

INFORMATION AVAILABILITY AND ACCESSIBILITY; THE CHALLENGE OF THE EMERGING INFORMATION SOCIETY

CLEMENT ENTSUA-MENSAH

*Director, Institute for Scientific & Technological Information
Council for Scientific & Industrial Research, Accra*

ABSTRACT:

Throughout history, any period of intellectual progress has been marked by technical advance which in turn has led to significant growth in information. However, as the application of each technology becomes widespread, the user's ability to deal with information outputs reaches a breakdown point, and new technologies are developed to introduce new levels of control and organisation to improve accessibility to stored knowledge and records. Although there is much talk of information society, it is only when information is available and accessible that we can experience its profound effect on society. The paper examines some of the common storage media on which information is stored and the need to make it more accessible.

INTRODUCTION

A critical examination of the evolutionary processes that have taken place in the field of information generation, dissemination and retrieval clearly shows that there has been some significant technological developments that have led to the growth in information. Gradually, we have moved away from the era where we recorded our heritage on palm-leaf

or animal skin, etc., through the printing era which involved the widespread dissemination of knowledge in the form of books, journals, newsletters, etc. to the computer era where large amounts of information are recorded and stored on compact easy-to-handle devices.

According to De Solla Price, as research became increasingly specialised, and timely dissemination and ease of access became more important, the role of the book changed from being a first report to that of being a formal record of the aggregate knowledge in the field. The journal was introduced in response to the growth, and as the size of the journal literature also grew in turn, the abstracting and indexing journals were introduced to facilitate access to the primary information. With time, it was not possible to comprehensively carry out many searches efficiently as a result of the growth in size of these abstracting and indexing journals [1]. This led to the development of computer-based information retrieval systems and its attendant tools to facilitate easy retrieval.

As the application of each technology became widespread, the user's ability to deal with the information outputs

reached a breakdown point and new technologies were developed to introduce new levels of control and organisation to improve accessibility to stored knowledge and records. The emergence of electronic databases has led to the development of appropriate search tools and intelligent gateways, and even though these tools are functionally powerful, the user is still faced with vast information resource which is difficult to chart, and for which precision rather than recall-oriented tools are necessary [2]. Thus, the global information industry buoyed by the ever-widening horizon of the technological frontier continues to absorb new developments in processing, storage, retrieval and dissemination of information and these are having far-reaching impact on the information environment. Information supply, transfer, and use are now taking place within a constant state of flux and are shaped by the interaction of commercial, economic, technological, and social forces. The technologies have given us a better chance than we have ever had before to shape our future, and now we are witnessing unprecedented overload of information in the form of printed materials, radio, television coverage, and the Internet. Information is generated in immeasurable quantities and it is very difficult to come to terms with what is available, where it is, and whether it is accessible to potential users. For us in the information industry, the greatest challenge facing us today and in future is how to manage the scale and speed of change taking place in the global environment.

THE CHALLENGE

Much has been said and written about what has become known as the information or knowledge-based Society in which capital-intensive industries depends on the production and efficient use of information. Information in all its forms is a basic pre-requisite for the functioning of modern societies, and as society becomes more information intensive the need to improve on the handling skills to make it more accessible becomes more imperative. For, the way we produce, process, and trade in it constitutes the most pervasive change of our time since it has become a key resource and the dominant element for producing wealth. According to Kisil, one of the challenges posed by the developments in the global environment is the concept of universal service and how the "right to communicate" is evolving in the digital world where the basic services required by the citizens are becoming more extensive and complex [3]. Thus, behind the evolving notion of the emerging information society lies the absolute conviction that speedy adoption of digital information infrastructure and the establishment of links with the global information networks would promote a nation's socio-economic development.

Consequently, the dream of most developing countries is to build the requisite infrastructure that will not only serve as the basis to enable them leap-frog into this emerging society, but also, to facilitate the public's universal access to global information networks.

But according to Parks, this whole concept of universal access carries an implicit theoretical assumption that the key to the successful realisation of the information society lies in the adequate provision for the widest public, "access" to information technologies [4].

INFORMATION AVAILABILITY

Today's world relies increasingly on adequate supply and rapid flow of information, and every section of the community, regardless of its location, social condition or level of intellectual achievement do at one time or the other feel a need for accurate, timely and useful information. Although information is transmitted in many ways, it is the publication of various kinds that are still the main vehicle. After all, information is not better, not superior, because it comes out of a computer than if it were present on a printed page, or if another person told it. The problems of quality, accuracy, reliability is just as much present in computerised electronic information services as they are in other format. Quite apart from the print format, information may be available in several formats (e.g. microform or electronic such as magnetic tapes, CD-ROM, floppy disc, online systems, etc.). Notwithstanding the format on which the information may be available, it is the content that is of primary importance and not the technology. The microform, for example, is the generic term used to cover all forms of micro images which may either be transparent or opaque. It refers to all records of human readable documents

that require magnification devices for reading or viewing. It is one of the important media for storing recorded knowledge.

