Subject: Library and Information Science

Production of Courseware
e-Content for Post Graduate Courses

Paper No : 04 Information Sources, Systems and Services

Module   : 01 Information Sources: Concept, and Need for Information

Development Team

Principal Investigator & Subject Coordinator	Dr. Jagdish Arora, Director INFLIBNET Centre, Gandhinagar
Paper Coordinator	Mrs Renu Arora Former Head, Education and Training, NISCAIR
Content Writer	Mrs Renu Arora Former Head, Education and Training, NISCAIR
Content Reviewer	Dr R K Verma Former Chief Scientist. NISCAIR

Module 1: Information Sources: Concept and Need for Information

I. Objectives

The Objective of this module is:

- Get an overview of the nature, definition and concept of information,
- Understand need for information,
- Identify types of information sources best suited for specific information needs,
- Differentiate between sources and resources of information,
- Know the characteristics of Information Sources,
- Identify documentary and non-documentary sources, and
- List various kinds of information sources.

II. Learning Outcome

After going through this module, you will understand the basic concepts of information, its characteristics, difference between information sources and resources, importance of information services for library users and the need for information systems in our information infrastructure. There has always been a noticeable gap between the produced information, available information and the end users. The modern technologies, especially the computer and the telecommunication technologies have enabled the present day information professionals to bridge this gap and make available library services to all categories of users in a very easy and efficient manner. Several international organizations and systems have also come forward to help close this wide gap by their programmes and activities.

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1. Introduction

Information gets generated in various ways and is recorded in a variety of sources and is made available for use by users. On the other hand, every user requires information for various activities like study, research, problem solving, or entertainment. Kinds of information required by user are defined as current, background, statistical or research type. Useful information is that which is used and which creates value. Experience and research shows that good information has numerous qualities. This information is relevant for a purpose, should be timely, accurate, complete, reliable and targeted to the right person. It has to be communicated in time with right level of details and is communicated by an appropriate channel, i.e., one that is understandable to the user. For this, sources of information are used to communicate information.

In this module, we will study the concept and need for information for users of library and information organisations. Information in its various forms, viz. books, journals, newsletters, databases, reports, etc. is a valuable resource for the society. So much so that it is aptly said that information is the life blood of the modern society. Defining information needs of users is most important aspect of any information organisation. We will also discuss the role of information sources in providing information to users in the desired format.

2. Information

Before defining information, it is essential to understand the distinction between data, information and knowledge. In libraries and information organisations, this distinction is useful and essential as it helps to determine the kind of services to be planned and offered to the users. Also the users' information needs can be identified as they help to build the collection of the information organisations depending on the various required information sources.

Data is raw facts that represent things or events that have happened. Data is observation of facts that are accurate and timely; specific and organized for a purpose, presented within a context that gives it meaning and relevance, and can lead to an increase in understanding and decrease in uncertainty. Data can also arise from direct capture, or as a by-product of another operation and can exist in any form, usable or not as it does not have any meaning. For example, readings from census, survey facts, etc. Data can be numbers, words, letters, images, sound, etc.

Information is a product of data processing and is data that has been given meaning by way of relational connection. It is equivalent to finished goods produced after processing the raw material. The information has a value in decision making as it brings clarity and creates an intelligent human response in the mind. It is knowledge that one derives from facts placed in the right context with the purpose of reducing uncertainty. Information is valuable because it can affect behaviour, a decision, or an outcome.

Data and information deal with facts and figures and knowing what to do with them requires knowledge. Therefore, when information is packaged or used for understanding or doing something, it is known as knowledge. It is thus the appropriate collection of information, such that its intent is to be useful.

Fig.1: Data, Information, and Knowledge

From the above, we can conclude that Data refers to raw values relating to facts, events or transactions. Information is processed data, which has meaning and context. And, Knowledge is the use of information in a context to make decisions. Let us understand this by an example:

Data	Information	Knowledge
100, 50, NH1	A Truck is travelling at 100 KMPH on the NH1.	We apply knowledge that the speed limit on the National Highway is: Car: 90, Bus/Truck: 55 and two Wheelers: 50. We now know that the driver is breaking the speed limit.

