ICT APPLICATIONS IN LIBRARY AND INFORMATION CENTRE

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Abstract

In the age of 21ˢᵗ century library changes tremendously, various services are added and changes appear in lots of services provide by library previously due to incorporation of Information and Communication Technology (ICT) in the field of library. In this paper I discuss about various applications like RFID, Shodhaganga, various softwares and others which are useful to library and information centre. With the help of these application library provide services to their users effectively and efficient the result of which users can achieve their target.

Introduction :

IT stands for "Information Technology," and is pronounced "I.T." It refers to anything related to computing technology, such as networking, hardware, software, the Internet, or the people that work with these technologies. Many universities and colleges now have IT departments for managing the computers, networks, and other technical areas of their educational system. IT jobs include computer programming, network administration, computer engineering, Web development, technical support, and many other related occupations. Since we live in the "information age," information technology has become a part of our everyday lives. That means the term "IT," already highly overused, is here to stay.

According to different people the **definition of information technology** may change but its basic idea will remain the same. It is about how you can manage your information in a compact form by the use of software's as well as hardware.

The universities all over the world are under increasingpressure to employ the Information Technology (IT) for the welfare of facultymembers, students, operational staff and management. The different stakeholdersof a university like students, parents, employees, management, and administratorsare continuously engaged in the process of educational planning, growth and otheractivities. The modern age of educational scenario has lead to the growth in data asthe quantity ofinformation and data collected and processed for the planning andmanagement ofeducational activities has been constantly increasing. In order toprovide variousfacilities to thestudents, faculty, management and for theoperation, the

universityneeds storage and computing system thatwould integratemultiple services andconcerned request.

Advantages of Information Technology:

 ➢ True globalization has come about only via this automated system;

 ➢ The creation of one interdependent system helps us to share information and end linguistic barriers across the continents;

 ➢ The technology has not only made communication cheaper, but also possible much quicker and 24x7;

 ➢ Computerized processes have made many educational institutions turn to the Internet for increased productivity, clutter free working conditions and global identification;

 ➢ This has greatly reduced prejudice and increased sensitivity

 ➢ dedicated educational applications and strategic planning for enhanced effective service provide to students and staff for educational institutions;

 ➢ Automated processes that require little or no human intervention at all;

 ➢ This in turn has minimized job stress levels at the work place and eliminated repetition of tasks, loss due to human error;

 ➢ The sophistication of the modern work stations and general working conditions is possible.

Why is Information Technology Important:

 • Administration of entire systems.

 • Production and manipulation of sensitive information.

 • Cultural development and communication.

 • Streamlining of educational system processes and timely up gradation.

Components of IT

IT is a broad term that covers wide range of technologies. It is the convergence of computers, communication and microelectronic-based techniques. The technologies and devices like Radio, Telephone, Telegraph, Fax, TV, Telephone, Mobile phone, Internet, WWW, Email, LAN, ISDN, Videoconference and Satellite communication Techniques are major part of the ICT. With the help of LAN, INETERNET easily shares the information. Telephone and another devices play important role in library services like SDI, Inter library loan, reference services, and online information retrieval. ISDN has increased the capacity for