Similarly, the CD-ROM technology, which represents a major strategic thrust for the 1980s and beyond, has proved to be a very good medium for storing, relatively cheaply, large amounts of information. Its high storage capacity, durability, and non-reliance on telecommunications network opened the way to providing electronic information to the large numbers of potential database searchers who had previously been denied access through financial and technical restrictions. It is probably the most widely available and most accessible computerised information system after the Online Public Access Catalogue (OPAC) [5].

As far as information available in electronic formats are concerned, it is the quality and appropriateness that make them valuable and not the technology by which it is delivered no matter how advanced and sophisticated the technology may be. Information available in electronic form may be classified into three categories: factual, reference, and informal information. Factual information refers to data, legislation and standard, scientific and technological, financial and commercial data, etc., which are needed to solve a problem. Reference information refers to the type that do not directly give an answer but points to where an answer could be found, e.g. bibliographic databases listing

publications. The informal is often not thought of as a database and it is not included in formal listings of information source (e.g. electronic mail, bulletin boards, etc.) where individuals and organisation contact each other directly and exchanges information [6].

Although it was the printing press that opened the door for the sharing of information to a much larger reading public, the trend these days is that a growing number of publishers are moving towards preparing collections of information and printed products in computer-readable formats. Consequently, with the advent of computerised information systems the thinking of some people has been that the print media industry would disappear with time. But the truth of the matter is that we should not underestimate the dynamism of such a media since the cost outlay involved in investing in computer-based information systems could be quite prohibitive for most institutions in the developing countries which may want to avail themselves of these developments. In this regard, any improvement to information availability in the country will greatly depend on the efficient manner with which all the stakeholders of the information industry would execute their responsibilities. For example, it is very important for publishers to develop publishing skills as well as efficient distribution networks to match international standards. In the same vein, it is necessary for the government to develop the enabling environment for the private sector to develop effective book trade channels

that will ensure prompt availability of materials to the citizens. Similarly, the libraries, documentation and information centres, etc. should also develop effective policies and procedures for acquiring materials through purchases, gifts and exchanges; etc. to ensure that information is made available to the users.

In all these, the concept of Universal Availability of Publications (UAP) which IFLA enunciated in 1973 and actively supported by UNESCO, that aims at making information as widely available as possible should be made to work. Unfortunately, for Ghana, the major problem that has been identified as militating against the achievement of this objective is the inherent weakness in the country's legal deposit law. It is this law which makes it impossible for the country's libraries to capture all the materials that are produced locally, especially the grey literature. The problem is further compounded simply because the libraries have hardly developed local bibliographic and union catalogues to enable them to determine which materials are available locally. According to Alemna, it is far easier for these libraries to know what is available in libraries outside the country than what is available in the local libraries [7]. The resultant effect is that the country is not able to control its bibliographic output to facilitate easy access to the information contained in these products.

INFORMATION ACCESSIBILITY

This simply means making infor-

mation accessible to those who seek it. Accessibility involves not only physical availability and cost, but also, ensuring that the user can benefit from the services concerned. Studies have shown that people tend to use the source of information most accessible to them even though it has been realised that it might not provide them with the most complete answer. Traditionally, the library relies on bibliographic classification schemes to arrange books on shelves, while the catalogue allows the user to find the required books via a subject or author index. These are some of the several traditional tools that could be relied on to organise and provide access to a library's collection because they give the physical description of the materials and their location. The operative concept here is the provision of effective access to the documents and it is judged within the context of the users ability to satisfy his needs in relatively short time [8]. However, viewed against the background of the developments that have taken place with the introduction of computers in library operations, it has been realised that the access points that the card catalogue provides is woefully inadequate. With computers the way information is organised for retrieval has been greatly enhanced.

An early response to the problem of information overload and increasing complexity of information rich sources was the development of Union Catalogues [9]. These allowed users to search either an integrated catalogue composed of a number of linked databases, or the individual databases.

Thus, access to information was greatly enhanced by the production of union catalogues which listed the stocks of participating libraries. Union catalogues are tried and true methods that have provided effective, efficient and enhanced service to library users, and are based on library catalogues. They have tight authority and subject controls, which greatly aid retrieval. Although they have traditionally been successful in integrating print sources, efforts are being made to include electronic sources in line with developments in electronic publishing.

Essentially, there are two ways through which one can obtain information electronically and these may either be through the use of ones own computer system locally or through online services. In the case of the former, access to information could be in the form of magnetic media as computer diskettes or optical media such as CD-ROM. Libraries are now becoming more electronically based and are now accessible from remote location through networks. It is through the use of network technologies that are accelerating the development towards new forms of information and knowledge distribution. Online services allow users to obtain information through a host of systems. In fact, Online Public Access Catalogues (OPAC's) have been the major developments that have brought the benefit of automation directly to the user by making accessible to them the library stocks. However, one major drawback of this form of access is the reliance on telecommunication network, and in situations where

countries have problems with their telecommunication systems, then accessibility to information is greatly denied. This has been compounded in recent times with the advent of the Internet technology that has brought about some major changes in the communication patterns of users. According to Lyons, the widespread availability of global information systems like the internet carries with it the promise for the generation and sharing of information at a degree of complexity and persuasiveness that are unimaginable until recently. Information is posted on the NET that would otherwise only be available to a restricted group, if its existence were known at all. The major advantage of the Internet is the possibility to access and disseminate information and share research facilities more quickly on a large scale and in a more interactive way [10].