2.1 Definition of Information

What is information? There are many definitions of information drawn from various sources. In fact, there are too many formal definitions of information and none has universal acceptability. This is so because the term information is used differently in various contexts by various experts. Several information scientists, just to name a few, viz. N J Belkins, Daniel Bell, B C Brookes, A Debons, Fritz Machlup have given their views on the term 'Information' as used in the discipline of Information Science. These are not discussed here as these are being covered in the paper on 'Knowledge Society'.

However, in the context of information sources, some definitions of information are:

- Information is the act of telling or imparting knowledge.
- Information is facts communicated or learned.
- Information is interpreting data to make it useful.
- Information is knowledge acquired from others.
- Information is all about facts and figures.
- Information is the lifeblood of society of the 21st century.
- Information is power.

Thus information could be any, some or all of the above. However, whatever may be the definition, information is an important ingredient of our lives. It is also said that we are presently living in the information age. Let us understand what this means in practice.The modern society is referred to as the 'Information Society". Information Society is a term for a

society in which the creation, distribution, and manipulation of information has become the most significant economic and cultural activity. An information society may be contrasted with societies in which the economic underpinning is primarily Industrial or Agrarian. The tools of the information society are computers and telecommunications.

2.2 Information Age

In the information society, the information age is affecting our lives in many ways. The Information Age, also commonly known as the 'Computer Age' or 'Information Era', is a concept and an idea that the current age will be characterized by the ability of individuals to transfer information freely, and to have instant access to knowledge that would have been otherwise difficult or impossible to find previously.The information age is changing our daily activities and making tedious tasks run more efficiently. Use of information sources available to users in the desired suitable format, especially electronic sources, is increasing tremendously.

In the information age, we can classifyinformation on the basis of:

- Source
- Nature
- Level
- Time
- Frequency
- Use
- Form
- Type

In the information age, the information professionals are involved in the creation, classification, distribution, and application of information. There is visible teamwork, interconnection and shared information. The technological advances of the 'information age' have made it easier for us to access the desired information from various information sources.

2.3 The Value of Information

It is often said that we are in the information age, and that information is a valuable commodity. But a question arises here that why is information valuable? This is because:

- It allows information organisations to plan how to carry out their activities more effectively. For example, libraries can acquire and stock what their users want, when they want, and can anticipate demands.
- Information activities can be targeted at users that the organisations know could be interested in their products and services.
- This can lead to increased user satisfaction and therefore lead to complete utilization of information resources and sources.

2.4 Characteristics of Information

The parameters of a good quality are difficult to determine for information. Quality of information refers to its fitness for use, or its reliability. The meaning of information quality

lies in how the information is perceived and used by its user. Given below are the essential characteristic features of information that help determining its quality.

a. **Timeliness:** Timeliness means that the desired information must reach the users within the prescribed timeframes. Delay usually destroys the value of information. The characteristic of timeliness, to be effective, should also include up-to-date, i.e., current information.

b. **Accuracy:** Information should be accurate. It means that information should be free from mistakes, errors and have clarity. Accuracy also means that the information is free from bias. Many times, wrong information given to researchers may lead to wrong results in research.

c. **Relevance:** Information is said to be relevant if it answers especially for the recipient what, why, where, when, who and why? In other words, the information professionals should provide users the information which is useful and helps them in their desired activities. Information should be relevant both to the context and to the subject.

d. **Adequacy:** Adequacy means information must be sufficient in quantity. Information needs to be sufficient for the purpose it is generated, but just barely so. There is a lot of information out there in the world and as per users' requirements it is to be decided what material to ignore and what to use. It is an known fact that inadequacy of information leads to crisesbut information overload results in chaos.

e. **Completeness:** The information which is given to a user must be complete and should meet all his needs. Incomplete information may result in chaos and thus may not provide desired outcomes for the users.

f. **Explicitness:** Information issaid to be of good quality if it does not require further analysis by the recipients for carrying out their activities.

g. **Impartiality:** Impartial information contains no bias and has to be collected without any distorted view of the situation.

h. **Worth its cost:** Information is not free. It costs money to develop an information organization, its resources, and to maintain them. For information for be worth its cost, there must be an appropriate relationship between the cost of information and its value to the concerned users.

