ❖ **Knowledge Creation:** *Knowledge is created as people determine new ways of doing things or develop know-how. It is created either as explicit or tacit knowledge.*
- ❖ **Knowledge Acquisition:** finding existing/new knowledge, understanding requirements, searching among multiple sources and representing in a reasonable way.
- ❖ **Knowledge Storage:** stored and organized in a repository so that others in the organization can access it.

- ❖ **Knowledge Sharing:** is the exchange of ideas, solutions, experiences to individuals using which people can either search or navigate to the knowledge items.
- ❖ **Knowledge must be made available** in a useful format to anyone in the organization who needs it, anywhere and any time.
- ❖ **Knowledge Utilization:** This is end goal of knowledge practice. The KM does not have any value if knowledge created is not applied, used and reused to its potential.

Knowledge management systems (KMS)

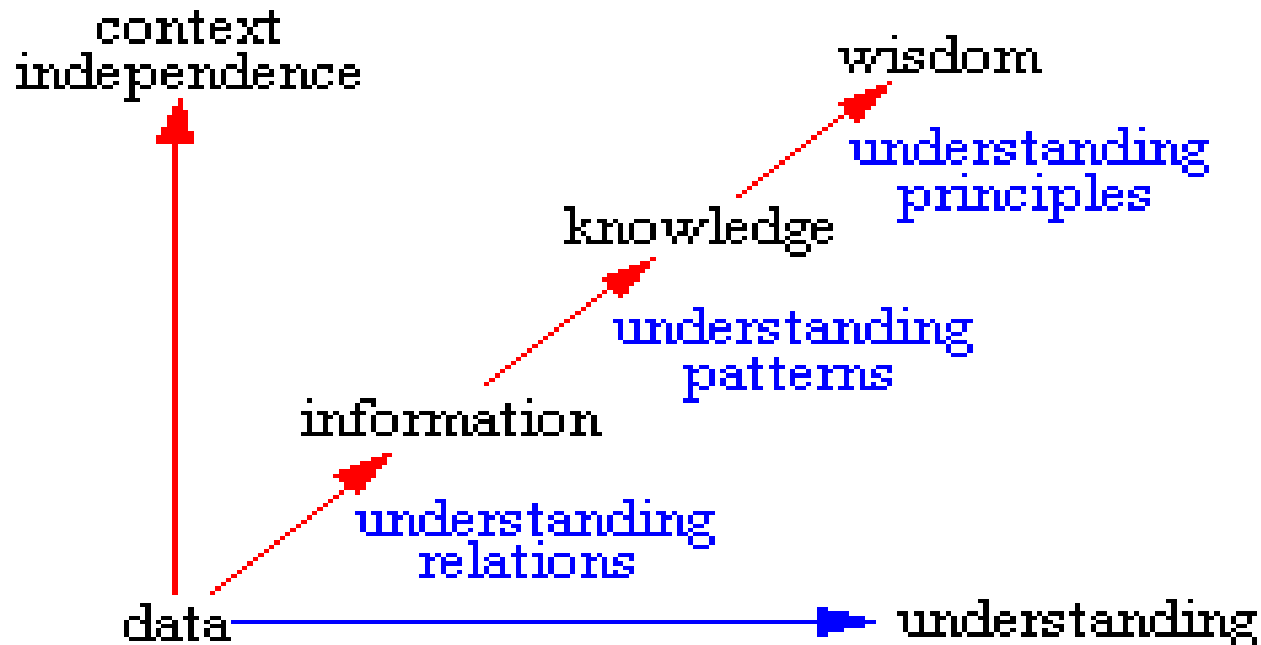
- **KMS** refer to any kind of IT system that stores and retrieves knowledge, locates knowledge sources, mines repositories for hidden knowledge, captures and uses knowledge, or in some other way enhances the KM process.

Context of knowledge organization

- **Knowledge organization** is the process of describing information resources and providing **name**, **title**, and **subject access** to the descriptions, resulting in records that serve as surrogates for the actual items of recorded information.
- These surrogate records are then placed into information retrieval tools, where the records act as pointers to the actual information resources.

- Organization of knowledge is the most comprehensive term expressing the library or information centre function served by classification.
- It indicates the ability not only to pinpoint specific items of information but to also:
 - Demonstrate the complete range of subjects available;
 - Their relation to each other, being a very important educational function.

Formatting and Structuring Knowledge



- **Data** – facts and figures which relay something specific, but not in organized way.
- **Information** – contextualized, categorized, calculated and condensed data.
- **Knowledge** – knowhow, understanding, experience, insight, intuition and contextual information.

Where does information or knowledge come from?

- Books
- Periodicals
- Non-print materials
- Non-print materials
- People
- Internet
- library databases

Describing Documents

- **Describing Documents** looks at document representation and document surrogates/replacement:
 - i.e. records that identify and characterize, and serve as keys for retrieving the actual documents.
- In many information retrieval situations, we are unable to work with documents themselves, but have to rely on representations or document ‘surrogates’.
- For example: Construction of indexes(alphabetical list of document/book) were consisting of brief records of documents, and retrieved those surrogates in advance of retrieving the actual documents.

