



# An Overview of Information Sources

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## 1. Introduction

We use and share information when speaking, listening, watching, writing or by other methods. We require information in our day-to-day activities — such as, for study, research, problem solving or even entertainment. Have you ever wondered how information is generated, accumulated and made available to us? Well, people acquire knowledge through study and experience and make their views, observations, experimental research results, etc. known to other human beings by writing or other means of communication.

Information is generated from all kinds of human activities. Individuals and organizations, both generate information for some purpose or the other. For example, R &D organizations carry out research and generate new information. Government organizations, through their various activities, such as governance, administration, census and surveys, generate information. This way information is being generated and recorded in variety of sources and is made available for public use.

## 2. Objectives

- define Information and Information Sources;
- state the characteristics of Information Sources;
- distinguish between Primary, Secondary and Tertiary Sources of Information;
- identify documentary and non-documentary sources; and
- trace the history of development of information sources.

## 3. Definition of information

Collins English Dictionary defines information as ‘i) knowledge acquired through experience or study, ii) Knowledge of specific timely events or situations- such as news, iii) The act of informing or condition of being informed – by an office, an agency, etc. iv) A collection of facts or data- such as statistical information, and v) processed, stored and transmitted data- such as in computer science, etc.’ The above definitions show that information is a term with many meanings depending upon the context and is closely related to concepts such as knowledge, instruction, data and communication. In terms of communication, information is a message received and understood. In terms of data, it can be defined as a collection of facts from which conclusions can be drawn. In terms of knowledge, it is something, which we acquire individually through experience and education. However, knowledge is personal, individual and involves practical use of information. It can be shared but might be perceived differently.

By going through the above definitions, we may define that facts, conclusions, ideas, and creative works of human intellect and imagination that have been communicated formally or informally in any form, is ‘information.’ Information can be transported, stored or shared without any difficulty. Today, we can access and find information on almost everything.

#### 4. Information sources

The sources from where we get information are called information sources and these comprise documents, humans, institutions as well as mass media like radio and television. The most important informal form of sharing information is by personal communication, where people make their thoughts and wishes known to each other. People communicate in many ways, for example by talking, writing letters, making telephone calls and also through Internet. People all over the world share views, ideas, observations, experimental research results, etc. with fellow human beings.

Apart from personal communication, we all depend on other sources of information for news, study, research and entertainment or even for solving our day-to-day problems. Some of these sources are newspapers, books, magazines, CDs, DVDs, radio, television, Internet, etc. At present, a wide range of these sources are available and all of us depend on these recorded information sources as well as on mass media like television and radio for getting information.

We can get information from various institutions. For instance, before taking admission we consult educational institutions like schools, colleges and universities. Apart from academic institutions, several government organizations, health institutions, R&D organizations, S&T Institutions, Industries, etc. serve as useful source of information in their respective areas of activities. All of us have seen and used many of these sources. In this lesson, you will study these information sources; categorize them based on their type, information contents and physical form. You will also study the historical development of these sources.

#### 5. Types of information sources

Information sources are organized according to their information contents, type, media or form to cater to the different needs of the users. We can group information sources into two broad categories as follows:-

- Documentary Sources
- Non-Documentary Sources

##### 5.5.1 Documentary Sources

All recorded sources of information, irrespective of their content and form, come under documentary sources. These may be published or unpublished, in print or in electronic form. These may be books, periodicals, magazines, or reference books and others. Documentary Sources can be further categorized based on their information contents and physical form as follows:-

- Documentary Sources (By Content)
- Documentary Sources (By Form)

##### (a) Documentary Sources of Information (By Content)

All recorded sources of information such as books, periodicals, articles, dictionaries, newspapers, dissertations, guidebooks, directories, etc. are organized into quite basic and fundamental categories based on their information content and organizational level. These are:—

- Primary
- Secondary, and
- Tertiary sources of information.

##### (i) Primary Sources

Primary sources are those sources which contain original information that has been published, reported or recorded for the first time. Primary sources include raw data, new interpretation of previously known facts or idea, any new observation or experiment, etc. Information tends to be latest and comes out in the form of an article in a periodical, monograph, research report, patent, dissertation, reprint of an article or some other work. By its very nature, the primary sources of information are widely scattered and it is difficult to locate the information contained in them. Following is the selected list of primary sources of information:-

- Periodicals

- Newspapers
- Technical Reports
- Dissertations
- Conference papers
- Patents
- Standards

### **Problems of Primary Sources**

Primary sources are widely scattered and are available in such a large number that it is extremely difficult to keep track of all that is published even in a single discipline. To solve this problem, this widely scattered information in primary sources is constantly being compressed, organized and rearranged according to some definite plan and communicated through another set of publications called secondary sources of information.