Some other characteristics of information are:

a. **Form -** This is described in terms of qualitative and quantitative, numerical and graphic, summary and detailed.

b. **Frequency-** This is a measure of how often information is needed, collected or produced.

c. **Breadth-** This defines the scope of information.

d. **Origin -** Information may origin from sources inside the organization or outside.

e. **Time horizon-** Information may be oriented toward the past, toward current event or toward future activities and events.

2.5 Finding and using information

There are too many sources of information and not all information is available in readily available. An attempt to conduct a search to identify all of these sources is likely to demand more time and effort than is practical to devote to this task. Information in all its forms,i.e., documents, books, newsletters, e-mail, databases, reports, images and many more, is a valuable resource in all societies. So much so that it is now said that "quality information is to an organization what healthy blood is to the body".

In order to make available information to users, the modern libraries and information organisations have to develop certain information handling skills. These skills include:

- Defining a user's information needs
- Finding information sources in a variety of media using a range of sources
- Evaluating information in relation to the task in hand using information efficiently
- Referring efficiently and accurately to the available information, and
- Organising and presenting information

The technological advances of the 'information age' have made it far easier for us to access the kinds of information we need in our daily lives.

3. Information Needs

Identifying information needs of users is the most important part of any information related activity. When defining a need for information, there are two useful questions to ask, these are:

Firstly, 'Why is the information needed?' One way of defining the need for information is always the purpose for which user needs information. For example, it may be needed for some academic activity of the users, for taking a particular decision by the user, or may be needed for a personal interest of the user.

Secondly, 'What is already known to the user requiring information?' Considering what is already known to the user, can be a useful starting point as it helps the library professionals to identify the gaps in available information. Prior knowledge of the subject on which information is required is also a sound starting point in this regard.

Users may need different types of information at one time or another. Some of the information needs may relate to:

- News
- Ideas and opinions
- Research results
- Routine information, like railway timetable, phone numbers, maps, etc.
- History or background information
- Fact and figures
- Technical information
- Legal information

In some cases, the required information may be instantly available from existing knowledge. But in other cases, we may have to go elsewhere for information. This necessitates defining the information need.

3.1 Defining Information Need

Information need is defined as a state or process when one perceives that there is a gap between the information and knowledge available to solve a problem and the actual solution of the problem. Information need is different from information competencies as information competencies are defined as the capabilities developed to reach the solution of a problem by searching for new information or knowledge that could fill the perceived gap. While defining a user's information need, answers to the following questions are required:

- How much information is needed?
- How much detail is needed?
- How current the information should be
- Should the information be facts or opinions or both?
- Should the information come from primary or secondary or other sources?
- Should the information come from scholarly sources?

Information need is also defined as the difference between the way information is available and the way that a user would like it to be. The basic idea is thatthere is a perceived, that is, subjective difference between the available knowledge and the knowledge that is needed to perform an activity. The size and type of the difference between available knowledge and knowledge that is required determines the size and type of the information need. In addition, refinements have to be made with regards to use of information, that is, a need for new information to confirm availability of information already available and to elucidate the already available information. The information needs of different groups of people and organizations are determined the same way as those of the individuals when a knowledge and meaning gap is perceived.

3.2 Selecting Information Sources

The best way to begin a search for information is to define a user's information needs. One may need an overview, a comprehensive search of a topic, a quick reference or fact, or an in-depth treatment. Once it is decided what type of information is needed, we can select a source that will likely have the information or plan a search strategy that will include several types of sources. There is a wealth of sources available to help us locate information.

Information can come from anywhere, viz. Books, articles, reference books, web sites, expert opinions, personal experiences, and so on. Knowing what kinds of information is offered by different types of sources helpsto locate relevant information. Further details will be discussed in section 11 of this Module.

3.3 Information Overload

Information overload refers to an excess of incoming information thatforcesonetobeselectiveintheinformationreceivedandretained.With the advent of modern technologies,the ability to create, duplicate and access vast amounts of information has

created information overload for the information organisations and information users. Many experts are of the view that more access to information will not actually help us but will lead to information overload because:

a. Information users will have access to too much information about desired topic(s) that they do not want or need to know about,

b. Information users will be receiving too much information too fast resulting in the fact that it become a liability instead of an asset,

c. Information users will have little control over information as quality becomes dubious at times,

d. When users cannot keep pace with the available information flow, they feel de-skilled, and

e. Technology changes so fast that it quickly becomes obsolete and users cannot afford to change the technologies often.