Describing Documents (cont.)

- Library catalogues, citations, abstracts and bibliographies are typical examples.
- Identification keys – International Standard Book Numbers (ISBNs), International Standard Serial Numbers (ISSNs) and URLs – are another type of document surrogate.
- All these document surrogates represent individual documents in an information retrieval system.

Describing Documents (cont.)

- Document representation include:
 - Cataloguing
 - Bibliography (historical and descriptive),
 - Citation,
 - Indexing and abstracting services,
 - Records management systems
 - Metadata of data added to a networked electronic resource as a mechanism to enable it to be adequately described and located

Describing Documents (cont.)

- Some common and persistent characteristics and problems of document representation are:
 - Defining the document
 - Identification
 - Breadth of bibliographic unit. At what level should a document be described and indexed? Should, for example, individual contributions to a journal be indexed separately? Etc.
 - Selection
 - Search keys,
 - Location and accessibility

Indexing and Searching Languages

- Indexing and Searching Languages refers to indexing languages that are used to represent subjects.
 - Users often approach information sources not with names in mind, but with a question that requires an answer or topic for study.
 - Users seek documents or information concerned with a particular subject.
- This is a common approach to information sources and, in order to provide for it, the document or document representation must include enough data to ensure that items on specific subjects are retrieved.

Indexing... (cont.)

- **Approaches to indexing language**
- An **indexing language** can be defined as the terms or codes that might be used as access points in an index.
- A **searching language** refers to terms that are used by a searcher when specifying a search requirement.
 - If the terms or codes are assigned by an indexer when a database is created, then the indexing language is used in indexing.
 - The same terms or codes may also be used as access points to records during searching.

Indexing... (cont.)

- While the indexing language may be distinct from the searching language, clearly, if retrieval is to be successful, the two must be closely related.
- Indexing languages may be of two different types:
 - Controlled-indexing languages or assigned-term systems, and
 - Natural-indexing languages or derived-term systems.
- **Controlled-indexing languages** (assigned-term systems).
 - With these languages a person controls the terms that are used as index terms.

Indexing... (cont.)

- Controlled-indexing languages may be used for names and other labels but much emphasis is placed upon languages with terms that describe subjects.
- Normally, an authority list identifies the terms that may be assigned.
- Indexing involves a person assigning terms from this list to specific documents on the basis of subjective interpretations of the concepts in the document; in this process the indexer exercises some intellectual discrimination in choosing appropriate terms.
- **Natural-indexing languages** (uncontrolled or derived-term systems)

Indexing... (cont.)

- These languages are not really a distinct or stable language in their own right, but rather are the ‘natural’ or ordinary language of the document being indexed.
- Strictly, natural language systems are only one type of derived-term system.
- A derived-term system is one where all descriptors are taken from the document being indexed.
- Thus, author indexes, title indexes and citation indexes, as well as natural language subject indexes, are derived-term systems.
- Any terms that appear in the document may be candidates for index terms.

Indexing... (cont.)

- Natural language indexing and controlled language indexing are used extensively in many information retrieval applications.
- Both are used in retrieval on:
 - CD-ROM - via the online search services;
 - in document management systems; and
 - in online public access catalogues.
- Many databases include terms from controlled indexing languages (often including both alphabetical indexing languages and classification schemes) and also support searching on the text of the record, thus covering all options.

The Internet and its Applications

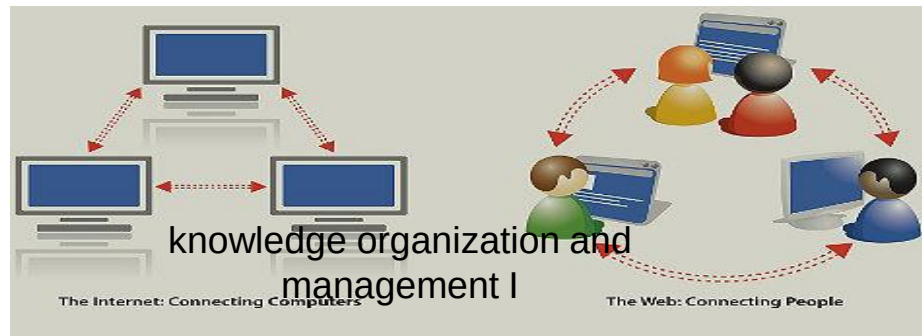
- The Internet and its Applications refers to the wide range of other information sources that may be accessed through the Internet, and the ways in which documents that are available over the Internet may be created and accessed.
- Note, that many of the online search services, and online public access catalogues may be accessed through: Internet

The Internet... (cont.)

