Information and Data-Generating Sources: Implications for Libraries, Authors and Researchers

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Abstract: **This paper highlights information and data-generating sources that could be explored by library users, authors and researchers. It reveals the primary and secondary information sources that aid library users and researchers in their literature search. While primary sources comprises printed or published text-books and pamphlets; serials (newspapers, periodicals, magazines); government documents (text of laws, regulations and treaties, records of government expenditures and finances, statistical compilations); manuscript and archival materials (maps, realia/artifacts, tablets, photographs, sound recordings) etc, secondary data/sources are finding tools such as catalogues, bibliographies, abstracts, indexes, databases, etc. Libraries should stock such primary and secondary sources/ data, while library users, authors and researchers are encouraged to explore them to enhance their research and publication purposes.**

Keywords: **Information, Data-Generating sources, Library users, Authors, Researchers, Primary sources, Secondary sources, Finding tools, Publication.**

1.   INTRODUCTION

The library as agency of information and information services recognizes information as not only central to all human activities but very essential to human survival. Libraries and information centre play the inevitable role of collection, analysis, storage, repackaging and dissemination of knowledge and information which provides access to resources for education and research thereby extending the frontiers of knowledge for man. Kumar (2010) asserted that libraries have been thought of as being expert at collecting and publishing information, adding that responsibilities for storage and retrieval of print and non-print materials traditionally rest with libraries. Librarians as information professional assist policy makers, researchers, curriculum developers to get the right kind of information for their particular needs. It is a truism that some available and accessible information are often unused because they are simply not presented in a content and form that are appropriate for a given group or level of users.

The librarian – developed bibliographic tools has become the basic instrument for control of library collections as well as fundamental finding tool that aids library users and researchers. Ogunsheye, (2002) maintained that libraries, archives, documentation centres and museums are no longer just repositories of man's intellectual products, but, also centre of generation and creation of bibliographic tools – catalogs, bibliographies, indexes, abstracts, schedules and databases. These data generating sources including hi - tech databases are aimed at narrowing down the information/literature search considerably, thereby improving readers access time (RAT).

The strength and quality of service have shifted from the volume of library stock held to the delivery of library-held information to the users. Modern libraries are not only expected to collect and store information materials but also

generate data-tools to enhance quick access to information resources and retrieval. The dual role of the library therefore entails the generation of information sources as well as the generation of data-tools to enhance information/ literature search. Nowadays, emphasis is on generating data (finding tools) to link users with resources rather than custodian of library holdings. The traditional role of the librarian as a custodian of information wares is fast changing to information managers with rapid response capabilities.

Data and information are closely related concepts, but each has its own role in relation to the other. In this context data is created as a link to suitable information for making decisions. To librarians, information has no value until it is extracted for use to those seeking it. The traditional print sources and system of acquisitions, organization and retrieval of information is gradually but steadily giving way to hi-tech information system aimed at enhancing users speed. The librarian- developed bibliographic tools such as catalog cards, abstracts and indexes, bibliographic and reference tools, schedules and databases are the main access point that library users, researchers and authors exploit to maximize their information needs.

However, some pertinent questions that needed to be raised and addressed are:

1. How does libraries and information centre exploit these varieties of information generating sources?

2. What are the data- generating tools that libraries and information centre exploit to improve readers' access time (RAT)?

3. What are the effects of these librarian-developed bibliographic tools, on users, researchers and authors?

4. What are the limitations to information / data generation and storage?

2.   INFORMATION GENERATING SOURCES

Information as defined by Prytherach (1995) is the assemblage of data in comprehensible form capable of communication. This is quiet apt as information must be made up of facts put together in a particular form that can be communicated or distributed. Hoffman's (2000) definition of information as an aggregate (collection or accumulation) of statements or fact or any other mental "mode of operation", interrelated (connected) further buttresses the point. Similarly Aiyepekun (1991) describes information as mankind's accumulated knowledge derived from all subjects in all forms and from sources that could help reduce the level of uncertainty. Deductively information is a data structured to be of value in planning and decision making and as well enhance user access time and as well reduce users' access time by eliminating irrelevant information materials.

 Information generating sources have a multidimensional character as well as multi-subject base. The information generating sources appear in a variety of formats. Four varieties of sources of information are readily recognizable namely:-

1. Documentary sources: Primary, Secondary and Tertiary sources

2. Non-documentary sources

3. Formal

4. Non-formal

For the purpose of clarity, these sources can be classified under two main groups, namely:-

1. Documentary sources or formal sources

2. Non-documentary sources or non-formal sources

Documentary sources or formal sources consist of primary, secondary and tertiary sources.

