INDIAN JOURNAL OF LIBRARY AND INFORMATION SCIENCE

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Contents

Digital Library Environment in Indian Research Institutions

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Abstract

This paper mainly describes various aspects of digital library development and different types of reference services being provided in digital environment which include: (i) personalized services (ii) web-based reference and information services (iii) search engine services (iv) digital reference services for general public as well as academic community (v) co-operative digital library service. This paper highlights present scenario of digital library services in India. It outlines the initiatives taken by the UGC, India the INFLIBNET Centre, DELNET, IITs, RECs , National Research Organizations/ institutions of India in the digitization of libraries and information centers in order to provide digital library services. Further it suggests that in a developing country like India where resources are limited, funds are inadequate the library and information professionals should develop their skill and proficiency to meet the challenges of technological developments and changes emerging out of digital library services.

Introduction

The digital library is an electronic or virtual library where information is selected, acquired, processed, organized, stored and retrieved in digital form. The developed countries have already digitized their libraries. The developing countries are in the process of digitization of their libraries. The users of digital libraries are the universal users who should have facility to access to all created and acquired digital sources of information in the form of electronic text, image, map, sound, video and multimedia. Thus the digital libraries are attributed to electronic databases and capable of handling large data and servicing users effectively in resource sharing environment.

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Digital library infrastructure

A digital library has certain technological requirements such as:

I.   Locally developed database

II. Local library system with adequate personal computers having LAN and CD-ROM Drives.

III. Electronic mail service

IV. Network connection to have access to other data bases

V.   Various functions to coordinate manage the entry and retrieve data.

VI. Multimedia Kit

VII. Well trained manpower

VIII. Computer Hardware with Audio-Visuals, Video Conferencing Kit, Pentium Web Server, Laser Printer, Scanner, Barcode Scanner, Barcode Printer, Digital graphic printer and UPS.

IX. Software and its accessories.

Digital Library Projects

Digital Library of India

The Indian Institute of Science (IISc), Carnegie Mellon University (CMU), the International Institute of Information Technology, Hyderabad (IIITH), and many other academic, religious, and government organizations in India, a total of more than twenty "Content Creation Centers," have become partners in the Digital Library of India (DLI). The DLI seeks to preserve Indian heritage that is contained in books, manuscripts, art, and music. Each centre brings its own unique collection. This digital library is also a test-bed for Indian language research. The DLI is a leader in worldwide efforts to make knowledge free. A pilot project to scan some 10,000 books was initiated at CMU and then followed up at IISc, IIIT-H, and other organizations. All the processes involved have been perfected. The vision is to preserve all the knowledge of the human race in digital form and make that content search-

able, independent of language and location, and to ensure that the cultural heritage of countries like India is not lost during the transition from paper to bits and bytes, as they were lost during a former transition of cultural content from palm leaves to paper.

So far, more than 289,000 books have been scanned, of which nearly 170,000 are in Indian languages. More than 84,000 books (25 million pages) are available on the DLI web site at the Indian Institute of science and more than 149,000 books (43 million pages) are available on the DLI web site at the International Institute of Information Technology. The link to other partner sites is also provided through a commonly accessible website.

Funding for the DLI comes from multiple sources. The Office of the Principal Scientific Advisor to the Government of India is funding the project at the Indian Institute of Science. The Ministry of Communication and Information Technology (MCIT) is funding the project at various DLI partner centers. The National Science Foundation (USA) is providing funding for scanners and software research and development through Carnegie Mellon University. The First Citizen of India, His Excellency Dr APJ Abdul Kalam, President, who himself is one of the contributors to this vision, has personally taken a keen interest in making the Rashtrapathi Bhavan one of the major centres of the DLI.

Access to e-journals: Indian scenario

University libraries

In the 21st century access to information and knowledge is a critical determinant of the success and sustain ability of a nation. It is a challenge to access the new information and communication technologies amidst the lack of basic infrastructure and facilities. According to a survey conducted by the University Grants Commission in India in the year 2001,142 university libraries are equipped with computers and internet facilities and they are interlinked within the INFLIBNET. But the libraries having internet access do not all necessarily subscribe to electronic journals primarily due to enormous fees for access. The allocated yearly budget is utilized mainly to subscribe to the printed journals and to sustain the subscriptions without cutting down essential journals. Due to this, many uni-

versity libraries feel that the transformed electronic format is a burden for them and even if considered to be a necessary not a need they can satisfy probably a consortium model which facilities the sharing of resources without requiring additional fees to access the electronic journals, will be an ideal solution, but is such a solution feasible? Will the publishers encourage such as a library friendly budget idea.

Electronic Theses and Dissertation Project of INFLIBNET Centre

INLIBNET hosts a bibliographic database 200,000 dissertations from about two hundred Indian universities going back to 1905. The Repository uses D-Space, which complies with the Open Archives Initiative (OAI) framework allowing publications to be easily indexed and searched by web search engines and other indexing services.

V. V. Giri National Labor Institute

The Archives of Indian Labour were created by the V.V. Giri National Labour Institute and the Association of Indian Labour Historians (AILH). The archive preserves documents, builds collections, and initiates research in labour history. The collections include documents from different organizations. Documents from labour movements are included, as well as personal accounts and memories of labour leaders and workers. The archive uses Greenstone, an open-source digital library system, to integrate text, audio, and video

Indian Institute of Astrophysics

The Indian Institute of Astrophysics has its origins in the Madras Observatory, which was created in the late 18 th century. Today the Institute is a national research centre for physics and astronomy. Its repository includes dissertations from researchers associated with the Institute, as well as papers from the Bulletin of the Astronomical Society India beginning with volume 1 (1973), journal articles, and conference papers. Archival materials from the 18th, 19th, and 20th centuries have recently been added. These materials are manuscripts, photographs, annual reports, instruments and their descriptions. The repository uses D-Space.

Raman Research Institute

The Raman Research Institute Digital Reposi-

tory allows the Institute community to deposit pre-prints, post-prints, and other publications and organizes these publications for retrieval. It also contains the annual reports of Institute and newspaper clippings from its archives. The Repository uses D-Space.

National Chemical Laboratory

National Chemical Laboratory is an interdisciplinary research centre focusing on polymer science, organic chemistry, catalysis, materials chemistry, chemical engineering, biochemical sciences, and process development. It partners with industry, and some 400 graduate students are pursuing doctoral degrees. About 50 Ph.D. degrees are awarded each year. The institute has the second largest number of papers in chemical sciences (ca. 430), files the largest number of patents, both in India (60) and abroad (60) and produces the largest number of PhDs in chemical sciences in India. The repository uses D-Space. There are currently 500 theses, project reports, and journal articles available.

National Institute of Oceanography

The digital repository of the National Institute of Oceanography collects and preserves institutional publications (journal articles, conference proceedings, technical reports, theses, dissertations, etc). Some of the completed and ongoing projects are:

- Marine boundary layer characteristics during a cyclonic storm over the Bay of Bengal
- Variation of wave directional spread parameters along the Indian coast
- Study of Goa and its environment from space: A report on coastal sand dune ecosystems of Goa: Significance, uses and anthropogenic impacts
- The coastal regulation zone of Goa: Oceanographic, environmental and societal perspectives
- Marine pollution detection through biomarkers in marine bivalves. The repository uses D-Space.

Indian Institute of Technology, New Delhi.

Digital library initiatives began in 1998 with an upgrade to a faster Internet connection. The high-speed Internet connection led to a number of digitized collections. IITs receive grants from government bodies such as AICTE (All India Council of Technical Education) and the Ministry of Human Resources Development and Management (MHRD) to develop digital libraries. Online courseware has been developed and older volumes of journals have been digitized, among other projects. More than 500 dissertations are available in the repository. The campus has facilities for submitting material to the repository. More than 25,000 pages of journals were scanned and are available on the Institute intranet.

Indian Institute of Technology, Kharagpur

The Central Library, IIT Kharagpur, created an electronic library in 1994, which is now called a digital library. Older documents have been digitized, and it has large number of electronic resources such as Ei-Tech index, Compendex, IEEE / IEE journals in full text, INSPEC, Current Contents, Chemical Abstracts, Biotechnology Abstracts, Agricultural Abstracts, Library and Information Science Abstracts, ASTM standards and ABI. The institutional repository collects, preserves, and disseminates research output. At present, access is restricted to the IIT Kharagpur campus LAN only and submission of documents to this repository is also limited to the IIT Kharagpur research community. The repository uses D-Space.