#### **(ii) Secondary Sources**

Secondary sources of information are mostly dependent upon primary sources of information for their existence. They usually present the contents of primary documents in condensed form or list them in a helpful way so that existence of primary documents are known and access to them is made easy. Based on the reorganization of information in these sources, the secondary sources can be grouped under four broad types:-

- Index/Abstract Type
- Survey Type
- Reference Books
- Technical Translations

#### **Index/Abstract Type**

The word 'index' is derived from the Latin word 'indicare', which means to 'point out' or 'to show'. Index types of secondary sources scan the primary sources, select the relevant items and arrange them in helpful sequence for easy and quick retrieval. Under this category, indexes, bibliographies, indexing and abstracting periodicals, and current awareness services are covered. These are secondary publications which list and arrange the relevant items from the primary documents for easy and quick access. For instance, indexing and abstracting periodicals systematically scan the current primary sources of information (like periodicals, research reports, conference proceedings, etc.) on a particular subject field, select the relevant items, index (or provide brief summary of) each item, and arrange it in a helpful sequence so that each item can be easily located and identified. Indexing and abstracting periodicals are brought out at regular intervals and keep users abreast of the current literature on a subject and serve as important guides to the primary literature. Without these secondary sources, a large part of primary literature may remain unknown and unused.

#### **Survey Type**

These publications survey the selected portion of primary literature and provide

- An overview of the subject
- Highlight significant literature on the subject (Treatises)
- Depict the progress of a particular field of study (Annual Reviews, advances, etc.) or
- Present the contents of primary literature on a subject in easy and understandable form keeping in view the particular group of users. (Textbooks)

#### **Reference Books**

Reference books/sources provide answers to factual queries, statistical information, and background information on a special or general subject. Sources like dictionaries, encyclopaedias, directories, yearbooks, almanacs, maps and atlases etc. come under reference sources. These sources are used for

finding out facts on a topic. These sources often have the subject headings in alphabetical order for finding the information quickly. These sources are used for consultation and not for continuous reading. These are not available for a loan from the library.

### **Translations**

Whenever a primary source is translated into another language for the benefit of the users who are not familiar with the language of the original source, the translation becomes a secondary source. Some primary research periodicals in Russian, Chinese, and Japanese languages are translated cover-to-cover in English for English speaking users.

### **(iii) Tertiary Sources**

Tertiary sources are based on primary and secondary sources of information and serve as key to the primary and secondary sources. Tertiary sources are usually compilation from primary or secondary sources and help the searcher to select required primary or secondary source which will be most relevant for his purpose. These publications do not carry subject information but guide the users to the source where information on that subject will be available. Under tertiary sources of information come publications like 'guide to the literature', 'guides to the reference sources', bibliography of bibliographies, etc. In the order of appearance, first primary sources are published, then based on primary sources, secondary sources are compiled. Tertiary sources are third in the order of appearance and these sources are based on primary as well secondary sources and serve as guide to primary as well secondary sources.

### **(b) Documentary Sources of Information (By Form)**

Based on their physical form, recorded sources can be broadly grouped into:-

- Paper Based Documentary Sources; and
- Documentary Sources on Other Media

### **Paper Based Documentary Sources**

Paper based documentary sources include published as well as unpublished sources. Published sources are those sources which are printed in large number of copies by publishers. These sources are usually priced and meant for public use. Unpublished sources are not printed. Only a few copies are produced which are meant for restricted circulation. Examples of unpublished sources of information include thesis and dissertations, technical reports, manuscripts, etc. These are further described in Lesson 6 of this module.

### **Documentary Sources on Other Media**

As we are aware, recorded sources are available in a wide range of formats, which may be audio, audio-visual, electronic media, optical media or microforms.