4. Information Sources and Information Resources

A source is a place or person from which you can obtain something useful or valuable.A resource is something that can be used to perform some function.The sources from where we get information are called information sources and these comprise of documents, humans, institutions as well as mass media like radio and television. Information sources are significant for information organisations and information users. This is because the sources indicate the current development in all fields, avoid duplication in research, give answers for specific queries, help us to understand some unfamiliar terms, provide meaning for terms and indicate broadened view of a subject. Information sources also provide an in-depth treatment of a topic or aspect of a topic and can also provide a broad overview or historical view of a topic. This is so because these sources are prepared after browsing wide variety of knowledge and also examine past studies to predict future trends, etc.

Information sources are different from reference sources. An information source is one which provides us the required information. Whereas, reference sources are to obtain specific types of information which is compiled specifically and designed to provide information in a most convenient form.An information source thus is the source from where we get information. It deals with documents and non-documents. Information sources are also different from information resources.

An information resource is not the same as a resource and is defined as a resource which can convey or describe (essential) characteristics of a resource in some way. The data and information assets of an organization are referred to as information resources. Information and related resources, such as personnel, equipment, and information technology are also information resources of an organisation. Good research involves using a variety of reliable information resources to find out facts and information about a topic.

There are experts who refer to some information sources as information resources. Examples of such information resources are encyclopaedias, books, articles and websites.

Encyclopaedias-Encyclopaedias are great for providing a summary or background information, and they are a reliable source/resource of information, written usually by several experts. There are many print and online encyclopaedias.

Books - Books give us a greater amount and more in-depth information on a topic than an encyclopaedia. They are also a reliable source/resource of information, having been written by credible author(s) who have gone through a publishing process.

Articles - Newspaper, magazine, or journal articles can provide up-to-date information on very specific topics and they are generally a reliable source of information.

Websites -We can find information on almost anything on the Internet, so it can be a great resource, especially when looking for hard to find or very recent information. However, the information found on websites may not be correct or reliable.

5. Characteristics of Information Sources

Information sources have several characteristics, which are:

a. Availability
b. Cost
c. Currency of information
d. Amount of detail, i.e., depth
e. Breadth of coverage
f. Reliability
g. Format
h. Medium

Given below are characteristics of Information sources on the basis of information available in them.

a. Factual or Analytical: Factual information is a statement that can be proved, for example $1 + 1 = 2$. It is also information that will always remain the same no matter where you look it up.

Examples: Reference sources (print or electronic) such as dictionaries, almanacs, atlases, directories.

Analytical information is an interpretation of factual information. It includes interpretations or analyses of facts, often made by experts.

Examples: Books, articles and web pages.

b. Objective or Subjective: Objective information consists of non- judgmental or balanced reporting that presents all sides of a topic, including basic facts.

Examples: Encyclopedias or handbooks. Can be in books, articles or web pages but the source must be carefully evaluated first.

Subjective information means that only one point of view is represented. It expresses opinions or judgments based on individual personal impressions on a topic rather than external facts.

Examples: Books published on basis of individual author(s) experience, research results of viewpoints.

c. Primary or Secondary

Primary information represents information in its original form. It has not been edited, interpreted, evaluated or translated in any manner which might result in a change from the original information. Primary sources can present original thinking and observations, such as original research used to write articles reporting on original scientific studies, experiments or observations.

Examples:

- Novels, plays, lyrics, poems, original works of art
- Diaries, memoirs, autobiographies, speeches
- Government documents, legal documents, patents
- Surveys, polls, statistical data, technical reports, experimental research results

They are created by participants or recorders who experienced the events or conditions being documented. Often these sources are created at the time when the events or conditions are occurring, but primary sources can also include autobiographies, memoirs, and oral histories recorded later. They reflect the individual viewpoint of a participant or observer. Primary sources enable the researcher to get as close as possible to what actually happened during a historical event or time period and can vary by disciplines.