Indian Institute of Science, Bangalore

The Institute uses e-Prints, an institutional repository of research output. The archive is maintained by the National Center for Science Information (NCSI) and it supports self-archiving in various file formats (PDF, Word, html, etc.) Around 5,000 articles are available.

Indian Institute of Technology, Bombay

The repository has bibliographic information and abstract for dissertations beginning in 1965. The master's thesis database has bibliographic information and abstract from 1999 on. More than 3,000 full text theses and Dissertations are available in the ETD database. The repository uses Greenstone, open source software, which complies with the Open Archives Initiative (OAI) protocol.

Indian Institute of Management, Kozhikode

The IIM-K institutional repository uses GNU E-Prints software, which was developed at the

University of Southampton. The community can archive preprints, post prints, and other scholarly publications. Anyone can access the archive, but submission of documents is limited to the IIMK research community. At present around 200 full-text documents are available in the repository.

National Institute of Technology, Calicut

"Nalanda" was initiated in 1999 and is one of the largest digital libraries in the country. It serves the campus with research and other academic information in science, engineering, and technology. The software used was developed by the institute itself. Nalanda is accessible from anywhere on campus. The repository contains theses and dissertations, course materials, articles, and annual reports.

National Institute of Technology, Rourkela

Formerly known as Regional Engineering Col-

lege (REC), this is one of the premier institutions for technical education in the country. NIT is a joint undertaking of Government of India and Government of Orissa. This Institutional Repository uses D-Space. At present around 343 documents are available in the repository.

Librarian's Digital Library

This repository is at the Documentation Research Training Centre, Indian Statistical Institute, Bangalore. It is aimed at librarians worldwide, and uses D-Space. It contains articles, theses and dissertations, presentations, multi-lingual documents, photographs, etc.

The INDEST-AICTE consortium also encourages open access through institutional repositories to its member institutions as given the table.

Table1: Open archives Initiatives in India

S.No	Name of the Institution/ organization	Name of the institutional repositories
1	Indian Institute of Science, Bangalore	e-prints @IISc
2	Indian Institute of technology, Bombay	Etd@ IIT Bomaby
3	Indian Institute of technology, Delhi	e- print &Etd@ IITDelhi
4	Indian Institute of Management, Kozhikode	Etd@IIM Kozhikode
5	Delhi University	DU E print Archive
6	NIT, Rourkella	D-space@netr
7	IIIT, Allahabad	GNU E prints
8	INDEST Consortium	http://www.eprints.iisc.ernet.in
9	National Centre for Radio Astrophysics, Pune	http://www.ncra.tifr.res.in
10	National Chemical Laboratory, Pune	http://dspace.ncl.res.in/dspace/index.jsp

Table 2: Initiative of Science Consortiums in India

S.No	Name of the consortium	Web site
1	FORSA	http:// www.iiap.res.in/library/forsa.html
2	VIC(Virtual Information Centre)	http:// www.vic-ikp.info
3	NISCAIR	http:// www.niscair.res.in
4	INDEST-AICTE	http:// www.incest.iitd.ac.in
5	IASB(Indian Academy of Science, Bangalore	http:// www.webwire.com
6	NPTEL(National programe on Technology Enhanced learning)	http://nptel.iitm.ac.in
7	Open Access e-journals portal in India	www.openj.gate.com
8	UGC-INFONET	http://www.ugc.ac.in
9	HELINET	http://jgate-helinet.inforindia.co.in

Conclusion

Research Institutions are promoting digital libraries and sufficient funds providing form UGC, AICTE, NCTE ,CSIR and DST, They researchers keen reference from e-documents in relevant fields. In India UGC and INFLIBNET Centre have taken steps to develop a consortium where college, university and research libraries can join for subscription to on-line journals. Similarly procurement of e-reference sources on CDs can be made and on-line current awareness service of the content pages of the journals subscribed may be provided on the Intranet.

References

1. Varadharajan.N and Chandrasekhar. M. *Library Philosophy and practice*. Digital library Initiatives at higher Education and research institutions in India, 2007.

2. Arms, William Y. *Digital libraries*. London : MIT Press, 2000.

3. Arora, Jagadish. Building: Digital libraries an over view. *DESIDOC Bulletin of Information Technology*. 2001; 21: 3-24.

4. Emergence of Digital Library Services : 2005.

5. Ahmad Khan, Shake D, et-.al. Digital libraries: the present scenario. *ILA Bulletin*. 2003, 39: 3-7.

6. Dugan, Marilyn and Tanner, Simon. *Digital libraries: strategies for the information age*. London :Library Association, 2002.

7. Chowdhury, G. and Chowdhury, S. *Introduction to Digital librarie*s. London; Facet Publishing, 2003.

8. Sreekumar, M.G, et-al.*Library capacity building through e-journals consortia*, 7th MANLIBNET, Digital Libraries in Knowledge management, 2005.

9. http://www.eprints.iisc.ernet.in

10. http://www.indest.iitd.ac.in

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Indian Journal of Library and Information Science	3	5000	200
International Journal of Neurology & Neurosurgery	4	5000	200
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Nigerian Banks Uses of Information and Communication Technology (ICT) and Its Impact on Products and Services: Case Study of Some Selected Banks in Ebonyistate, Nigeria

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Abstract

The study examined Nigerian banks uses of information and communication technology

(ICT) and its impact on their products and services: case study of some selected banks in Ebonyi

State, Nigeria. Through a triangulation method, a total of 16 bank managers were drawn from 16 banks out of the 17 bank managers of Nigeria banks that have branches in the state. Interview and questionnaire were used to gather data. The results obtained demonstrates that ICT has impacted significantly on Banking services, customers profits and the areas that need to be improved upon by the Nigerian Banks were also revealed. The study recommends that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services. This is not for any other reason but for them to be more relevant in the 21st century banking system.

Key words

Information Communication Technology (ICT), ICT Compliance, Banking, Banking Services, Banking System, Service Improvement, Nigeria.

Introduction

Ebonyi State is one of the 36 states that make up the federation of Nigeria. The state was created in October I, 1996 with Abakaliki as the capital. As a result of the new status of the area, economic and social development scaled up. The banking sector became one of the most outstanding in the area of development. The

accelerated growth of the banking sector in the state was orchestrated by the reforms in the banking industry which led to the recapitalization of twenty five (25) banks and the withdrawing of the licenses of the others that could not meet the bench mark of N25 Billion as capital base (Muoneke, 2000).

The primary objective of the reforms is to guarantee an efficient and sound financial system. The reforms are designed to enable the banking system develop the required resilience to support the economic development of the nation by efficiently performing its functions as the fulcrum of financial intermediation (Lemo in Adeyemi, 2005). This development poses new challenges to the banks as competition stiffened. New strategies, approaches and policies become imperative.

The application of information and communication technologies (ICTS) to bank operations became one of the strategies adopted by many banks in the country to strengthen the industry. Oboh (2005) pointed out the three factors responsible for banks imbibing ICT empowerment of their operations and service delivery. These according to him are:-

· Greater pressure on banks to increase profits and shareholder value.

· Increased focus on cost reduction through improved efficiency in the way banks manage business risks and consequently the use of technologies,

· The need to retain existing and expand the customer base, and maximize profitability.

The above shows that ICT has a great role to play if banking sector is to meet the challenges. Its application has become a subject of fundamental concern and importance to all banks as a perquisite for local and global competitiveness. Alabi (2005) maintains that ICT

will facilitate capital formation and promote economic growth which will enable the industry to operate in a safe and sound environment and information and communication technology (ICT) development has been the major facilitator of increasing the integration of global financial market in the banking system. Oboh (2005) and Adeyemi (2005) have all spoken extensively on the capacity of ICT to facilitate sound economic system in the financial sector of any nation. Agboola (2004) highlights some of the products which the introduction of ICT has promoted in the banking system such as Automated Teller machine (ATM), smart cards, telephone banking, etc. all these have made the industry one of the fastest growing sector of the economy.

