



## Information and communication Technology Enabled Library and Information Services

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### KEYWORDS

#### Introduction

Developments in ICT have made significant impact on all spheres of human life. The impact has been rather prominent in case of service activities such as banking, health, transportation, education and libraries. Benefits of use of ICT in services can be broadly explained in terms of 4 Es, namely **economy, ease, extension (or expansion) and efficiency.**

For the Libraries, ICT's has tremendously changed the Management of Resources or House Keeping Operations as well as the way services are delivered. While general IT application tools and Integrated Library Management Systems are largely used in housekeeping operations, like acquisition, cataloguing, circulation control, serials control etc; Internet has been used extensively as a resource as well as a tool to deliver the Library and Information Services (LIS). In this lesson we will study how ICT has had impact on delivery of LIS.

In the specific context of LIS, one of the implications of use of ICT is that Libraries can reach out globally to provide their services 24-hours a day in very cost effective manner. ICT has enabled users to avail many services without any human intervention, the role of the role of LIS professional is changing from an intermediary to a facilitator and enabler. In this Unit we have grouped the ICT enabled services into two categories as follow:

1. ICT enabled conventional LIS, that can be delivered more efficiently through use of ICT, and
2. New Services, which have been made possible due to developments in ICT.

#### ICT ENABLED CONVENTIONAL LIS

##### ONLINE PUBLIC ACCESS CATALOGUE AND USER SERVICES

Library catalogue is perhaps the most important tool for locating material in the Library. Unfortunately until recently its value has been restricted by its physical form, most commonly a large card catalogue or a set of printed volumes. The advent of computers, with their ability to process large amounts of information and output in a variety of formats has finally brought the library to the customer, wherever he or she may be located, in the form of Online Public Access Catalogue (OPAC).

OPAC provides access to the catalogue through a computer terminal. OPAC allows searching the entire catalogue online, conveniently and quickly, using one or more search criteria. OPAC either on a printer or on a file. An OPAC terminal should be equipped with search software, which is usually part of integrated library management systems such as *LibSys, EasyLib, NewGenLib, SOUL, Sanjay* etc. Some integrated library management packages even use OPAC for other user services like reservation, membership enquiry and registration, interlibrary loans etc.

#### INFORMATION SERVICES

Some of the important changes that developments in ICT have brought about in information services are:

1. Changes in formats, contents and methods of production & delivery of information products, and a new business model

for use of information products. This requires procedural and infrastructural changes and cost implications in Libraries.

2. Emergence of Internet as the largest repository of information and knowledge.
3. Extinction or significant transformation of some of the conventional information services such as press clippings, contents pages, company information etc.
4. Use of new tools and technologies for dissemination of information.
5. Transformation of role of LIS professional as the subject specialist and end-user gets directly involved in the information work and consequent need for new skills.
6. Shift from physical to virtual services that offer convenience of time and location for access to services.

In the following paragraphs we will now briefly discuss a few types of information services viz. Reference service, Bibliographic Service, and Current Awareness Service in ICT enabled environment. Some new information services are described later.

#### Reference Service:

Asynchronous tools such as email, subject gateways, FAQs, and electronic libraries and interactive tools like chat rooms, virtual reference desk, and ask-me are replacing the conventional means of post, phone or in-person reference enquiries. *Ask-a-Librarian* allows the user to click on *ask-a-librarian* link to send a formatted enquiry to the reference librarian. The reference librarian either provides an answer, links to resources or link to a subject expert. Interactive tools now allow a reference interview online.

#### Bibliographic Service:

Compilation of bibliographies, reading lists and state-of-art reports are very parts of LIS work, particularly in research and academic libraries. Browsing through the manual indexes and abstracts is a tedious and time consuming work, and does not always produce up to date result. Availability of databases in electronic form on CDROM or online, offers convenient, efficient and cost effective information retrieval. Electronic databases also provide unique search features such as searching on multiple criteria (key-word, subject, author, source, classification code, year of publication, language etc.), and variety of display formats & styles. Advance features like natural language query ranking the search results in also available in many databases.

#### DOCUMENT DELIVERY

ICT has made the document delivery services very simple and reliable. From searching the holdings to ordering and delivery have been benefited by the use of ICT. A large number of libraries now host their up to date holdings on their website and can be searched on internet. Many library networks such as *INFLIBNET* and *DELNET* maintain union catalogue of their member's journal holdings. One such document delivery service provider *British Library Document Supply Service (BLDSC)* offers a flexible system of receiving orders and tracking. BLDSC's email based document supply system *Artmail* allows registered users to send requests through a formatted email that automatically is processed by *BLDSC's* system, which generates location of the sources. The documents can be received in print as well as electronic format. Online and

web based database services such as *STN* provides link to document delivery services of their own or a third party. Some of the commercial document delivery services are *Ingenta* (<http://www.ingenta.com/>), and *BioMedNet*, *OCLC* ([www.oclc.org/](http://www.oclc.org/)) and *Science Direct* (<http://www.science-direct.com>).