Secondary information is information "removed" in some way from its original form. It represents restatements, interpretations, translations or analyses of information from one or more primary sources. Examples include scholarly or popular books and articles, reference books and textbooks.

Examples:

- Books and textbooks
- Dictionaries and encyclopedias
- Biographies
- Review articles
- Historical studies

5.1 Kinds of Information Sources

Based on the characteristics listed above, we can identify different kinds of information sources that make available desired information. These basically fall in two categories, namely, sources that answer simple queries and sources that answer complex queries.

Sources that answer simple queries carry:

- actual information

- Biographical information
- Statistical information
- Product information
- Patent information
- Maps, images and other geographical information

On the other hand, the sources that answer complex queries, carry:

- Research information
- Professional details and interpretation
- Popular opinion
- People, organisations and company details

6. Types of Information Sources

While conducting user-requirements analysis, it is important to identify the sources of information. For this, we need to select different sources of information in order to gather complete and accurate information. Information sources are usually organized according to their information contents, type, media or form to cater to the different needs of the users. The sources of information are broadly classified into:

- Documentary Sources
- Non-Documentary Sources

All recorded sources of information irrespective of their contents and form come under documentary sources. These may be published or unpublished, in print or in electronic form. Documentary sources can be categorized as primary, secondary and tertiary sources on the basis of appearance of information. In primary sources, information appears first, secondary sources comes out next and tertiary sources are the last to appear. The non-documentary sources of information can be defined as those sources and resources of information that are not contained in any document. The non-documentary sources comprise of formal and informal sources.

7. Documentary Sources

All recorded sources of information irrespective of their contents 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 may be defined loosely as records relating to individuals or groups of individuals that have been generated in the course of their daily lives. This is not to say that documentary sources do not require a structured approach; on the contrary, the use of letters, diaries and the like need a careful methodology in order to extract their relevance for the understanding of society.

The documentary 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 contents. Depending upon their contents and organizational level, these can be grouped into:

- Primary
- Secondary, and
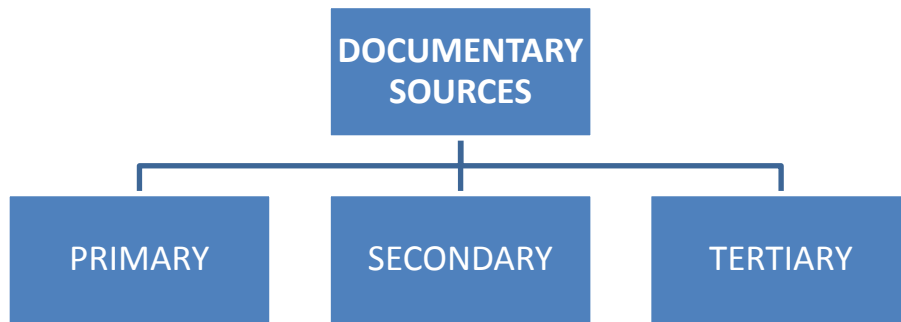- Tertiary sources of information

Fig.2: Documentary Sources

The libraries and information organizations receive different types of questions. Each type of question requires different sources of information. This can be best illustrated with the help of an example. Suppose a researcher is beginning research on a wholly unknown topic. The first step is usually to consult encyclopaedias on the topic. These are examples of 'Tertiary' sources as they provide overview or general explanation in a condensed form on the topic for all kinds of users. The encyclopaedias also have references for further reading. Other tertiary sources can also be used, for example, subject dictionaries give full definitions and meanings of the subject's terminology.

After the general concept of the subject is clear, the next step is to consult various secondary sources to know what has already been written on the topic, at different times and from different points of view, by others on the topic. 'Secondary' sources are thus sources on the topic in question by other researchers, whose work has been based on Primary sources after consultation with the Secondary sources on the topic which had existed at the time.

In view of what existing Secondary sources make available 'Primary sources' are then consulted for further views of the topic under consideration. Here, some may be same as others have already consulted; some may be new not covered by others. This new research then usually identifies new aspects of the topic that have emerged which the others have not consulted or was not of interest to them.

In the above example concerning use of various sources, it can be seen that research is based initially on the analysis of primary sources, guided by the perspectives on the topic which already existed via secondary source and the tertiary sources provide only a general overview on the topic.