In another development Villanculos and Moali (2003) outline the benefits of ICT for banks customers to include, better services and productivity, time saving, stability of the industry and automation of the services. In the same vein, Pennings and Horianto (1992) maintain that banks need quality services for their customers by adopting real-time online system which is a feature of ICT.

In an earlier study by Idowu and Adagunodo (2003) on the effect of ICT on the growth of the banking industry in Nigeria, it was found out that the introduction of ICTs into banking operations, has resulted in the safety of customers deposits and quality services. Similarly, Villanculos and Moali (2003) in their own study found that the use of ICTs in banking system had resulted in faster access to information, improvement in the quality of services, increased speed of work, speed in communication, and improved productivity. Another study by Agboola (2004) on the impact of computer automation on the banking services in Lagos, Nigeria also reveals that electronic banking has tremendously improved the services of some banks to their customers. In the light of the above, there is no doubt that use of ICT by some Nigeria Banks has metamorphosed and affected their operations, products and services. However, it is observed that there is limited research that focuses this very important issue. In a time like this, there is need for study such as this to further strengthen the use of ICT by the Nigeria Banks in order to increase their viability, efficiency and at the same time maximized their profits.

Literature Review

Information and Communications Technology (ICT) is a term that covers all forms of computer and communications equipment and software used to create, store, transmit, interpret, and manipulate information in its various formats (e.g., business, data, voice conversations, still images, motion pictures and multi-media presentation). ICT is a combination of 'Information Technology' and 'Communication Technology'. It merges computing with high speed communications link carrying data, sound and video (Alabi, 2005). Information Technology (IT) deals with the collection, storage, manipulation and transfer of information using electronic means. 'Communication Technology' refers to the physical devices and software that link various computer hardware components and transfer data from one physical location to another (Laudon and Laudon; 2001). Information and communication technologies (ICT) are the computing and communications facilities and features that various banks use to support banking services. On the other hand, Information technology (IT) comprises the knowledge, skills and understanding needed to employ information and communications technologies appropriately, securely and fruitfully in banking, employment and everyday life.

Various Information and Communication Technology devices have emerged to enhance the speed and quality of service delivery and radically change how banking services are being handled worldwide (Agboola and Saluwu, 2008). Shokan (2005) identified Electronic Fund Transfer, Electronic Fund Transfer at Point of Sale, Electronic Cheque. Electronic Letter of Credit, Electronic Card, Debit Card, Electronic Cash, Electronic Billing, Automated Teller Machine. Agboola (2002) summarises ICT products relevant to banks into three groups: Bankers automated clearing services, automated payment system and automated delivery channels. Agboola and Salawu (2008) explained these three groups as follows:

v Bankers Automated Clearing Services:

Automated Clearing Services involve the use of Magnetic Ink Character Reader (MICR) for cheque processing. MICR is a system that provides for encoding of cheques and documents with characters in magnetic ink so that they can be electronically read. MICR is capable of encoding, reading and sorting cheques for timely clearing.

v Automated Payment Systems: Automated Payment Systems include products such as Automatic Teller Machine (ATM), Plastic Cards and Electronic Funds Transfer. ATM is a remote cash dispenser that assists customers to have access to withdrawal outside the banking hall. Electronic cards are microchips that store electronic cash to use for online and off line micro payments. They include credit cards, debt cards, and store value cards. Electronic fund transfer (EFT) is an electronic oriented payment mechanism. That is, an electronic tool that is used to effectively transfer the value of exchange process for goods and services, ideas or information from one bank account to another account in another bank (Shokan, 2005). Electronic Letter of Credit, Electronic Cheque and Electronic Cash fall under automated payment system

v Automated Delivery Channels: These include interactive television and the Internet. They offer an excellent environment for banks to experiment with the delivery of Electronic Home and Office Banking (Bill, 1996). This technology provides for exchange of data between computer applications supporting the process of business partners by using agreed-to, standardized, data format. This device enables customers to carry out transactions with their banks through connection between the customer's terminals in their homes and/or offices and the bank's computer system. VSAT (Very Small Aperture Terminal) is a satellite communications system that serves home and business users. Customers with such terminals are able to contact the bank for any form of information required. Information on bank balances, deposits into and withdrawals from accounts may be gotten through this medium.

Application of ICT is capable of enhancing optimal performance in banking services if appropriately carried out (Agboola and Salawu, 2008). Proper queuing analysis will assist to determine the type, nature, extent and spread of ICT products required in banks. Optimal utilization of facilities might be achieved if the design is done based on clear understanding of how the service is to be measured. Such measurements include arrival rate of customers, service rate, traffic intensity, the average time a customer spends in line, the average time a customer spends in the system, average number of customers in the system and average number of customers in the queue. All these will assist to make decisions on the level at which information and communication technology can be applied for an optimal performance in banking operations.

As earlier pointed out, the importance of application of ICT into banking services in the 21st century cannot be underestimated based on the fact that ICT has turn the whole world into a global village. Despite this, there is limited research focusing this very important phenomenon particularly in a country like Nigeria. The need to make data available from the Nigeria context on the importance of bank compliance with ICT and its impact on their products and services at this moment is highly germane. This information will enable Nigeria banks compete with their counterparts around the world and will assist them to know what banks in developed world are doing to promote their services through ICT. This justifies the conduct of this study in a time like.

Objectives of Study

The study pursued the following objectives.

1. To identify ICT facilities available in banks in the state.

2. To find out ICT – driven services available in these banks

3. To determine the impacts of these ICT facilities on the banks customers services.

4. To find out the effects of ICT on banks customer-base and profit level.

5. To find out areas of improvement on the maximization of ICT in Banks.

Research Questions

The following research questions have been formulated to guide the study.

1. What are the ICT facilities in use by the various banks?

2. What are the banks services that have been affected by the adoption of ICT?

3. What is the impact of ICT on the customers' services in these banks?

4. How has ICT impacted on the customers level and the banks profit level?

5. What is the need improvement to maximize the use of ICT in Banks?

Methodology

The study employed both the qualitative and quantitative methods in its approach. Qualitative research focuses on the qualitative aspects of human nature in order to describe, explain, predict and control behavior. According to Rubin and Babbie (2001), the qualitative method pursues a deeper understanding of the human experience, especially when observations and theories cannot easily be reduced to numbers. Quantitative research employs numbers (statistics) in order to describe the characteristics of the unit of analysis. The research describes variables and the relationship between these variables. Theoretical explanations and concepts are essential in the planning of the research design, since it represents the basis of variables and its interdependency (Neuman, 2003). For the purposes of this study, the researcher examined Nigeria Banks compliance with ICT and its impact on their services. The impact of ICT on the banking services will be highlighted by a qualitative approach, while an understanding of the services which ICT impact was attempted through both qualitative and quantitative.

According to De Vos (2002: 265), the concept of triangulation is sometimes used to designate a combination of qualitative and quantitative methodology. However, they cite Mouton and Marias (1990) who argued that the term triangulation refers mainly to the use of multiple methods of data collection with a view to increase the reliability of observation and not specifically to the combination of qualitative and quantitative approaches. Babie and Mouton (2001:275) explain the advantages of triangulation to include: "overcoming the deficiencies that flow from one investigator and the potential for enhancement of the validity of the study findings". Polit and Hungler (1999:259) buttress this by pointing out that a researcher can be much confident about the validity of the findings when they are supported by multiple and complimentary types of data. Triangulation is used in the study to increase the reliability of information gathered from the bank managers on their bank compliance with ICT and its impact on their products and services at the same time to enhance the validity of the findings of the study.

Design

The study adopted a Case Study research design. However, interview and Questionnaire' are involved to gather information from 17 bank managers selected across Ebonyi State of Nigeria. The term case study means different things to different people, and this is often a source of confusion and misunderstanding (Collis & Hussey, 2003). The case itself may take many forms, although the focus of inquiry is usually small in scale, as not only are case studies frequently characterized by micro level research but are also typically descriptive and qualitative in nature. As an approach to research, case study, however, has much to offer in terms of both theory and practice. The choice of case study in this research is based both on its own nature as well as the specific attributes of the research. Another important reason for employing case study in this research is that it provides a basis for the closer integration of theory and practice. Case study research is considered the most appropriate methodological tradition for use in this study, given that the purpose of the study which emphasises the context of impact of ICT compliance on Nigerian banks products and services. To gather accounts of different realities constructed by bank managers from various environments in the state both qualitative and quantitative methods are drawn upon: questionnaire and face to face interviews were adopted to gather information from the sample of the study.