Primary sources consist largely of the print media; electronic media and information/documentation centres.

i. Print media consist of monographs, books, journals, periodical articles, news magazine, reports, technical bulletins, theses, serials, conference proceedings, patents, standards.

ii. Electronic media: cable satellite, telephone, electronic bill boards, telecommunication, internet, computer networks, CD-Rom.

iii. Information/documentation centres(include both print and electronic):- libraries, archives, museums, radio and TV houses, cable satellites, cyber cafes, ministries, banks, military formations, hospitals, community information centre, monuments, publishing houses, bookshops, bill boards, pictures, road signs/maps.

A Primary source according to Wikipedia is a document, image or artifact that provides evidence about the past. It is an original document created contemporaneously with the event under discussion. A direct quote from such a document is classified as a primary source.

Primary sources enables the researcher to get as close as possible to what actually happened during a historical event or time periods. A primary source reflects the individual viewpoint of a participant or observer. This is supported by Marius (2007). Presnell (2007), in his book "The Information Literate Historian.." corroborated this view where he posited that primary sources provide first-hand testimony or direct evidence concerning a topic under investigation. They are created by witnesses or recorders who experienced the events or conditions being documented. Often these sources can also include autobiographies, memoirs and oral history. Primary sources are characterized by their content, regardless of whether they are available in original format, in microfilm/microfiche, in digital or in published format. Many primary sources are unique and can only be found in one library or manuscript collection in the world. Fortunately, many have also been copied into microfilm, published, reissued translated or in some instances published digitally on the web.

Examples of primary sources include:

-   Books, pamphlets, magazines, periodicals and published newspapers articles

-   Handwritten documents like diaries and journals

-   Maps, Realia, Tablets, Glossaries, Chronicles, Bibliographies, Music

-   Laws and court cases

-   Speeches, interviews, letters

-   Memoirs and autobiographies

-   literary manuscripts

-   Records of organizations

-   Records of government agencies

-   Public opinion polls

-   fiction from a particular time and place

-   Research data

-   Religious "philosophical texts

-   Artifacts of all kinds, physical objects, furniture tools, clothing etc.

-   Photographs, audio recordings, movies and videos

-   Art, including prints and other media.

Libraries do not only acquire and stock these information materials but processes and organizes them to meet information needs of its users.

A secondary source is a work that interprets or analyses an event and phenomenon well after the fact. It is generally at least one step removed from the event. For example reference sources such as specialized encyclopedias like specialized U.S history encyclopedias) and are secondary sources that can help one identify a topic for research, provide an overview of a specific issue and suggest other materials which might be useful for research.

Secondary sources of information are published for achieving the bibliographical control of literature and assisting user in locating primary sources of information. They include the following: - abstract, indexes, bibliographies, biographical sources, geographical sources, catalogues. Other secondary sources includes:- dictionaries, encyclopaedia, directories,

year book and almanacs, maps, handbook, gazetteers, pictures and computer aided data bases as AGRIS by FAO, AGRICOLA by US Department, UK Biosis for Biological Abstracts, CD-Rom etc.
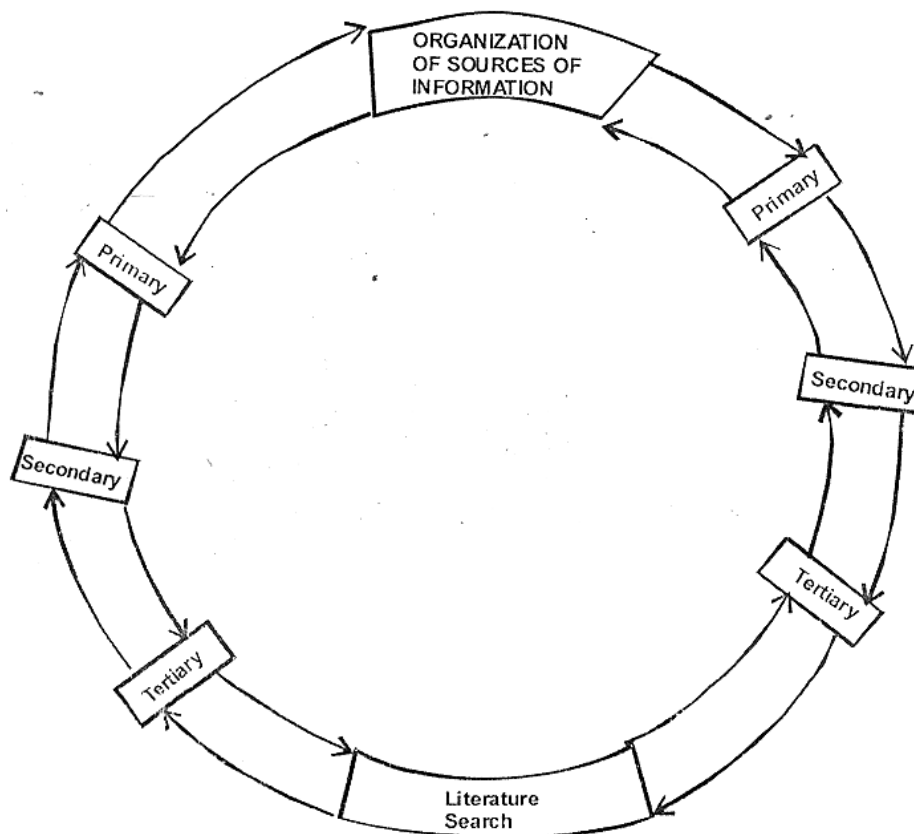
Tertiary sources: due to large number of both primary and secondary documents there exist again tertiary documents to cite both the primary and secondary sources. Some of the tertiary sources are:-