8. Non-Documentary Sources

The non-documentary sources of information can be defined as those sources and resources of information that are not contained in any document. The non-documentary source comprises of formal and informal sources. Formal sources include information of research organizations, societies, industries, government departments, universities, consultants, etc. Informal sources include human sources, conversation with colleagues, consultants, experts, resource persons, mass media, etc.

The main categories of non-documentary sources are:

- Institutions or Organizations
- Humans
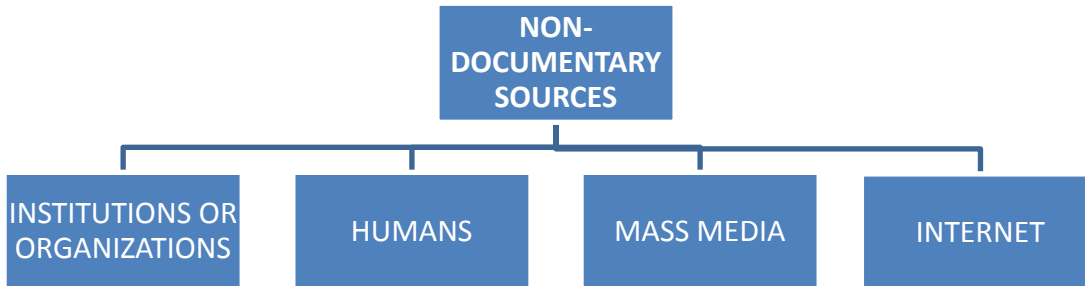- Mass Media other than print media, and
- Internet

Fig.3: Non-Documentary Sources

The organizations as sources of information include academic institutions, government ministries and department, research and developmental organizations, societies, publishing houses, international and national agencies, etc.

The human resources are the experts, consultants, resource persons, extension workers, and even the common human beings.

Mass media refers to any means of public communication that can reach a large audience. Examples of the mass media include - the internet, television and radio. Magazines and newspapers are also deemed to be mass media.

Internet is another very important source of information. Internet is interactive digital media and is different from the traditional media such as print and television. World Wide Web (WWW), also called the Web, is collection of websites on the Internet and offers information on almost all the topics.

9. Electronic Sources

Most of the available Information is traditionally thought of as in print sources, but now with the Internet access, many printed resources are available electronically. Regardless of the fact that information or related contents appear in print or electronic format, it is important that we are able to assess the same without knowing whether it is reliable and authoritative. Electronic materials in the libraries have several advantages over print media:

- Information may be updated easily
- Often up-to-the-minute information
- May be keyword searchable
- May be accessed outside of the library
- Multiple users can look at the same information at the same time
- Easily printed, download, or manipulate information

Managing a collection of electronic information resources is quite different from managing a collection of non-electronic information resources. Unlike a book, computer equipment and networks are needed to access electronic information. Digital format of traditional information sources is available as:

Print Format	Digital Format
Books	eBooks
Periodical articles	Online journals, e-journals
Pamphlets	Web pages
Dissertations and Theses	Full text Databases
Maps	CD-ROMs
Government documents, etc.	DVDs, etc.
Printed Reference Sources	Online in Full text
Library Catalogues	Online Public Access Catalogues

9.1 E-Resources

An e- resource is material which requires computer mediation in order to access its content and make it useful. Both online and offline resources such as online material and CD-ROMs fall within the scope of E-resources. The term e-resource refers to all the products which a library provides through a computer network. The electronic resources are also known as online information resources covering bibliographic databases, electronic reference books, search engines for full text books, and digital collections of data. They include both "born digital" materials which have been produced directly online. For example, e-journals, databases, and print resources which have been scanned and digitized. The electronic resources, e-journals, online databases are not "owned" by the libraries as they own the print material. Ownership of electronic resources lies with the providers of these resources. Access to the electronic resources may be free via Internet or may be available against a fee.

Some of the examples of e- resources are magazines, encyclopaedia, newspapers, journals or articles published in them. These may be accessed on Internet connected devices such as computers, tablets, smart phones, etc.

10. Selecting Information Sources

On basis of information needs of users, as already identified, suitable information sources are to be selected. The table below lists the most important types of sources of information for finding what users usually need for their information requirements.