#### INTER-LIBRARY LOANS AND UNION CATALOGUES

*RedLightGreen*. (<http://www.redlightgreen.com/>) is one of the world's largest web based union catalogues. It contains about 130 million records from 160 member libraries of *Research Libraries Group (RLG) in USA*. In India, bodies like *INFLIBNET*, *DELNET* are also developing union catalogues of books, serials and theses.

#### ICT BASED NEW SERVICES

##### INTERNET ACCESS

Internet is not only a medium for digital communication but also the world's largest repository of information. However, under developed internet infrastructure in a country like India, poses a serious challenge to growth of ICT enabled services. Large segment of user groups may still be deprived of personal access to internet facility. Libraries, therefore, provide free or controlled access to internet and email. Depending upon the availability users can be given time slots for use of internet facility. Usually a few internet enabled terminals are provided in the library that can be used by the visitors for internet access and email etc.

#### ACCESS TO WEB BASED RESOURCES

##### E-Journals:

Many publishers of electronic journals offer their journals through consortia of libraries at much lower rates. *INDEST (Indian Digital Library of Engineering, Science and Technology)*, and *INFLIBNET* are two such consortia operating in India. Access to articles in electronic journals can also be made through aggregator services which offer searchable databases of contents of e-journals from several publishers, and links to journal site for full text. *Emerald*, *OCLC* and *J-Gate* are some of the example of e-journal aggregator services.

##### E-Books:

E-Book has been described as a text analogous to a book that is in digital form to be displayed on a computer screen. E-books can be read just like a paper book, using dedicated E-Book reader such as *GemStar eBook* or on a computer screen after downloading it. There are also some newer technologies developing such as electronic paper, which is much like paper, except that the text can be changed, and talking books in MP3 format. E-book offer advantages like portability, 24 hours access, text search, annotation, linking, and multimedia and self-publishing possibilities. Development of e-book is still in the infancy stage and issues like compatibility, e-book readers, availability and intellectual property rights are to be addressed before it can be implemented on large scale.

##### Patents:

Many patent issuing authorities now have made their complete full text patent records online. For example United States patent documents can be searched and downloaded free of cost from ([www.uspto.gov/patft/index.html](http://www.uspto.gov/patft/index.html)). Some of the commercial organizations such as *Derwent* also provide downloading of full text patent from either an online database vendor (e.g. *Dialog*, *STN*) or directly from their site to the subscribers

##### Course Material:

This can be done by providing links to the courseware sites through subject gateways or provide local access after downloading the material. Some of the important sites where web based course material and tools can be found are *Ask ERIC* (<http://eric.syr.edu/>), *CAREO-Campus Alberta Repository of Educational Objects Alexandria* (<http://www.careo.org>), *LESTER-Learning Science & Technology Repository* (<http://lester.rice.edu/>), *MERLOT-Multimedia Educational Resources for Learning and Online Teaching* (<http://www.merlot.org/>), and *GEM- The Gateway to Educational Materials* (<http://www.thegateway.org/>).

#### SUBJECT GATEWAYS

Preparing subject guides or path finders has been an intellectual activity for reference librarians. Such guides are normally prepared in consultation with the subject experts or by a subject librarian, who picks up the sources after careful evaluation. Random surfing of the Internet may be a popular pastime, but is an inefficient use of bandwidth and time. One of the most useful ways to discover quality resources in a particular subject area is use of subject-based Internet gateways and directories.

#### DIGITAL LIBRARY AND ARCHIVES

The main benefit of digital library is the ability to provide 24-hour, remote access to high-demand or restricted materials for multiple concurrent users. Setting up a digital library can either be done using 'off-the-shelf' digital library products, document management products or library management products capable of digital library management; or in-house system development using open archives software. Some of the off-the-shelf products are from *Blue Angel Technologies*, *CONTENTdm*, *Crossnet Systems Ltd*, *Endeavor Information Systems*, *Epixtech*, *ESP*, *Ex Libris*, *Fretwell-Downing Informatics*, *IBM*, *Sirsi*, and *SydneyPlus*. *Greenstone* (<http://www.greenstone.org>) is a leading open source digital library management software.

#### Conclusion

Benefits of use of ICT in services can be broadly explained in terms of 4 Es, namely **economy, ease, extension (or expansion) and efficiency**. ICT enabled LIS can be grouped into two categories, ICT enabled conventional LIS, and new services. OPAC and Web OPAC use power of computers to find the library material and also provide many additional benefits such as online reservation of books, remote access, requesting books for loan, loan renewals, books suggestions etc. Impact of ICT on information services is characterized by changes in format, contents and methods of production & delivery of information products, emergence of Internet as largest repository of information and knowledge, changed role of LIS professional from intermediary to facilitator, new tools for dissemination of information, shift from physical to virtual service environment, and extinction of some conventional information services and emergence of new and innovative web based LIS.

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