i)   Information sources in Science and Technology (Bharti Pub. Delhi)

ii) Bibliography of bibliographies on India (Concept Pub. Co.; New Delhi)

Non-formal sources of information are those obtained from sources other than documentary sources. The user may be put directly in touch with the source(s) from where to obtain an answer instead of furnishing him/her with documents to extract required information.

The non-documentary/non-formal sources are numerous. They include:- colleagues, professional acquaintances, contacts, observing nature – trees, leafs, sky, rainbow, shadow, signs, demonstration, gesticulation, palms, corridor meeting at conference, scientific attaché and consulates of foreign countries, International Organization e.g. WHO, OECD, UNIDO.
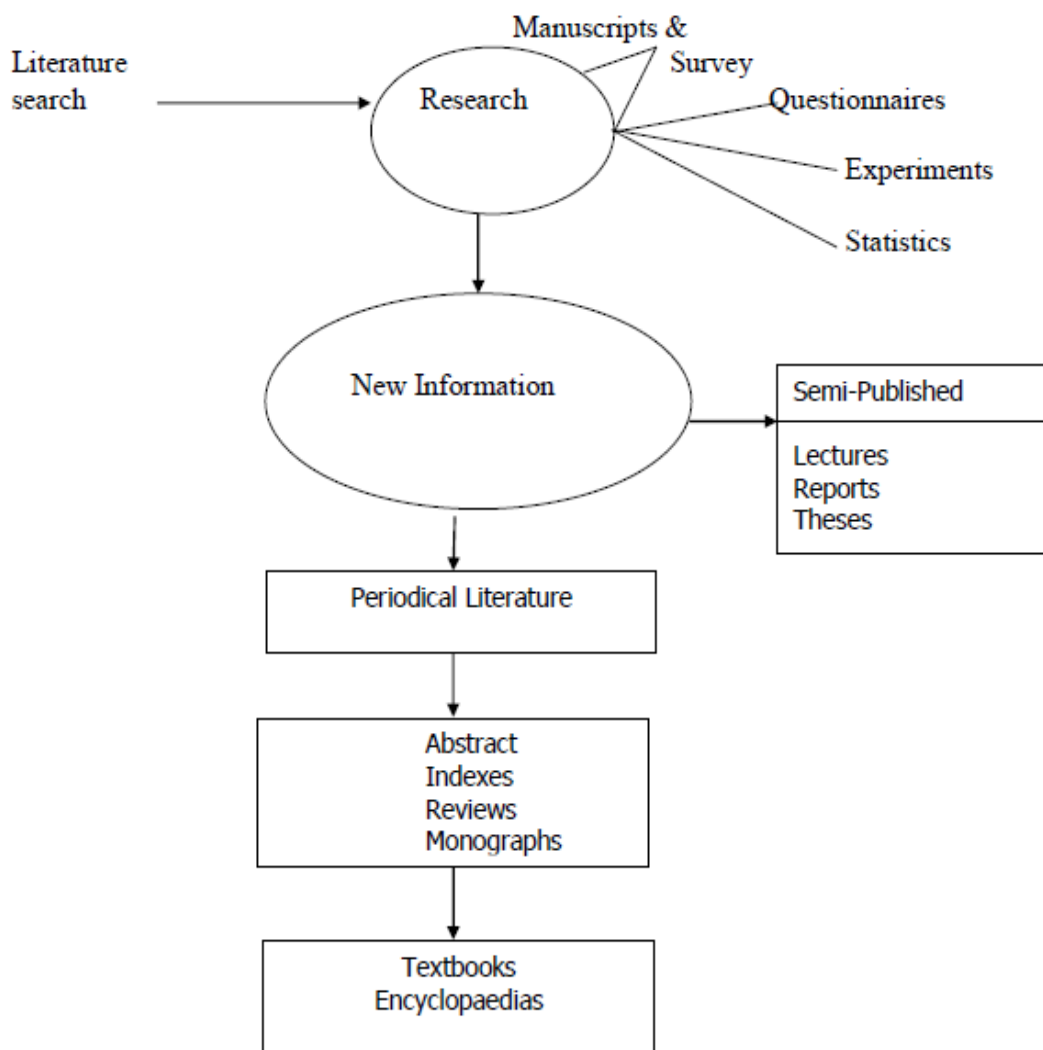
Organization of sources of information

Source: Kawatra, P.S. (2000)

Fig. I: Structure of sources of information

Fig. I, above is a representation of the organization of the various sources of information/data generating sources.