Based on the above, two data gathering instruments were developed for the purposes of this study: An in-depth interview guideline was developed in order to adhere to the qualitative requirements of the study. In terms of the quantitative component of the study, a questionnaire was utilized. An initial in-depth study of relevant literature on the research topic was undertaken by the researcher. The information that was derived from the literature review on the one hand, and valuable experience gained in practice on the other hand, were combined in order to construct the guidelines for the in-depth interviews. The guidelines were generated by the researcher, pertained to specific questions that were covered during the interviews, and enabled the researcher to maintain standardization throughout. Subsequently, all the respondents were asked the same questions during the interviews. Open-ended questions were employed in order to elicit information about the phenomenon under study, and to provide an opportunity to the respondents for elaboration and freedom of expression. According to De Vos (2002, 302) the guidelines for the semistructured interview "provides the researcher with a set of predetermined questions" and guides the researcher's thinking about the content of the interview that needs to be covered. Rubin and Babbie (2001) indicate that structured strategies to questions are aimed at ensuring that respondents answer the same questions in the same sequence. As a result, the efficiency with which responses can be compared is maximized. In-depth interviews, administered by the researcher in a semi-structured, open-ended manner, were conducted with 16 respondents in separate interview situations. The respondents were adequately oriented towards the purpose and confidentiality of the interviews.

Questionnaire was used to collect preliminary data and later a face to face interview was conducted for all the 16 selected bank managers to gather in-depth information on the impact of ICT on their bank's products and services. The questionnaire items were adapted from the works of Villanculos and Moahi (2003) and Agboola (2001). Response to the questionnaire follows a likert type format of five point rating starting from Strongly Agree = SA to Strongly Disagree = SD.

The items in the questionnaire were in line with the content of what is being measured thereby ensuring the content and the face validity of the instrument. The reliability of the questionnaire was determined via a test-retest reliability method of two weeks intervals. The reliability co-efficient via Cronbach alpha return an $r = 0.87$. This indicates that the instrument is highly reliable and can adequately help to achieve the objectives of the study. The survey included question items to establish whether or not individual bank was using ICT to carry out their day to day banking activities, the types of ICT facilities available in those banks, etc.

Population

The target population of the study is the bank managers of all the banks that have branches in Ebonyi State, Nigeria. There are 25 consolidated banks in Nigeria out of which 17 have their branches in different parts of Ebonyi State. The study was carried out at Abakaliki the State capital where all the 17 banks under study have their main branch offices. Out of the 17 banks, 16 Branch managers were selected. These constitute the population of the study.

Procedure

The questionnaire was administered directly by the researchers on the respondents in their various offices. This was filled and returned the same day to the researchers. The prompt response by the respondents ensured 100% returned of the instrument. At the return of the filled questionnaire by each respondent, an arrangement was made on the time for the face to face interview. Eventually, agreement was reached with each respondent on the time of the interview. The interview exercise covered 16 days, a day for each of the respondent. This was because the selected banks were far from one another.

Just like the questionnaire administration, the interview exercise took place in the respective office of the respondents. Permission was sought from the respondents to allow recording of their responses. This was granted by 15 respondents while one respondent resented arrangement for official reasons. In this regard, the questions asked were based on two themes: impact of ICT

on products and services and improvements that need to be made.

Data analysis

Structured data collected through questionnaire were subjected to percentage and frequency count statistical analysis. On the other hand, interview data were analysed thematically. The first research question was answered by the questionnaire administered while the other three research questions were answer by the interview conducted. The results are presented as follows.

RESULTS

Table 1: ICT FACILITIES AVAILABLE IN THE BANK

FACILITIES	NO OF BANKS
ATM	15
Internet Banking	16
SMS Banking	2
Mobile Banking	2
Computers	16
Telephone Banking	3
E- Banking	3
Online Banking Services	16

As indicated in the table above, all the sixteen banks that took part in the study have ICT facilities like Internet banking, computers, and online banking services. ATM facility was indicated to be available in 15 out the 16 banks. Moreover, telephone banking was available in 3 banks so also e-banking was available in three banks. Other results revealed that SMS banking was available in 2 banks and Mobile banking was as well available in 2 banks. These results suggests that its only three ICT facilities Internet banking, Computers, and online banking that are popularly available in all the participating banks.

Table 2: BENEFITS AVAILABLE TO BANK THROUGH ICT APPLICATION

		SA	A	D	SD
a.	Facilities accurate record keeping	16	01		
b.	facilities convenient business hour	14	03		
c.	Access account at any location	15	02		
d.	Improves quality of service	16	01		
e.	Enhances faster services	16	01		
f.	Increases speed and easy communication	14	03		
g.	Reduces cost of operation	14	02	01	
h.	Improves productivity	13	03	01	
i.	ICT fasters fund transfer	14	03		
j.	Reduces customer complaints	13	03	02	
k.	Enable customers access account any time	12	03	02	
l.	Links together branches	14	03		
m.	Reduces interpersonal relationships	12	03	02	
n.	Increases the number of customers for the bank.	13	02	01	01
o.	Leads to increase in profit margin	14	03		
p.	facilitate inter-banking services	14	03		

Table 2 above contained items on various impact of ICT on banking activities. The results revealed that all the 16 bank managers strongly agreed to all the ICT impact items in the table. This indicates that banks compliance with ICT has impacted on almost every area of banking services in Ebonyi state of Nigeria.

Impact of ICT on Bank Products and Services

Research question 2: What are the banks services that have been affected by the adoption of ICT? To answer this research question respondents were asked to identify the various banks services that have been affected by the adoption of ICT in their banks and to indicate how ICT has affected them. It was indicated by all the respondents that services mostly affected by ICT include customer services in terms of saving and withdrawing. It was explained by some of the respondents that before the introduction of ICT the earlier a customer can finish transaction in the banks was fifteen minutes. Now the longer a customer can wait in the banks is as lower as two to three minutes that is if they are withdrawing through cheques or teller. Customers who does not use cheques for withdrawing money has the option of using ATM which is swifter than using cheques. It was further stated that ICT has now make it easier to get customers statement of account across to them unlike when they have to wait for weeks before getting it by post. Though, statement of account were still posted to customer, however, customers have opportunity of requesting their statement by phone call, email, or requesting for it over the counter; which does not take time before it is provided by computer. It was also gathered that banks nowadays need not to run after customers to recover loan since their mobile phone numbers, email and others are now with the banks. Banks just call such customers reminding them the time for repayment of their dues or debt. It was explained that before, cashier usually spent long hours trying to balance daily transactions in the ledger. This exercise caused some cashier to leave banks as late as 10- 11pm. The introduction of ICT has changed this story. Cahiers now leave banks as soon as banks closed because the technology is now making it easier for them to balance account on time.

Research question 3: What is the impact of ICT on the customers' services in these banks? It was reflected from the interview report that formerly, customers complained of time they remain on queue in the bank before they were attended to. Additionally, they now find it easier to get information about their account and transactions. The flexibility of transaction was also pointed out by the respondents. It was explained that customers can now withdraw in any branch of a particular bank they are using either by Cheques or by ATM. This is also similar to saving. They can now save in any branch of a particular bank they are using. The issue of safety and security was also pointed out. Customers need not carry huge amount of money with them again before they do business. ICT has made it easy for payment to be made to a customer in another location where the business is transacted.

Research question 4: How has ICT impacted on the banks profit level? To answer this research question, respondents were asked to indicate how ICT has impacted banks profit. It was indicated by the 15 out of the 16 managers that their banks profit has drastically increased. Compared to the time everything was manually done. Now banks have more than enough to do business and to lend to customer who seek for loan. The long hour customers have to be on queue before they can be attended to is no more. This now afford banks opportunity of attending to many customers within a short period of time and this has led to increase in the profits by most banks. Part of the statement of emphasis is "ICT now allows us to reach out to many of our customers in both remote and urban area and this has greatly impacted our profits".