Kind of Information	Selecting the Information Sources
Biographies	Books, periodicals, encyclopedias, websites
Companies, people, organizations	Directories

Facts	Almanacs, atlases, books, databases, dictionaries, encyclopedias, government documents, handbooks, manuals, newspapers, websites, yearbooks
Graphics/Image-based	Almanacs, atlases, books, databases, websites
Original documents	Bibliographies, books, periodical articles, websites
Popular opinion	Books, periodical articles, newspapers, websites
Product information	Databases, manufacturer and vendor catalogs
Professional commentary	Bibliographies, books, periodical articles, websites, yearbooks
Research	Bibliographies, books, government documents, periodical articles, statistical abstracts
Statistics/Data	Almanacs, atlases, books, databases, statistical abstracts, websites, yearbooks

10.1 Strategies for Identifying Information Sources

Many kinds of information are found in more than one type of source. To help determine which type of source is most likely to contain the information a user requires, the following question are required to be asked.

a. How broad or narrow a focus is needed?

Are we are looking for a broad overview of a topic, or do we need highly specific information that covers a narrow topic in great detail? Encyclopedia articles will give a broad overview of a topic. Books will also give a broad overview of topic but in considerably greater detail, and may summarize the published information on required topic. Journal articles will give information on very specific aspects of the topic. Often we will need a mixture of encyclopedias, books, and periodical articles to find the desired information.

b. What level of information is needed?

Do we need in-depth research by an expert in the field or do we require information written in common terms?If we need in-depth research or technical information, choose scholarly journals. If we need general information on a topic choose an article written for the educated layperson in substantial news or general interest publications such as Scientific American, Science Reporter, National Geographic, etc. Articles in these publications can also provide us with needed background information that will help us to understand the technical language used in scholarly journal articles.

c. How current does the information need to be?

Are we are researching a current event/topic, or is the information we need several years, or even decades, old? Currency can be a deciding factor in identifying the best source for information. We can think of currency as a continuum with different types of information sources falling at different points on the continuum. For example, for one week old information look for websites, newspapers, etc.; for month old information look for monthly journals; 1 year old information can be found in year books, almanacs; and for older information we may look for books, encyclopaedias, annual reviews, etc.

d. Do we need specialised information?

At times we need specialized information such as statistics, maps or diagrams, or addresses for people or the manufacturer of a product. These special kinds of factual information are most often found in atlases, almanacs, yearbooks, directories, catalogs, or government documents. As factual information can change rapidly, we have to pay close attention to the publication dates. Usually the most current editions of these information sources are found in a library's reference department.

e. Do we need primary, secondary or tertiary information?

Sometimes we need information that is only available from the original or primary source. Primary sources include personal experiences, eyewitness accounts, product information, and historical documents. Most of the time, to save time, we use secondary materials. Secondary materials are raw data and primary source materials that have been analyzed and then organized into coherent presentations by someone-usually a researcher. Tertiary information is commentary or opinions about a given topic, based on and quoting primary and secondary sources.

10.2 Information Access Tools

Libraries provide a number of tools to identify specific sources of information. These are referred to as access tools and fall into various categories. The strategies for locating specific information sources vary depending on the access tool needed to find them. The three broad categories of access tool susually used to find the desired information sources are:

- Library Catalogues
- Printed Indexes and Databases
- Web Indexes and Search Engines

Generally we may need to use more than one access tool because well-balanced information activities usually requires information from different kinds of sources. The table below gives the type(s) of access tools required based on the type of information sources needed.

Information Source	Access Tools
Almanacs	Library catalog, web indexes, search engines
Atlases	Library catalog, web indexes, search engines
Bibliographies	Library catalog, web indexes, search engines
Books or book chapters	Library catalog, databases and print indexes, web indexes, search engines
Dictionaries	Library catalog, web indexes, search engines
Directories	Library catalog, web indexes, search engines
Databases	Databases, search engines
Encyclopedias	Library catalog, web indexes, search engines
Government documents	Library catalog, web indexes, search engines
Handbooks	Library catalog, web indexes, search engines
Periodical articles	Print indexes, databases, search engines
Manuals	Library catalog, web indexes, search engines
Newspaper articles	print indexes, databases, search engines
Statistical abstracts	Library catalog, web indexes, search engines
Manufacturer & vendor catalogs	Library catalog, web indexes, search engines
Web sites	Web indexes, search engines
Yearbooks	Library catalog, web indexes, search engines