The primary sources which are mainly printed or published texts, -books are kept in the library general circulation and accessed through the catalog which is the secondary source. Others are organized according to their nature and formats and stored at the various sections of the library for maintenance and consultation. Understanding of the primary sources can be further enhanced through the use of tertiary sources such as guides to information sources in science. Literature search acts as the pointer or guide to both primary and secondary sources.

Source: Kawatra, P.S.(2000)

Fig. II: Generation and Publication of Information

In fig. II, above new information can be generated through research. And research begins with literature search and culminates in publication which can be in form of lecture, reports, seminar, theses, dissertations, periodical literature and ultimately a textbook. These sources translate into primary source but further transforms into secondary and tertiary sources depending on age and use. It is an interesting cycle because what determines a primary source can be tricky hence some sources can function as both primary and secondary. In searching literature, various data or information generating sources are consulted such as abstracts, indexes, reviews, monographs, encyclopaedias and textbooks, historical facts ,eye witnesses account, interview schedule, archeological discoveries, amongst others.

The Impact of library to information and data generation:

The library is an important medium of acquisition, processing, storage and dissemination of information as well as generation of information through the human (personnel) agents that work in the library and interact with all classes of users. The library apart from storing, the primary sources, also generates secondary and tertiary sources as resource persons and through its professional skills and competencies, also store, process and disseminate these information to end users. For instance the catalog cards, newspaper/serial indexes, bibliographies and referral services are provided to aid information seekers who patronize the library. In many cases, libraries act as bridge between the use of modern information and communication technology (ICT) and the traditional library services which is based on contact to resources, to overcome the inherent and possible shortfalls of each other. For example, the cable satellite, radio and TV

carry breaking news that is hot and recent. They serve as reliable reference source. Similarly, most informal channels of communication e.g. colleagues, corridor meetings, observation of nature may not be authentic reference source. Again books contain consolidated view of a subject but may not contain recent facts and opinions on contemporary issues. But it is only a well equipped library with adequate manpower that can efficiently combine the various information sources by utilizing the services of ICT and traditional library setting to render efficient services to its users.

Similarly, authors and researchers avail themselves of the primary sources to write books which are in turn secondary sources. For instance books and serial publications can be a rich source of primary source material as in the case of published memoirs, autobiographies articles and published documents. Again through the library stock of primary and secondary sources, authors and researchers identify materials relevant to their work. It is the library's role to package and repackage these information sources in distinct and varying formats for easy access to library users, authors and researchers.

Problems of Data Generation and Storage:

The following issues have constituted problems to information/data generation and storage in Nigeria.

1. Attitude of information professionals to the creations of databases. Many libraries and documentation centres particularly in Nigeria adopt poor attitude towards the generation/creation of databases, indexes, bibliographies, reference sources and other finding tools (secondary information data).

2. Economic factors such as non release or inadequate funding to the libraries may serve as inhibiting factor to databases creation in library and information science and other fields of human endeavour in Nigeria's public life.

3. Databases may exist at the individual libraries through the compilation of card catalogs of books held by that particular library. This serves as bibliographic control to individual libraries which include indexes to periodicals as the case may be. But again individual libraries find it difficult to share this information with sister libraries due to pressure from the host library

i) At the regional level, interlibrary lending and co-operation through shared Union Catalog involving exchange between two or more libraries within the same region does not exist in concrete terms. What exist are informal referral services and consultations in which students of one library may be sent to consult or search the literature of another library in an informal arrangement.

ii) At the National level, the Apex library publishes the National Bibliographic data e.g. NBN, the virtual library. Again this bibliographic control is not comprehensive and timely.

3.   CONCLUSION

The libraries role in acquiring, storage and generating information sources cannot be overemphasized. Its expertise in generating secondary and tertiary data has immensely enhanced access to information materials, thus calumniating in greater satisfaction to information seekers.

This has in turn increased the volumes of publications by authors and researchers and at the same time helped ease access to information by library users. It is therefore believed that hindered or limited access to information would be a thing of the past if libraries, information and documentation centres continue to adopt positive attitude towards information/data generation in order to make information easily accessible to users; and if funds are adequately made available to libraries, information professionals for creation of databases and other secondary/tertiary sources by their funding agencies. Finally the access time of researchers, authors and other library patron would improve tremendously if interlibrary cooperation at regional, national and international levels were encouraged and sponsored by the parent's bodies.

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