- a) Sound or Audio recording: Audio cassettes, Audio tapes, etc.
- b) Visual images Still: Slides; Filmstrips; Transparencies; Photographs.
- c) Visual Images- Moving: Films; Videotapes; Video disks, etc.
- d) Artifacts and Realia: Globes; Relief models, etc.
- e) Electronic Media: Magnetic tapes, Discs, Drum, etc.
- f) Optical Media: CD-ROM, DVD, Blu-ray Disc, etc.
- g) Microforms: Microfilms, microfiche, etc.

Information sources in different formats serve different purposes. Some of them are used as supporting tools for teaching and learning, some for archival purposes and some of them are used as storage devices. Different audio-visual aids, which one can hear as well as see, enhance learning process. It has been observed that on an average you can retain 10 % of what you read, 30 % of what hear and 50% of what you hear as well as see and 90% of what you do. Visual aids such as slides, transparencies, photographs, etc. are very effective in conveying information and message particularly to people who cannot read. Moving visual images like films, video tapes, video discs, etc. are more effective in

information transfer than the still images like photographs, transparencies, slides, etc. CD-ROM (Compact Disc Read Only Memory) and DVD (Digital Versatile Disc) are good storage as well as learning devices. One CD-ROM (12 cm in diameter) can store as many as 325,000 pages of information. You will learn more about these sources in subsequent sections. Microforms contain reduced images of books, maps, charts or photographs. Microforms presently are used for preservation of information contained in old and rare documents. For reading what is stored in microforms, you need a microfilm reader printer, which enlarges the image so that it can be read by naked eye and printed if desired.

**Sound or Audio Recording:** All of us are familiar with audio cassettes and audio tapes we use at home for listening to music. Now to enhance learning many publishers are offering their books in print as well as in other media such as on audio cassettes, CD, MP3-CD, and cassettes. Some websites offer free audio books, which one can download on iPod, MP3 player, and smart phone. (<http://www.booksshouldbefree.com/>)

### **Artifacts and Realia**

Artifacts are hand crafted objects made by human skill or works that are historically and archaeologically interesting, for example a tool, cave painting, etc. 'Realia' is a term used in library science and education to refer to certain real life objects. For example, different types of woods or fabrics or coins or any other object that help in understanding things better are termed 'realia'.

### **Electronic Media**

Electronic media are media that require electronics or electromechanical energy to access the content by the end-user. The primary electronic media sources cover video-recordings, audio recordings, multimedia presentations, CD-ROM, and on-line presentations. Although the term is usually associated with content recorded on storage medium, recordings are not required for some electronic media like live broadcasting and online networking. Any equipment used in electronic communication process (such as television, radio, telephone, desktop computer, video games, console, and handheld devices) also comes under electronic media.

### **Magnetic Storage Media**

Magnetic storage devices store data on surface coated with a magnetic substance. This covers analog as well as digital magnetic storage media. Magnetic media include audio and video recordings which contain reel-to-reel tapes, audiocassette tapes and video tapes which magnetically store sound and pictures. Three common types of magnetic storage devices are tapes, discs and hard drives. Tapes were the first type of magnetic storage media. It is either reel-to-reel or in cartridge form. Tapes are inexpensive type of magnetic storage but they are slow. You must either rewind or advance the tape to access the required data. Tapes now have limited role because magnetic disc has proved to be a superior storage device. Further in discs, data can be accessed directly as opposed to data on tape, which can be accessed only sequentially. Discs like floppy discs transfer small amount of data either between computers or to backup discs. Nearly all computers used to have floppy drive, but they have since been replaced by CDs or DVDs or Blu-ray Disc. Hard drives can store vast amount of data and are called random access device, which means you don't have to search through hard drive to find data before retrieving it.

**Optical Storage Media** Optical media are storage media that hold the content in digital form and the content are written and read by LASER. These media include CD-ROM, DVD Blu-ray Disc and all variations of the first two formats, such as CD-R (Read only), CD-RW (Re-writable), DVD-R, DVD-RW, etc. A DVD has more data storage capacity than a CD and has better sound and picture quality. A CD has storage capacity of about 700 MB where as a DVD can store about 4.5 GB of data. CD-R and DVD-R record data only once and the data become permanent on the disc. Some discs, such as CD-RW and DVD-RW are re-recordable. The data on these discs can be erased and re-recorded a number

of times without damaging the disc. Blu-ray Disc is a high-density optical storage device and can store 25 GB (single layer) to 50 GB (double layer) data on a single disc. Blu-ray Disc is used as a recording medium for video material, such as feature films.

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