Improvement that need to be made

Research question 5: What is the need improvement to maximize the use of ICT in Banks? On this issue, it was emphasized by the respondents that though ICT has impact greatly on banking activities on the part of both the customers and the banks, the fact still remains that not all banks have compliance with ICT. Even among those banks that are now using ICT, not all their workers are skilled in the use of the technologies. Most customers as well do not have the knowledge of how these

technologies work. It is not funny that some customers do not know how to use ATM. More so, some are afraid that ATM open their account to fraudulent people. Based on the foregoing, it was suggested that there is need for more education on the part of banks and the customer to improve their knowledge of ICT. Not these alone, respondents suggest that banks that are yet to posses most of these technologies should try to acquire them. Aside of banks helping their workers who does not have knowledge of ICT, they can as well help their customers. It was explained that they can do this by setting a day of the week to enlighten customer on how they can use what technologies in the banks to transact business.

Discussion

The study examined Nigerian banks uses of information and communication technology (ICT) and its impact on their products and services using selected banks in Ebonyi State, Nigeria. The results obtained have demonstrated that ICT has impacted significantly on Banking services, customers and profits. The areas that need to be improved upon by the Nigerian Banks were also revealed. These findings have been corroborated by previous research results. For instance the study by Idowu and Adagunodo (2003) on the effect of ICT on the growth of the banking industry in Nigeria, reported earlier that the introduction of ICTs into banking operations, has resulted in the safety of customers deposits and quality services. Similarly, Villanculos and Moahi (2003) finding that the use of ICTs in banking system had resulted in faster access to information, improvement in the quality of services, increased speed of work, speed in communication, and improved productivity lend a good credence to the present findings on this study. Another study by Agboola (2004) on the impact of computer automation on the banking services in Lagos also revealed results that support the findings of this study by stating that electronic banking has tremendously improved the services of some banks to their customers.

It is not claimed in this study that Nigeria banks have got there. There is still a long way to go. Going by (Agboola and Salawu, 2008) report, the new generation banks appeared to be more efficient in utilising ICT to enhance performance. The traffic intensities in 50% of the old generation banks where ICT was not efficiently utilised were between 0.89 and 0.95 as against the theoretical limit of 0.80 thus making the queue of infinite length. The traffic intensity for all the new generation banks was less than 0.8. On the average, customers spent 23.01 minutes in the old generation banks as compared to 7.50 in the new generation banks. Similarly, average number of customers in the system in the old generation banks was 8.39 as compared to 2.56 in the new generation banks. In the light of the above, the attention of all Nigerian Banks is hereby drawn to the findings in this study. This is to make them understand that applying ICT to their day to day activities is not only profitable but also rewarding. The report that only new generation banks in the country appeared to be more efficient in the use of ICT to enhance performance is not good enough. Therefore, old generation banks as well need to emulate this gesture. Taking banking activities and banking sector to utmost height should be seen as priority at this digital era. The reason is for Banks in Nigeria and other African countries to be able to compete with the banks in the developed world where the use and application of ICT is being well implemented.

Conclusion

The study concluded that banks should incorporate ICT into their strategic plans for effective performance in payment and delivery systems. Adoption and allocation of ICT should be based on proper analysis to determine the type, nature and extent of products required for effectiveness and efficiency. If at present there is any Nigerian Bank whether new generation or old which as neither implemented nor has plans to implement the application of ICT to their banking operation, the time is now. It is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services. This is not for any other reason but for them to be more relevant in the 21st century banking system.

References

1. Adeyemi, K. S. Bank sector consolidation in Nigeria: Issues and challenges. *Union Digest* 9 (3 & 4); 2005: 31 – 44.

2. Agboola A. A. Information technology, Bank

automation and atitude of workers in Nigerian Banks. *Journal of Social Sciences*, 2004

3. Agboola, A.A. Impact of electronic banking on customer services in Lagos, Nigeria. *Ife Journal of Economics and Finance,* 2002; 5: 24-34.

4. Agboola, A.A.& Salawu, R.O. (2008). Optimizing the use of information and communication technology (ICT) in Nigerian banks. Journal of Internet Banking 13 (1), 2008; 13: 1-15.

5. Alabi, D. *Information technology and e-marketing: Prospect and challenges for marketing practitioners in an emerging economy*; An Unpublished Paper Delivered at the 2005 N Marketing Educator Conference, University of Lagos, Nigeria, 2005.

6. Babbie, E. & Mouton, J. *The practice of social research.* South Africa. Cape Town; Oxford University Press, 2001

7. Bill, G.*Banking on a high-tech future. Chatered institute of bankers*. Bankers Books. Emmanuel House. Burgate Lane, Canterbury, Kent, 1996; 2: 20.

8. De Vos, A.S. *Research grass roots*. Second edition. Pretoria: Van Schaik Publishers; 2000

9. Idowu P. A, and Adagunodo E. R. *The effect of information technology on the growth of the Bank industry in Nigeria, Electronic Journal of Information system in Developing countries*. http://www.Eyisdc.Org/ojs2/index.ph/eyisdc/ (April 17, 2008).

10. Loudon, D.P. & Loudan, J.P. *Management information system organisation and technology in the network enterprises*. 4th ed. U.S. Prentice Hall International, 2001

11. Muoneke, N. D. *This is Ebonyi State: A fact book guide to the salt of the Nation*. Abakaliki: Publicity Bureau, Government House, 2000

12. Neuman, W.L. *Work book for social research methods: Qualititative and quantitative approach.* 5th Ed. Pearson Education, Inc, 2003

13. Oboh, G. A. T. *Developing an ICT- enabled service delivery in the Nigerian Banking industry: Union Bank experience.* Union Digest, 2005; 9: 1 -12.

14. Pennings, J. M. & Horianto, F. (1992). The diffusion of technological innovation in the commercial banking industry. *Strategic Management Journal*, 1992; 13: 29 – 46.

15. Polit, D.F.& Hungler, B.P. *Nursing research: Principle and methods.* 6th ed. New York; Lippincott, 1999.

15. Rubin, A., & Babbie, E. *Research methods in social work* 4th ed. Pacific Grove, CA; Brooks/Cole Publishing Co, 2001.

16. Shokan, O.O. The basic of electronic payment system, *Journal of Chartered Institute of Bankers of Nigeria*, October - December Edition; 2005.

17. Villaculovs F. F. & Moahi. Assessment of the use of information and communication technologies (ICTS) in the financial sector: A case study of the Mozambican banking System. *African Journal of Library, Archives and Information Science, 2003;* 13: 21 – 32.

Appendix
List of Banks Operating in Ebonyi State
1. Intercontinental Bank
2. Access Bank
3. First City Monument Bank
4. United Bank for Africa
5. Spring
6. Fidelity Bank
7. Diamond Bank
8. Oceanic Bank
9. Guaranty Trust Bank
10. Eco Bank
11. Bank PHB
12. Union Bank
13. First Bank Plc
14. First-land Bank Plc
15. Zenith Bank
16. Skye Bank

Appendix II
List of Consolidated Bank in Nigeria
1. Access Bank Plc.
2. Afribank Plc
3. Diamond Bank
4. Eco Bank Nigeria
5. Equatorial Trust Bank
6. First City Monument Bank
7. Fidelity Bank
8. First Bank Plc
9. First Inland Bank
10. Guaranty Trust Bank
11. IBTC-Chartered Bank
12. Intercontinental Bank
13. Nigerian International Bank
14. Oceanic Bank
15. Platinum Bank
16. Skye Bank
17. Spring Bank
18. Stanbic Bank
19. Standard Chartered Bank
20. Sterling Bank
21. United Bank for Africa
22. Union Bank
23. Unity Bank
24. Wema Bank
25. Zenith Bank

Role of Law in Library and Information Centres

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The paper highlights role of 'Law' in general with particular reference to Indian Library and Information Centres. It describes concept, purpose and objectives, types of Law and their application in various areas of in Library and Information Centres. It also point out several barriers in application of Law in Libraries and finally suggest application of Law in scientific manners in Library and Information Centres to achieve their objectives in a better way.

Key Terms

Law, Library, Information Centers, India

Introduction

Law has a wide role in the universe which functions on certain principles. Each entity of the universe is governed by Law directly or indirectly. Law has wide impact on all walks of life. It is needed to function the offices, home, army, playground, factory, institutions, organizations, including Library and Information Centres. The knowledge of Law is necessary for all categories of persons such as engineers, managers, teachers, students, politicians, farmers, scientists, librarians, technologists, children, women, and even ordinary person irrespective of caste, creed, color, sex and geographical boundaries. The context of law may differ person to person in different circumstances. In fact, knowledge of law is essential for all categories of people on account of changes i.e. social, cultural, economical, political, geographical, technological etc. taking place which are affecting life style of people in terms of human needs. Maslow (1943)[1] identified five categories of human needs hierarchical order which are affecting human needs.