- **The Internet** is a collection of interlinked computer networks, or a network of networks.
 - It can connect millions of different computers and the rate of increase in use and in new subscribers is growing on a month-by-month basis.
 - It offers a gateway to a myriad of online databases, library catalogues and collections and software and document archives, in addition to frequently used store-and-forward services, such as UserNet News and e-mail

The Internet... (cont.)

- In addition, the commercial applications of the Internet are becoming significant.
 - Electronic commerce (e-commerce) is of increasing concern to businesses. [Drone](#)
 - The main products sold through the Internet are books, CDs and music and software, but the potential is much greater.
- The terms Internet and World Wide Web tend to be used interchangeably.
 - Strictly they are not the same thing.
 - The Internet is a world-wide network of interlinked computer networks.
 - The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet. It is an information-sharing model that is built on top of the Internet via (HTTP and FTP).
 - The Web is software that lets you use that content...or contribute your own. The Web, running on the mostly invisible Internet, is what you see and click on in your computer's browser.



The Internet... (cont.)

- The Internet provides global connectivity via a mesh of networks based on the transmission control protocol/Internet protocol (TCP/IP) and open systems interconnection (OSI) protocol.
- Documents are transferred between these networks using one of a variety of Internet transfer protocols, such as file transfer protocol (FTP) or hypertext transfer protocol (HTTP)
- The Web comprises those servers linked to the Internet that use HTTP.
- This means that documents are linked to one another through hyperlinks that are embedded in each document.
- **TCP (Transmission Control Protocol)**
- TCP is responsible for breaking data down into small packets before they can be set over a network, and for assembling the packets again when they arrive.
- **IP (Internet Protocol)**
- IP takes care of the communication between computers. It is responsible for addressing, sending and receiving the data packets over the Internet.

The Internet... (cont.)

- **HTTP (Hyper Text Transfer Protocol)**
- HTTP takes care of the communication between a web server and a web browser. HTTP is used for sending requests from a web client (a browser) to a web server, returning web content (web pages) from the server back to the client.
- **FTP (File Transfer Protocol)**
- FTP takes care of transmission of files between computers.
- Users move from one document to the next using hyperlinks, which are created through a combination of:
 - Uniform resource locator (URL)
 - Mark-up language (HTML)
 - Transfer protocol (HTTP) and
- Web browser, such as Netscape Navigator or Internet Explorer, Mozilla, Chrome
- From an indexing perspective, the hyperlinks on the WWW that form the basis of the browsing network are uncontrolled, but humanly assigned index terms (or on occasions other objects, such as images).
- They are normally terms in the knowledge organization and management body of the text of the Web page.

Manual Information Retrieval System

- Manual Information Retrieval System refers to access, which is by means of indexes, and the information professional will act as an intermediary between the stock and the user..
- Documents must be arranged or physically stored in an order which requires a minimum of explanation, and which matches as far as possible the search patterns of users.

Manual Information... (cont.)

- **Approaches to document arrangement**
- The arrangement in a collection is unlikely to follow one sequence for all types of material.
- As always, a balance must be struck between managerial priorities and user convenience.
- The various types of shelf arrangements that encourage users' browsing include:
 - Detailed classified subject arrangement
 - Title arrangement
 - Author arrangement

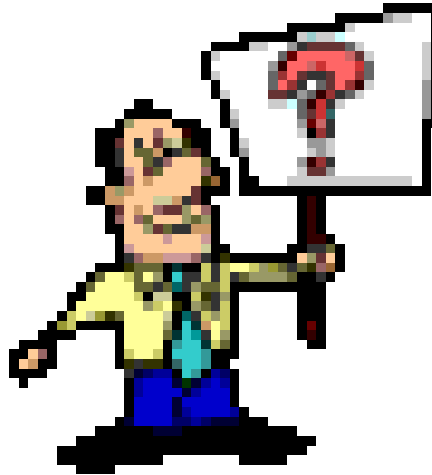
Manual Information... (cont.)

- **Guiding**
 - Library guiding is essentially the system/user interface
 - The range of sequences that are likely to be found even in quite small libraries underlines the need for users to be given clear information about the whereabouts/location of every item of stock.
 - Such guidance may take forms that are specific to individual environments, but may include:
 - Group or individual instruction in the layout and use of the collection
 - Within the catalogue, shelf marks must clearly indicate the sequence within which an item is housed
 - Users of the catalogue should have easy access to information guiding them to each sequence
 - Clear and explicit guidance that is visible within the library
 - Guidance as necessary on book presses and shelves
- knowledge organization and
management I

Management of Systems for the Organization of Knowledge

- Management of Systems for the Organization of Knowledge refers to the components of a system that needs to be designed and maintained.
- The infrastructure for systems for the organization of knowledge has three components:
 - Databases,
 - Hardware, and
 - software.
- Business organizations will take responsibility for performing these activities in relation to the transaction and management information systems that underpin/strength the effective operation of the organization.

Questions??



END OF UNIT 1