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Information Technology Integrated to Library and Research

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Introduction: - We are living in the 21st century. The contemporary world is changing very fast. The change is noticed in all spheres of life-society, polity and economy. Since the end of the Second World War science and technology advanced unexpectedly. The cold War period compelled many nations to become competitors of the Superpowers. Growth of population forced the world to exploit our exhaustible and unproducible natural resources in order to get more consumer goods for human welfare. Hence it became necessary to expand the stocks of natural resources taking the help of science and technology which in turn created many problems in the environment. At this stage, information has been considered as one of the important components of production along with research activities in the field of science and technology as well as in different areas of social science. During this period, we have also noticed the information explosion along with population explosion. The advancement of science and technology through research also increased the volume of information every day. Under this condition, effective information management became imperative in order to achieve a 'Brave New World'. 'Industrial Revolution' the name first given by Friedrich Engels in 1844 to describe the radical change that took place in Britain during 1730- 1850 to transform a mainly agricultural into one predominantly industrial one, has brought us into the age of information Technology (IT). The IT is now a buzzword for all. it become a part of our life also. I would try in the paper to understand; (a) how we, librarians or information organisers, look at the IT; (b) integration of IT with the traditional library and information system and; (c) role of IT in research activities in major disciplines and particularly in Indian situation.

1. Information Technology (IT): As we understand:

Information Technology (IT) is collective term for the various technologies involved in processing and transmitting information. They include computer, telecommunications and microelectronics. Technological development during 1970 and 1980's, such as very large-scale integration, satellite and optical-based communication methods, have been responsible for enormous scientific and commercial growth in this area. IT is all pervasive. There is hardly any activity of academic, economic and social importance which is not influenced by IT.

For a Library or information Centre, IT has a much wider connotation. Library is basically an information-based organisation. Its primary objective is to cater information to a wide- range of users –right from an eminent scientist to a common man, even to an illiterate citizen of a country like us. The library as an information institution stuck to its mission from the dawn of civilisation with the help of various technologies such as hammer, chisel, stylus. Pen, moveable type, printing –press, telephone, photocopying machine, microfilm etc. But from the middle of twentieth century the libraries faced with a greater challenge when the growth of science and technology became enormous, education was spread even among the backward colonial people very quickly and as a

consequence the need for information and its use was increasing rapidly. Naturally, the libraries were looking for adopting new technologies which could help them to meet the challenge in a meaningful way. Here came the IT and the libraries had no hesitation to adopt it not only to organise, preserve and disseminate information of all types but also cater them to their clientele quickly, comprehensively, accurately and above all satisfactorily.

2. How IT is integrated:

It is true that all are not well with IT. In order to adopt IT in a meaningful way we have to consider the following factors: (a) Affordability (cost element); (b) Capacity (training and skill) (c) Relevance (local condition and language); (d) Integration (acceptable in daily routine); (e) Socio-cultural Factors (based on gender, race etc.); (f) Trust (relating to privacy, security, or cybercrime); (g) Legal Framework (laws and regulation is limiting the use or not); (h) Political Will (role of government and public support).

In recent time, IT has raised certain issues which are very much concerned with the developing countries. Questions are often asked whether IT is bringing a 'digital divide' within the world. We may argue for and against this very pertinent question since information must be available to all irrespective of rich/poor, or South/North. Whatever may be the problem, it should be resolved in such a manner that IT can be shared by all in order to establish an ideal 'Information Society' and a 'Knowledge Society' in the future.

However, it is evident that efforts are being made from various forums to take the advantage of IT for social development and the signs are also noticeable that even our neighbouring country of Bangladesh, which is not very large, is also introducing IT in many areas of economic and academic activities.

Since our present concern is with the integration of IT in a library situation we may safely say that some headway have already been made in this direction and results are also visible to some extent, even if they have not yet fulfilled our expectations. But attempts are being made to achieve the desired goal.

3. IT and Research:

Library is a social institution supporting the academic activities of the concerned society in a very big way. There are many academic institutions in our country which are carrying on research activities in various fields within and outside the university campuses. Each of this institution is supported by a specialised library. The major function of these libraries is to provide information to their students as well as researchers. The information services organised by the library for the researchers are again very specialised since the researchers' information need is also not very stereotyped.

So long we have tried with many methods, tools, equipment etc. for improving the information systems for the researchers. We thought of documentation, indexing, abstracting, CAS, SDI, resource sharing, bibliographic support in various forms. But we cannot say that we were fully satisfied with the devices we used or adopted in order to give information support to researchers.

If we try to find out the reasons behind that we should remember the objective of research work, which is according to The Hutchinson Encyclopaedia, 2000 ed.

Research [is] the primary activity in science, and combination of theory and experimentation directed towards finding scientific explanation of phenomena. It is commonly classified into two types: pure research involving theories with little apparent relevance to human concerns; and applied research, concerned with finding solutions to problems of social importance—for instance in medicine and

engineering. The two types are linked in that theories developed from pure research may eventually be found to be of great value to society.

We know that information is a major input of research work along with mental faculty. But the question is: (a) What information and (b) How information? We have already mentioned that the devices we adopted so far in a library situation were not fully satisfactory. Let us find out why that situation prevailed. I have found the answer in an article by Patricia Batt in entitled 'The Electronic Library: a Vision for the Future' published in the EDUCOM Bulletin, Summer, 1984. Here the author of the article states:

Scholars want what they want when they want it whether or not they know what it is they want. In the past the university has sought to serve this fundamental need by maintaining bibliographically controlled archival collections of the printed record. Since scholarly needs are not well defined in advance, a particularly essential contribution has been the development of bibliographical control system with logical hierarchical linkages, standards, and compatibilities to insure open-ended access to the universe of knowledge. In contrast, scholarly applications of technology to date generally have focused on highly specific disciplinary concerns, and tended to emphasize the capacities of the technology for a discrete avenue of research or the processing of unique data rather than the broader requirements of the scholarly community at large.

We can conclude from the experiences of Patricia Batt in that browsing of 'bibliographic bundles' by the researchers themselves for finding out relevant data and information is successfully possible through 'Internet', the latest unimaginable achievement of IT. We can only amuse ourselves remembering the 'open access system' of a library where the user could get an opportunity to resolve his/her dilemma "... whether or not they know what it is they want".

Now we can think of "an electronic library which is no longer restricted to the physical dimensions of the reading rooms. Computer networks can bring a vast amount of information resources on the network to the users at home or at work and allow many electronic libraries to be accessed at the same time." (Chowdhury, G. G. and Chowdhury, S. Datta: 'Digital Libraries: will the Traditional Libraries Disappear?' in Goon, A.M. and others eds. Politics, Culture and Society: Collection of Essays in Memory of S.M. Ganguly, Kolkata, New Age Publishers, 2005).

Conclusion: - We have now reached at a stage where 'digital library', 'electronic library', 'virtual library', 'paperless library' (of late the term has been declared obsolete by its exponent Professor Lancaster) are attempting to replace (?) the traditional library. Whether in reality it would be possible or not, is yet to be seen. But considering the present situation in our country we may conclude that IT cannot be ignored by the libraries of our country. At least the specialised academic libraries should have to integrate the IT within themselves. But for the remaining library world, in our country, we have to have a 'hybrid library system' – which is a combination of traditional library with IT.

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