These needs are

1. Physiological needs: Life support material

2. Safety needs: Security protection stability

3. Social needs: Love affection, friendly contracts

4. Esteem or Ego needs: Prestige, self respect, recognition

5. Self actualization needs: Developing one own potential to the highest level
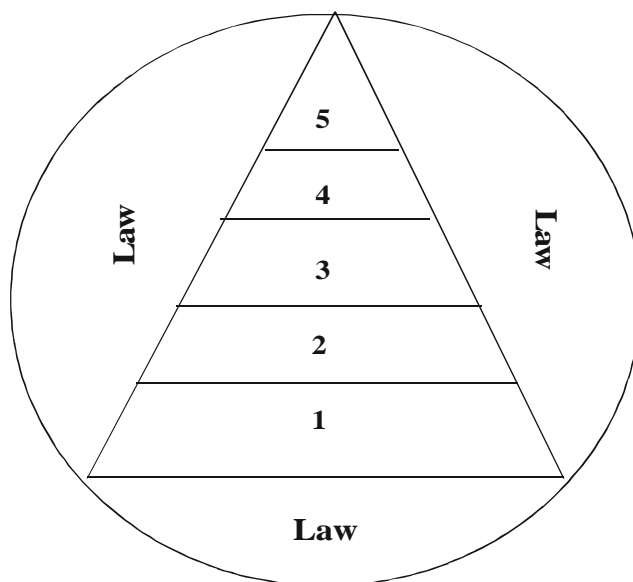

Fig. 1. Role of Law in Human Needs.

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21

These needs of the people are fulfilled in a hierarchal order from physiological to self actualization needs. Law plays an important role in fulfilling these needs in the best possible manner.

2. Concept of Law

Soanes and Stevenson (2007)[2] define law (i) A system of rules recognized by country or community for regulating the actions of its members and are enforced by the imposition of penalties. (ii) A rule defining correct procedure or behavior in a sport. (iii) A statement of fact deduced from observation, to the effect that particular natural scientific phenomenon are always occur if certain conditions are present. (iv) The body of divine commandments as expressed in the Bible and other religious text.

Biswas (1982)[3] define law as a synthesis of order and justice. Under article 13 of the Constitution of India, law requires any ordinance, order, bye-law, rule, regulation, notification, custom, or usage having in the territory of India the force of law. As per the Constitution of India article 13 (3), a law includes an ordinance issued by President or Governor. In wide context, law includes rules, principles, statutes, ordinances, acts, standards, policies, guidelines, canon, code, traditions and customs, recommendations of the committees/commissions, professional associations, etc. In short, any systematic study for justice is law.

3. Types of Law

It has been observed that there are several categories of law. Therefore it is categorized on the basis of certain attributes, such as area, period, content, institutions, and discipline.
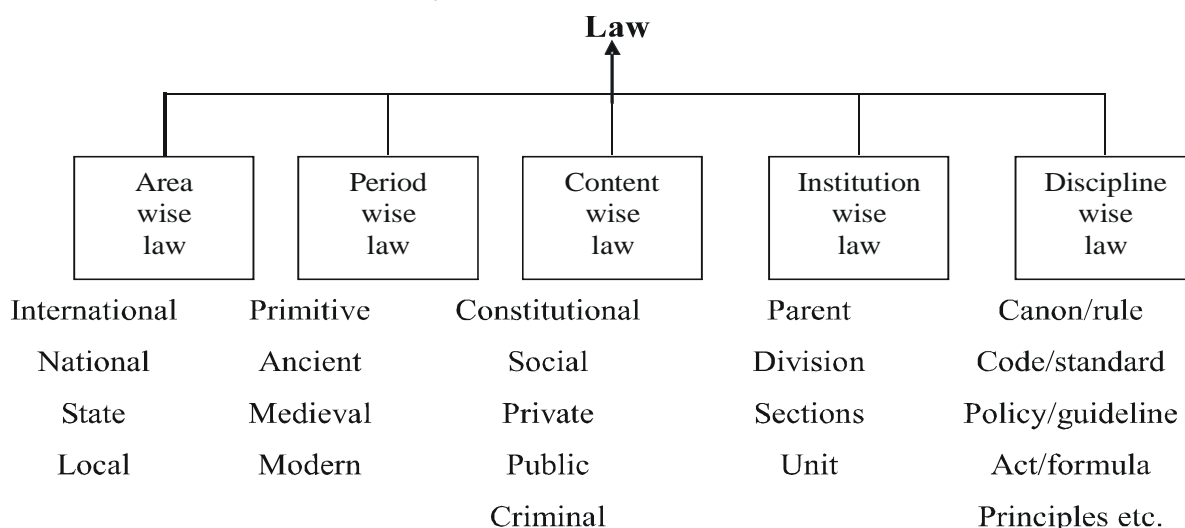
Fig. 2. Types of Law

4. Purpose and Objectives of Law

The main purpose of law is to provide justice to the people and the organization. The purpose of law in Library and Information Centers is to provide justice to library staff, users, collections, systems etc. It has the following objectives:

* Proper organization and management of library

* Scientific utilization resources of the library

* Maintain law and order in libraries

* Acquisition of library material in a balance way

* Provide better services to the users of the library

* Liaison among the library authorities, staff, and users.

* Protect the rights of the users, staff and authorities

* Doing justice with library users, staff, authorities and system

5. Impact of Law on Library and Information Centres

It has been observed that there is a wide impact of different forms of law on libraries directly

or indirectly. These are as follows:

* Fundamental Laws: Ranganathan (1988)[4] propounded Five Laws of Library Science i.e. (1) Books are for use (2) Every reader his/her book (3) Every book its reader (4) Save the time of reader (5) Library is a growing organism. These laws are applicable in the entire field of librarianship.

* Rules: Anglo-American Cataloging Rules (AACR) for cataloging of documents.

* Code: Classified Catalogue Code (CCC) for cataloging of documents.

* Canon: Canon of Cataloging used for cataloging principles.

* Formula: Staff formula introduced by Dr. S.R. Ranganathan and University Grant Commission formula for assessing staff position in libraries.

* Principles: Henry Foyal's fourteen principles of managements applicable in the management of libraries.

* Standards: International Standard Bibliographic Description (ISBD).

* Policy: National Policy on University Libraries, Collection Development Policy for Libraries.

* Minutes: Library committee with regard to purchase, finance, and grievances; academic; executive committee etc.

* Acts: Information Technology Act 2000, Copy Right Act 1954, Right to Information Act 2005, Library Legislation Acts etc.

* Scheme of Classification: Dewey Decimal Classification Scheme (DDC), Colon Classification (CC) etc for classification of documents.

* Recommendations of Committees/Commissions/Professional Associations: Dr. S.R. Ranganathan Committee 1957, Radhakrishnan Education Commission 1948, Kothari Education Commission 1964. The National Knowledge Commission 2006, Pay Commissions setup by government of India, Indian Association of Special Libraries and Information Centres (IASLIC), Indian Library Association (ILA) etc. for growth and development of Libraries and Information Centres.

* Miscellaneous: Fundamental rights of the citizens, Basu (1993)[5] as mentioned in the Constitution of India under Article 1991, are (i) Right to equality (ii) Right to particular freedom (iii) Right to against exploitation (iv) Right to freedom of religion (v) Cultural and education rights and (vi) Right to constitutional remedies.

(ii) Tradition and Customs of the Nations/Institutions: Holidays on birthday or foundation day of the Institutions etc.

(iii) General orders (GO) of the Ministries such as Ministry of Human Resources Development.

(iv) Service Manuals: Swamy's Handbook for Central Government Employees. Nabhi's Reference for Central Government Employees.

(v) Ethics: Professional ethics

6. Legal Sources of Information for the Libraries

There is a long list of legal sources of information which may useful for the libraries directly or indirectly. The important legal sources of information are listed below:

Acts

Library Legislation Act, Technology Act, Copyright Act, Right to Information Act, Parent Institutions Act,

Recommendations

Education/Pay/Knowledge Commission, Professional Associations, Workshop/Seminar/Conferences on libraries.