data transmission which facilitated introduction of new services such as E-mail, Fax etc. Cheaper data storage media has increased the storage capacity of libraries.
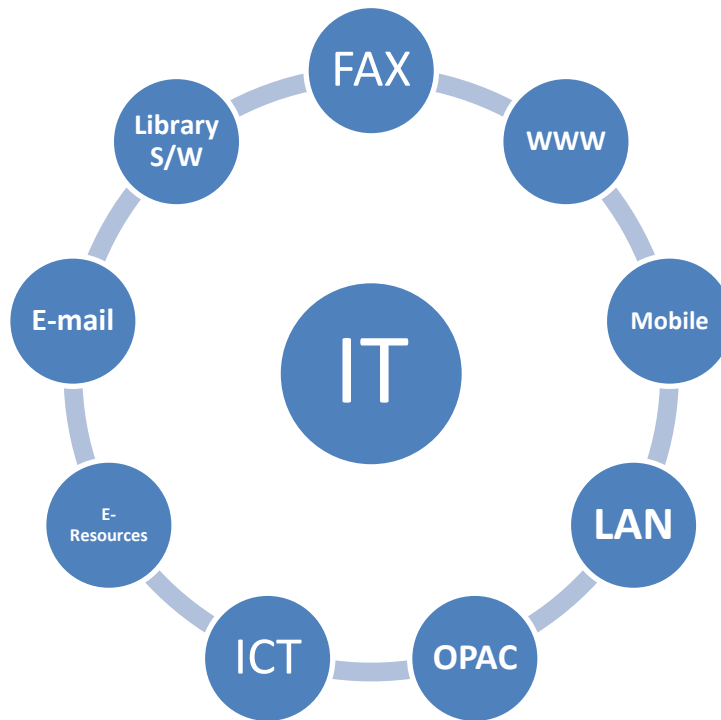

Fig.1 Components and Devices of IT for Library Services

Applications of ICT Used in Library & Information Science Centre

Now aday's various new trends are arrived in ICT, using these trends we can provide effective and efficient services to our students and teachers,which can change the dimensions of future library Services. Some of these are given bellow.

RFID Technology in Library

The concept of RFID (**R**adio **F**requency **ID**entification) technology was developed in 1948 but it has had to wait fifty years before it has been able to deliver on its original promise. An RFID tag typically comprises a micro-chip and an antenna. The whole device (including the chip) is packaged as a paper-thin adhesive label which may come in a variety of shapes and sizes appropriate to the labeling of books, videos, DVDs and CDs etc. This RFID tag can be applied to library resources in various ways to improve both stock management and security. RFID machinery interrogate the tags by radio – in a similar way (but at a different frequency) to the way in which PC wireless networks operate. This equipment may simply read the tag to identify the item, or it may add or change data on the tag attached to the item. This equipment can also read the security element which may be in

the tag and this can be used to trigger an alarm when the item is moved near to a sensor such as security gates in a library.

Benefits of RFID in Library

- Self-service/Self-issue/Self-return can be made using RFID

- Levels of use appear to be more heavily influenced by the library's commitment to self-service rather than by the actual devices used.

- Automated returns sorters can identify items by collection, status or other SIP-defined categories and deliver them to shelf location as required.

- In addition, self-service may be deployed to provide out of hours service, or to facilitate lending at unstaffed locations.

- Taking inventory. In many libraries the annual stock-take has all too frequently been abandoned but with RFID technology libraries have found that stock taking becomes a task that may be carried out far more frequently. As RFID technology improves in accuracy and reading range, stock-taking may becomes a simple walk through the shelves.

- Finding lost and missing items and identifying mis-shelved stock.

- Identifying particular items e.g. for display or relocation.

- As circulation is made by self staff may be redeployed to more pro-active activities, such as reader advisor, delivering both an improved service for the clients and greater job satisfaction for staff.

As more operations are automated the number of staff required to manage them may also be reduced

Cloud Computing

The cloud computing is considered as fifth generation of computing with reference to mainframe, personal computer, client server computing, and the web. In essence , cloud computing is a construct that allow you to access applications that actually reside at a location other than your computer or other Internet connected device; most often, this will be a distant datacenter. It allows the viewers like student, faculties and staffs to use applications and access the information from any computer with internet access. The National Institute of Standards and Technology (NIST) defines cloud computing as a model for enabling on demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management efforts or service provider

interaction. Cloud computing is a general term for anything that involves delivering hosted service over the Internet. The beauty of loud computing lies in the fact that, other company hosts your application and they can handle the costs of servers and manage the software updates, and on the basis of the contract one will pay less for services.