10.3 Relationship between Information, Information Sources, and Access Tools

Different kinds of information is found in different types of information sources, for example, research related information is most likely found in scholarly journals. Different types of

information sources use different access tools to locate the information source, e.g. journal articles are located by using indexes and databases.
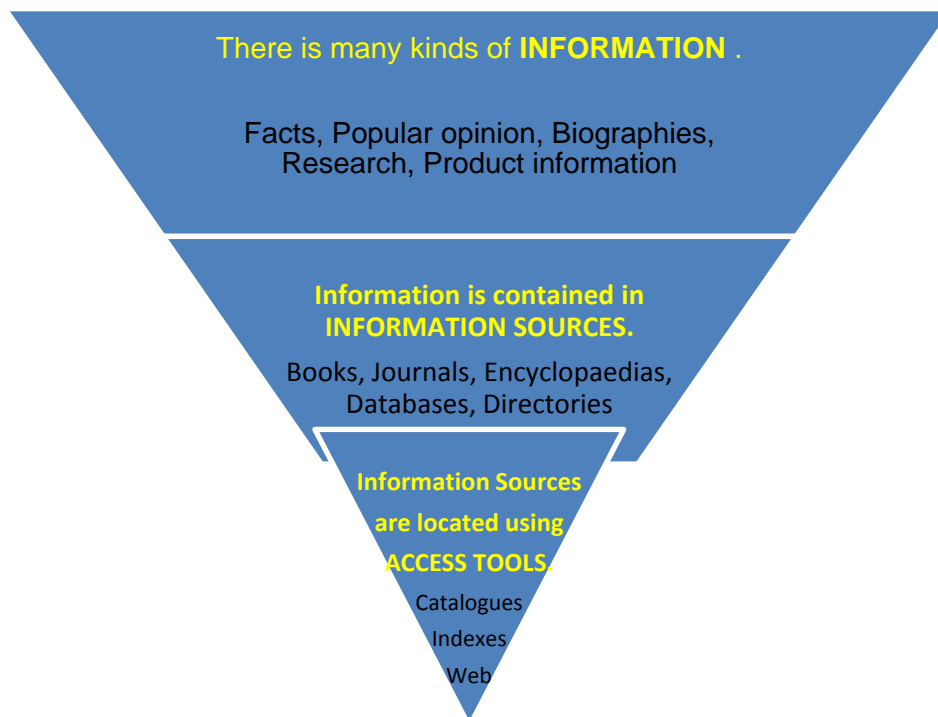

There is many kinds of **INFORMATION** .

Facts, Popular opinion, Biographies, Research, Product information

Information is contained in INFORMATION SOURCES.

Books, Journals, Encyclopaedias, Databases, Directories

Information Sources are located using ACCESS TOOLS.

Catalogues

Indexes

Web

Fig.4: Kinds of Information

The information access tools either directly provides access to the information sources that a user needs or provides information directly to help find a source.

11. Summary

In this Module, we have discussed the nature, definition and concept of information. This leads to identification of information sources that are best suited for specific information need. Information sources are different from reference sources. Many kinds of information are found in more than one type of source. To help determine which type of source is most likely to contain the information some strategies are required to identify the desired information source.Information sources are different from reference sources. An information source is one which provides us the required information. Whereas, reference sources are to obtain specific types of information which is compiled specifically and designed to provide information in a most convenient form.

Information sources are of two types, namely, Documentary Sources and Non-Documentary Sources. All recorded sources are documentary sources. All non-recorded sources are non-documentary sources. Based on the Information content and organizational level, a documentary source may be primary, secondary or tertiary source. Although most of the available Information is traditionally thought of as in print sources, but now with the Internet access, many printed resources are available electronically too.

On basis of information needs of users, as already identified, suitable information sources are to be selected. A list of various kinds of information sources has also been identified. Libraries provide a number of tools to identify specific sources of information. These are referred to as access tools and fall into various categories. The information access tools either directly provide access to the information sources that a user needs or provides information directly to help find a source.

12. References

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