Minutes

Academic/Executive Council, Purchase/Finance/Adhoc/ Enquiry / Disciplinary Action Committee etc.

Disciplines

Law, Rule, Principles, Canon, Formula, Standard, Code of classification and cataloging, Policy/Guidelines, Methods and Techniques, Professional ethics etc.

Decision of the Courts

Lower/Higher/Supreme Court of the Country.

Fundamental Rights and Duties of the Citizens

As mentioned in the Constitution of India.

Literature

Published/Printed/Non-printed material in the form of books and journals, reports, CDs, DVDs, and Web Resources available on internet.

Miscellaneous

Traditions and customs of the Institutions/ Nations, general orders of the Ministries of the State/Central Government etc.

7. Areas for Application of Law in Libraries

There is a wide application of law in the entire field of the libraries. These areas may be grouped in following categories i.e. library building, fittings and furniture, document collection, staff, users, services, management and other remaining areas.
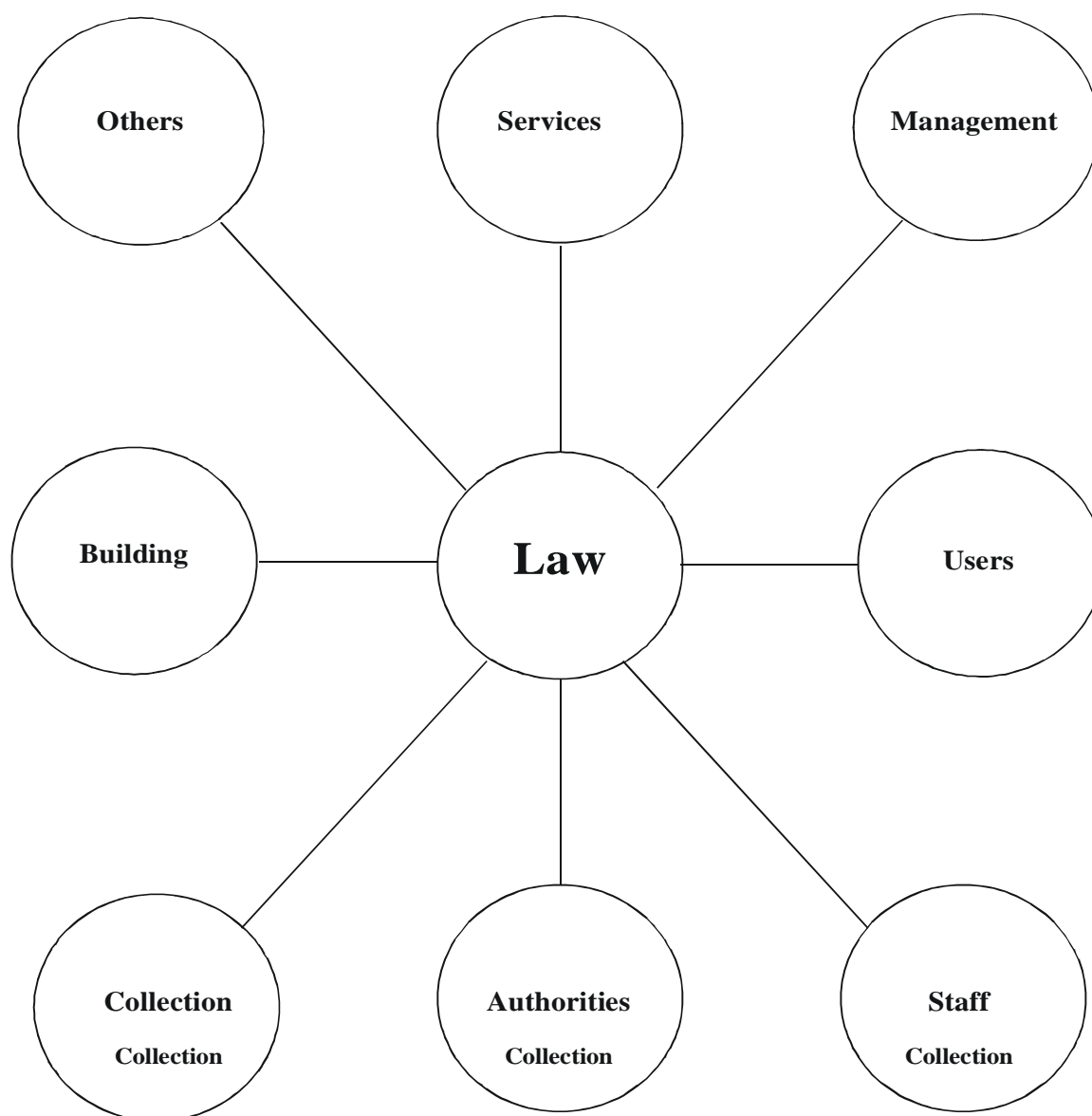

Fig. 3 Areas for Application of Law in Library and Information Centre.

7.1 Library Building, Fittings and Furniture

- Construction of building, in terms of reading room, stack area, area for public catalogue, room for library staff, computer lab etc.

- Fitting of fans, air conditioners, lift, computers etc.

- Chairs, tables, display racks, file cabinet, catalogue cabinet etc.

- Safety and security of library buildings, fittings and furniture,

7.2 Library Document Collection

- Acquisition of printed/non printed material

- Preservation, conservation, repackage, binding of the material etc.

- Legal binding of publishers/suppliers for the quality and quantity of the document.

7.3 Library Staff

- Appointment, promotion, transfer, demotion, deputation, and retirement of the staff.

- Facilities i.e. leave, education, conveyance, medical, accommodation, extra duty and other allowances etc.

- Professional development, in terms of attending conferences, workshop, seminar, refresher courses, writing articles etc.

- Rights and duties of library staff towards staff, users, authorities, and systems.

7.4 Library Users

- Physical facilities i.e. reading seats, light, air and congenial atmosphere of the library.

- Enrollment of users, education to the users regarding utilization of resources of the library.

- Number of document issued/return, fine in case of loss of books and over due charges, disciplinary action in case of violating library rules.

- Rights and duties of library users towards authorities, building, collection, institution etc.

7.5 Library Authorities

- Rights and duties of the Vice-Chancellor/Registrar/Finance officer, Proctor, Librarian/Director/Chief Information Officer etc.

on every aspect of library and information centres

- Formation of committees in respect of purchase, finance, utilization, disciplinary action, grievances, enquiry, library etc.

- Assessment of performance of staff of the library for promotion

- Liaison with staff, students, users, authorities of the libraries for better functioning of the library

7.6 Library Services

- Technical services: Translation, indexing, classification, cataloguing, abstracting, reprographic etc.

- Reader services: Circulation, reference, current awareness, selective dissemination of information, bibliographical, consultation, inter library loan etc.

- Delivery of document/piece of information manually/electronically

- Extension services: Organization of exhibition of books and photographs and conducting lectures etc.

7.7 Library Management

- Management of financial resources: Income and expenditure on various items such as books, journals, computer, and staff salary.

- Management of personnel resources: Recruitment of personnel, division of work, performance report, training in I.T. etc.

- Management of document resources: Acquisition, processing, storage, dissemination of information

- Direction of higher authorities to the subordinate staff and highlighting the problems of the division/sections to the higher authorities for smooth functioning of the library.

7.8 Other Aspects

- Proper maintenance of the statistics on usage, finance, staff, collection and other material of the libraries.

- Auditing of library in terms of income and expenditure on various aspects such as books, journals, computer, furniture, and staff.

- Publicity of the library in terms of collection, services and achievements in the society

- Maintenance services such as cleanness of the library, proper light, air, water, sanitation in the library

- Opening hours/number of working days of the library during the year etc.