The above types of services are already popular in small and medium sized businesses and same can be implemented in universities. The universities need not to maintain the storage servers for its data generated at various sections, including laboratories. Here, the storage is rented from the provider using cost-per gigabyte stored or cost–per-data-transferred model. The university administration needs not to pay for infrastructure; they simply pay for how much they transfer and save on the provider's servers. The storage service provider manages the complexities of backup, replication, and disaster recovery needs, hence the stakeholders need not to worry even if some file is deleted accidentally. The university data stored with service provider becomes a windfall when the universities are effected due to natural calamities like flood, earthquakes etc. Back up stored locally doesn't help if there is fire or hurricane to clean the university, hence cloud storage allow university to protect their data.

Shodhaganga : INFLIBNET

Theses and dissertations are known to be the rich and unique source of information, often the only source for research work that does not find its way into various publication channels. Doctoral dissertations are manifestation of result of four to five years of intense work involving huge investment of resources, both mental and physical and infrastructure and other support from the universities. A thesis reflects quality of research work conducted by a student and the ability of an institution to lead and support original work of research in a given discipline.

The Shodhganga sponsored by INFLIBNET provides a platform for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the ability to capture, index, store, disseminate and preserve ETDs submitted by the researchers.

As per the UGC Regulation on M.Phil/Ph.D, the responsibility of hosting, maintaining and making the digital repository of Indian Electronic Theses and Dissertation (Shodhganga) accessible to all institutions and universities is assigned to the INFLIBNET Centre.

Shodhaganga having more than 2700 thesis. The search can be done through University or department wise, Issue date, Researchers or guide, title and keywords type

Electronic Journals

Electronic journals, also known as *ejournals*, *e-journals*, and *electronic serials*, are scholarly journals or intellectual magazines that can be accessed via electronic transmission. In practice, this means that they are usually published on the Web. They are a specialized form of electronic document. They have the purpose of providing material for academic research and study, and they are formatted approximately like journal articles in traditional printed journals. Being in electronic form, articles sometimes contain metadata that can be entered into specialized databases, such as DOAJ or OACI, as well as the databases and search-engines for the academic discipline concerned.

Some electronic journals are online-only journals; some are online versions of printed journals, and some consist of the online equivalent of a printed journal, but with additional online-only (sometimes video and interactive media) material.

Most commercial journals are subscription-based, or allow pay-per-view access. Many universities subscribe in bulk to packages of electronic journals, so as to provide access to them to their students and faculty. It is generally also possible for individuals to purchase an annual subscription to a journal, via the original publisher.

An increasing number of journals are now available as online open access journals, requiring no subscription and offering free full-text articles and reviews to all. Individual articles from electronic journals will also be found online for free in an ad-hoc manner: in working paper archives; on personal homepages; and in the collections held in institutional repositories and subject repositories. Some commercial journals do find ways to offer free materials. They may offer their initial issue or issues free, and then charge thereafter. Some

give away their book reviews section for free. Others offer the first few pages of each article for free.

Most electronic journals are published in HTML and/or PDF formats, but some are available in only one of the two formats. A small minority publish in DOC, and a few are starting to add MP3 audio. Some early electronic journals were first published in ASCII text, and some informally published ones continue in that format. Now a day's most of the publisher published their journals paper format as well as electronically. All electronic journals are paid, the freely available electronic journals can be brows on Directory of Open Access Journals on www.doaj.org.

Library Software

Library software is a type of software that allows users to keep an organized catalog of media. These catalogs may include books, files, music, videos, images, software, or collections of information. Library software often includes tools that allow the user to organize and search through their catalogs and may be used for a wide variety of applications. It is user-friendly software developed to work under client-server environment. While designing this software, the international standards, bibliographic formats, networking protocols, and typical functions of all types and sizes of libraries, particularly at academic level, have to be consider.

Required Features of Library Software

➢ Windows based user-friendly software.

➢ Well-designed screens, logically arranged functions with extensive help.

