Factors Affecting Access to Electronic Information and Their Implications

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INTRODUCTION

Information is a key ingredient in everyday life of the individual and the society at large.

Information has become increasingly more important with the emergence of information society. Information and knowledge are key resources, and generation and communication of these is the mainstay of the workforce in the emerging information society. Because of the value that information has in the day-to-day life and development of human beings, the right to information is held as a basic right of individuals in many countries. Information and knowledge exist in oral, print, and electronic forms.

However, information and knowledge have little value unless they are accessed when needed in a form they are needed. If access to existing information does not take place, the potential benefits of possessing of information will be lost. In other words, the key to unleashing the benefits of information and knowledge is effective access to them. As such access to information is recognized to be an instrument to help citizens to realize their own potential; to increase their skills, knowledge and capacity; and to take part in and benefit from information society (FARN, 2001). Scientific progress also depends upon the accessibility of existing scientific knowledge upon which new knowledge is built.

BACKGROUND

As the importance of access to information is directly equated to the value of information, access to information is also recognized as a fundamental human right of citizens in many countries. The right to access to information is now expressed in policies, laws, acts, and regulations of many countries. Universal declaration of human rights also has provisions for the implementation of the right to access to information. Social institutions such as libraries, archives, schools in broader sense, and the mass media have been considered as instruments to preserve and facilitate access to information and knowledge.

The emergence and expansion of information in a digital form in particular has heralded, among others, faster and broader access to information in general. Efforts to benefit from the digital revolution are now among priority concerns of many countries, both developed and developing country. Access to electronic information essentially involves access to electronic technologies (the channel and prerequisite), access to electronic information sources (the container), and access to the content (the actual data, information and knowledge). However, access to electronic information is not always possible to all.

This article looks into the various factors that affect access to electronic information as well as the nature of their effects. Review of relevant research literature has been used to identify the factors affecting access to electronic information. The article further discusses the implications of the factors by taking the least developed countries (LDCs) as a good example since these countries are the most affected countries by the factors. Possible measures to address the effects of the factors are also presented in the conclusion part of the article.

FACTORS AFFECTING ACCESS TO ELECTRONIC INFORMATION

Despite its importance, a significant number of people do not have as much access to the electronic information as required. The literature (more than 70 research reports and articles have been reviewed in preparing this article, of which most are also reviewed in Gashaw, 2002; Rice, McCreadie, & Chang, 2001) on factors influencing access to and use of IR systems, digital libraries, e-journals, and the Internet has consistently shown the existence and prevalence of a set of factors affecting access to electronic information. These factors can be organized under the following four categories: the characteristics of the end-users, the characteristics of the electronic information carriers, the characteristics of the electronic content, and the characteristics of the information environment in which access takes place. These are described below.

1. **Characteristics of the End-Users:** This refers to the qualities and capabilities that end-users bring to

information access process, including one's computing skills; experience in using electronic information resources and information; domain knowledge; language abilities; digital literacy (including attitude towards information, information seeking, and information use); beliefs about the capability, ease of use, and usefulness of information, information systems, and the Internet; perception about one's skills and knowledge; and financial ability to acquire electronic resources and training. Specific instances of the characteristics of the end-user hindering access to electronic information include the following: lack of experience in using information systems, networks, the Internet and electronic information; non-awareness of the resources available and ones rights and duties in utilizing the electronic resources; lack of confidence in one's ability; lack of knowledge of the language in which digital documents are available; and lack of interest and motivation in using electronic information systems and information

2. **Characteristics of the Electronic Information Carriers:** This refers to the features of the electronic information technologies and the electronic information sources, including the capabilities of the computing and network hardware, software, interface, and the Internet connection; ease of use of these resources; and physical accessibility (as access assumes availability) of the computing and network resources and electronic information sources. Specific instances of the characteristics of the electronic information carriers hindering access to electronic information include the following: physical non-availability of appropriate computing/network hardware and electronic information sources; insufficient capacity of computing/network hardware and software; physical non-availability of network/Internet connection; low capacity of network/Internet connection; physical inaccessibility of electronic information sources; and difficult to use interfaces

3. **Characteristics of the Content:** This refers to features of the content such as relevance (on the topic); type (text, graphics, audio, video); format (PDF, Word, PostScript, HTML); language (International languages such as English, local languages); form (full text, abstract, abstract and keywords, summaries); quality of content (accuracy, reliability, breadth, depth, trustworthiness); level of treatment of subject; organization (searchable, indexed); and file size that in one form or another affect access to the content. Specific instances of the characteristics of the content hindering access to electronic information include the following:

physical non-availability of relevant content (topical) to the basic and immediate needs of end-users; physical inaccessibility of relevant content to the basic and immediate needs of end-users; poor presentation (delivery) of content; and poor quality of content (in terms of accuracy, reliability, breadth, depth, trustworthiness)

4. **Characteristics of the Overall Information Environment:** This refers to information-related features of the physical environment in which access to electronic information takes place, including information policy and regulations, general infrastructure of the country/organization, information culture of the country/organization, technical and other system support, overall economic level of the country, and cost of electronic information resources. Specific instances of the characteristics of the information environment hindering access to electronic information include the following: absence of supportive information policies and regulations; absence of personnel/technical support; high cost of electronic information technologies, information sources, and content; poor general infrastructure of the country; under-developed information culture of the country/organization; and prohibiting cultural and social norms to access all relevant content and carry out all useful information activities

From the above it can be observed that the factors affecting access to electronic information are constraints to accessing the electronic technologies, information sources and the content caused by the characteristics of the user, the characteristics of the electronic information carriers, the characteristics of the electronic content, and the characteristics of the environment.

Furthermore, access to electronic information is hindered when there is mismatch among the factors previously discussed. More specifically the following mismatches result in failure in accessing electronic information:

- Mismatch between the characteristics of the end-user and the characteristics of the electronic information carriers. For example, if the level of computing skills of the end-user does not match the skills requirements of or ease of use of the electronic information system, then access to information is affected negatively
- Mismatch between the characteristics of the end-user and that of the content. For example, if the end-user does not know the language in which the content is written, then access to information cannot take place
- Mismatch between the characteristics of the end-users and that of the overall information environ-

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