Admittedly, the major key to the Internet's rapid growth has been the free and open access to information that the available tools provide. For example, the Telnet is commonly used to access a wide variety of publicly accessible services such as library catalogues, Campus Wide Information Systems and other databases, while the Listserve and the Electronic mail provide alternative and sometimes more effective means of information distribution through electronic conferencing [11]. One significant effect of this is that researchers can now access information resources from all over the world without entering the library. This development has even led to a situation in the USA where at the

California State University, the administrators drew up plans for their new campus without including a library building. According to the Chancellor, Barry Munitz, the money for the library building could be spent on technology for getting information via computer [12]. Well, it is these developments that could be devastating for the library as an information provider unless it gets actively involved in the changing reality. In the opinion of Perryman, libraries can work to prevent this from happening by:

- a) Strengthening and expanding the traditional values of co-operation and resource sharing;
- b) Providing access to new and developing formats, and
- c) Developing a common vision of the future of information technology [13].

CONCLUSION

Throughout history, any period of intellectual progress has been marked by technical advance, and it has been widely recognised that the invention of the printing press opened the doors for the sharing of information to a much wider reading public [13]. The coming of the age of radio and television made it possible for ideas and printed text to be widely shared in a more dynamic form. Although there is much talk of information society, it is only by developing the use of information that we can expect to experience its profound effect on the nature of the society. As to whether humanity will benefit from these

opportunities this will greatly depend not only on transfer of technology, but also, on enhancing human capability to ensure the best use of the information technologies. For, it is only when these conditions have been satisfied that the emerging information society would attain its ultimate goal of empowering the citizens through access to, and use of knowledge. In this regard, the concern of information professionals should be to ensure that they provide effective access to information since most people are denied access, all because, either they cannot afford it or that, the information is only available in formats they cannot use. The technologies certainly offer attractive solutions to the problems, but if these solutions were outside the reach of those who are supposed to benefit, then the likely consequences would be complete alienation of the very people they are supposed to assist meet their information needs.

The unfortunate situation is that in most developing countries the mechanisms for providing these information infrastructures have been developed and earmarked for the major urban market. Therefore, the question that needs to be answered is how to provide access to information to people in the rural communities. A simple answer to this question is that in countries where there are rural and community libraries these could be developed into tele-centres and serve as information access points to the wider communities. The staff manning these tele-centres should be familiar with the information technologies and sources to enable them to be in a

position to teach the people how to make use of these resources.

REFERENCE

- 1) De Solla Price, D.J. Little science, big science. Columbia University Press. New York. 1963.
- 2) Catenazzi, N. and Gibb, F. (1995). The publishing process: the hyper-book approach. *Journal of Information Science*. 21(3), p101-172.
- 3) Kisil, M. (1997). Information age: Less developed countries and the challenges in the relationships between producers and users of information. *Quarterly Bulletin of International Association of Agricultural Information Specialists*. XLII(3/4), p115-127.
- 4) Park, S.G. (1997). "Disarticulations" in the information society. Barriers to the universal access to information highways in developing countries. *International Information & Library Review* 29, p.189-199.
- 5) Batterbee, C. and Nicholas, D. (1995). CD-ROMs in public libraries, a survey. *Aslib Proceedings*. 47(3), p.62-69.
- 6) Bawden, D. (1992). Electronic delivery of information. *Aslib Proceedings*. 44(4), p.161-164.
- 7) Alemna, A.A. (1997). Removing barriers to library development in Ghana. *Ghana Library Journal*. 9, p.11-16.
- 8) Entsua-Mensah, C. (1989). The card catalogue: Is it an effective retrieval tool for present day information work? *Ghana Library Journal*. 7, p.42-47.
- 9) Brittain, J.M. and Colmer, M. (1998). Access to information: New direction. *International Journal of Information Management*. 18(2), p.81-90.
- 10) Lyons, P. (1997). Managing access to digital information: some basic terminology issues. *International Information and Library Revision* Vol. 29, 1997, p.205-213.
- 11) van der Walt, P.W. and van Brakel, P.A. (1995). Access methods to electronic journals via the internet. *South African Journal of Library and Information Science*. 63(2), p.56-64.
- 12) Hafner, K. (1995). Wiring the ivory tower. *Newsweek*, February 6, p.44-46.
- 13) Perryman, W.R. (1991). The changing landscape of information access: The impact of technological advances upon the acqui-

C. Entsua-Mensah

sition, ownership and dissemination of information resources within the research

library community. *Journal of Library Administration*. 15(1/2), p73-93.