➢ It should be based on client server architecture allowing scalability to the users.

➢ It should be used strong Database Management System.

➢ It should not require long term training.

➢ It is should be capable of handling large number of records.

➢ Supports internationally known standards.

➢ Provides export and import facility.

➢ Incorporates all required features to work in a networked environment i.e.. LAN and WAN.

➢ OPAC should be user-friendly with all options in-built.

➢ OPAC is accessible over the web using any GUI based browsers.

➢ Provides comprehensive list of reports, master databases and authority files.

➢ Provides facility to create, view and print records in regional languages.

➢ Available at affordable cost.

Optical Character Reader (OCR)

It allows to scan printed, typewritten or hand written text (numerals, letters or symbols) and/or convert scanned image to a computer processable format, either in the form of a plain text or a word document or an excel spread sheet, which can be edited, used or reused in other documents. "A system that provides a full alphanumeric recognition of printed or handwritten characters at electronic speed by simply scanning the documents that called OCR."

Features of OCR

➢ It is a program which has recognition capabilities of characters.

➢ The technology provides a complete form processing and documents capture solution.

➢ OCR is used when recreating a document in electronic form takes more time

➢ The converted text files take less space than the original image file and can be indexed

➢ Bridges the gap between the paperless and the papered. Advantages of OCR

➢ Savings in costs and efficiencies by not having the paper.

➢ Scanning and recognition allowed efficient management and planning for the rest of the processing workload.

➢ Reduced long term storage requirements, questionnaires could be destroyed after the initial scanning, recognition and repair.

➢ Quick retrieval for editing and reprocessing.

➢ Minimizes errors associated with physical handling of the documents.

Digital Object Identifier (DOI)

It is an open standard for creating an alphanumeric name that identifies digital content, mostly scholarly contents such a e-book or journal article.

• A DOI is a unique ID number for a document is paired with the object's electronic address, or URL (updatable), along with other metadata "The DOI is like the Bar Code, but for objects on the Internet."

Features of DOI

• Applies to any type or format of object like text, music, film, video, photographs, software, and database record.

• Applies at any level of specificity :whole book/individual chapters, music

• Compatible with every other numbering scheme (UPC, ISBN, ISSN)

• Permanent (Once assigned, never changes. "A DOI is Forever.")

• It protect to copyright.

• A central directory provides a level of indirection between the ID and its locations or services

Biometric Attendance System

We all of us aware with this machine which can be used in attendance system using your finger print. This machine maintains your IN/OUT entries in offices and other places like shops, malls. This machine can be useful in student attendance in colleges and school also.

Future Movie Watching

We all of us know that graphical and visuals teaching process made more impact than traditional teaching, and it creates more interest in teaching process. We can easily illustrated to students what we want to teach them using graphical and visual method, flowingis the new trends in watching movies and videos which Connects (wireless) to any video source – PC, DVD, TV and so forth.
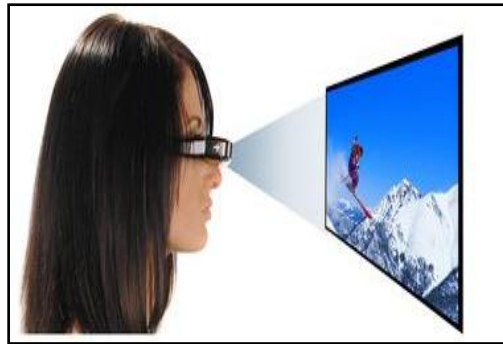
Global Positioning System with the help of Cell Phone

This new technology can be used in driving; using this technology we can get directions and position of any part of the world. This device can connect to your children and provides his/her location when they are out of home.

Conclusion

In the age of Information, the new Information Technology made a tremendous impact on us, the life of human kind is easier and workload is reduced very much. IT equipments are more and more used by any library in day to day life for better service to their students and staff as well as for good quality of work.

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