8. Barriers/Limitations in Application of Law in Libraries

It has observed that each organization wish to implement law to the spirit of law but sometimes in certain circumstances it is very difficult to implement the law in toto. These conditions are as follows:

(i) Controversial document which hurts the feeling of other community i.e. 'Satanic Verses' by Salman Rushdi and 'Lajja' by Taslima Nasrin, these documents hurted the Muslim community;

(ii) On one hand, Fundamental Rights of the people such as Right to Information Act and on the other, rights of the authors such as Copy Right Act, Intellectual Property Right Act;

(iii) Unawareness of the law among the people which become the hurdle to get justice in the organization in terms of better collection, services, facilities of the libraries;

(iv) Misinterpretation of law (Misuse of law) by the peoples of organization in their own interest which causes injustice for the deserving candidates;

(v) 'Lack of will power'. Sometimes due to psychological weakness of the officer, the law is not implemented in the libraries to the spirit of law. Ultimately this is harmful for the organization in terms of justice to the users, staff, and services in the library;

(vi) Involvement of the nasty politics in organization is also harmful in many respect in the libraries in terms of appointment, promotion, and demotion of the staff, delegation of powers by the Head of the division/sections, purchasing of library materials and services provided to the users etc.

9. Conclusion

India is a sovereign, socialist, secular and democratic republic country. The constitution of India ensures its citizen justice - social, economic and political; liberty of thought, expression, belief, faith and worship; equality of status and of opportunity; and fraternity assuring the dignity of the individual and unity and integrity of the nation.

Library and Information Centres are playing a crucial role in the growth and development of nation directly/indirectly by providing better services to the members of the society. Law is powerful weapon in providing justice in any system/organization. In fact in absence of proper implementation of law, the Library and Information Centres can not function in proper manner. Therefore the following strategies may be adopted to execute law in the Library and Information Centres to achieve their objectives in a better way.

(i) Rules for libraries should be framed either keeping in view of human behaviour or natural law (Justice).

(ii) Creating awareness about law among libraries, staff, users, and authorities; organization of meetings; and bringing out news letters/bulletin.

(iii) Permission for consultation of controversial document only to academic/research purpose not to general readers.

(iv) Maintaining the balance in the fundamental right of the people and rights of the authors by providing a photocopy/microfilm/CD of the rare book/manuscripts and other documents to the users keeping in view the interest of the organization.

(v) Preparing a comprehensive staff manual in terms of acquisition of document collection, services, staff, buildings, users etc. for smooth function of library

(vi) Either appointment of legal advisor in the library or giving a preference in appointment of library staff having legal background keeping in view immense role of law in libraries

(vii) Execution of law in library to the spirit of law with strong willpower and discourage the nasty politics in the libraries

References

1. Maslow, Abraham H. (1943). A theory of human motivation. Psychological Review 50 (4): 370.

2. Soanes, Catherine and Stevenson Angus (2007). Concise Oxford dictionary. Oxford; Oxford University Press, 807.

3. Biswas, A. R. (1982). Encyclopedic dictionary of Law. Calcutta; Eastern Law House, 425.

4. Ranganathan, S. R. (1988). The five laws of Library Science. Banglore, Sharada Ranganathan Endowment for Library Science, iii.

5. Basu, Durga Das (1993). Introduction to Constitution of India. New Delhi; Prentice Hall, 84-45.

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(Should be sent with original signatures by all authors alongwith one hard copy of the article)

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All full paper submissions will be peer reviewed and evaluated based on originality, technical and/or research content/depth, correctness, relevance to conference, contributions, and readability. The full paper submissions will be chosen based on technical merit, interest, applicability, and how well they fit a coherent and balanced technical program. The accepted full papers will be published in the refereed conference proceedings. Prospective authors are kindly invited to submit full text papers including results, tables, figures and references. Full text papers (.doc, .rft, .ps, .pdf) will be accepted only by electronic submission.

WORKSHOPS

You are cordially invited to submit a paper and/or a proposal to organize a workshop and actively participate in this conference. Proposals are invited for workshops to be affiliated with the conference scope and topics. The conference seeks proposals for workshops on foundational and emerging topics in areas relevant to Knowledge Systems Engineering. The conference workshops provide a challenging forum and vibrant opportunity for researchers and industry practitioners to share their research positions, original research results and practical development experiences on specific new challenges and emerging issues. The workshop topics should be focused so that the Participants can benefit from interaction with each other and the cohesiveness of the topics.

PROCEEDINGS

The refereed conference proceedings will be published prior to the conference in both Hard Copy Book and CD-ROM, and distributed to all registered participants at the conference. The refereed conference proceedings are reviewed and indexed by Universal Science Citation Index (USCI), Google Scholar, Directory of Open Access Journals (DOAJ), EBSCO, Ulrich's Periodicals Directory, German National Library of Science and Technology and University Library Hannover (TIB/UB), Electronic Journals Library (Elektronische Zeitschriftenbibliothek, EZB), Genamics, GALE and INTUTE.

SPECIAL JOURNAL ISSUE

ICKSE 2009 has teamed up with the International Journal of Electrical, Computer, and Systems Engineering for publishing a Special Journal Issue on Advances in Knowledge Systems Engineering. All submitted papers will have opportunities for consideration for this Special Journal Issue. The selection will be carried out during the review process as well as at the conference presentation stage. Submitted papers must not be under consideration by any other journal or publication. The final decision will be made based on peer review reports by the guest editors and the Editor-in-Chief jointly.

RFID Technology for Better Library Services

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Abstract

[This paper describes on RFID technology, i.e. what is RFID Technology, what are the objectives of this technology, its history, how does the system works, what are the basic requirements to implement this technology, current uses of this technology, what are the application areas in library functions and so on. This paper also describes on advantages and drawbacks of RFID System. Finally an effort also made to compare the two technologies- RFID and barcode in a very lucid language.]

1. Introduction

RFID, stands for Radio-Frequency Identification, is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders and presently used in various field like passports, transportation payments, product tracking, automotive, animal identification, inventory system, libraries, human implants, hospital and health-care and so on.

As we are facing the increasing demand of the users, it becomes inevitable to adopt modern technology for better and prompt library services. RFID is one among the modern technologies, has been started to use by many libraries to replace the barcode technology. RFID has so many advantages over the barcode technology.

2. Rfid

RFID is a generic term for technologies that use radio waves to automatically identify people or objects.[1] Actually, it is made by small electronic devices that consist of a small chip and an antenna. The chip and the antenna together are called an RFID tag or an RFID

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transponder. The antenna enables the chip to transmit the identification information to a reader. Then the reader converts the radio waves reflected back from the RFID tag into digital information that can then be passed on to computers that can make use of it.

3. Objectives

The main objectives of introducing RFID Technology in a library are as follows:

1. To eliminate the difficulties experienced in barcode technology.

2. To improve operational efficiency and reduce human error.

3. To save the time of the users by simplifying patron self check-out and check-in of document.

4. To establish high-speed inventory and identifying system.

5. To prevent theft of document.

4. History

RFID is a proven technology that's been around since at least the 1970s. Mario Cardullo's U.S. patent 3713148 in 1973 was the first true ancestor of modern RFID, a passive radio transponder with memory. But the first patent to be associated with the abbreviation RFID was granted to Charles Walton in 1983 (U.S. patent 4384288)[2]. And it was first proposed in the late 1990s as a technology that would enhance workflow in the library setting.

5. HOW DOES AN RFID SYSTEM WORK?

An RFID System consists of a tag made up of a microchip with an antenna, and an interrogator or reader with an antenna. The reader sends out electromagnetic waves. The tag antenna is tuned to receive these waves. A passive RFID tag draws power from the field created by the reader and uses it to power the microchip's circuits. The chip then modulates the waves that the tag sends back to the reader,

Md. Rafiqul Alam *et al.* Indian Journal of Library and Information Science. January - April 2009; Vol.3 No.1

29

which converts the new waves into digital data.

6. Types of Rfid Tags

RFID tags are of three types viz. passive, active and semi-passive. Passive RFID tags have no internal power supply. It draws power from field created by the reader, whereas active RFID tags have their own internal power source, which is used to power the integrated circuits and broadcast the signal to the reader. On the other hand semi-passive tags have also their own power source but the battery only powers the microchip and does not broadcast a signal.

7. Scanning of Information From Rfid Tag

Like barcode technology, RFID does not require line of sight to read the information stored on RFID tag. RFID tags can be read as long as they are within range of a reader. It means that RFID reader has required just to pass away to the RFID tags to read the information. Hence it is a big advantage of RFID, over the barcode technology because barcodes is line-of-sight technology where scanner has to "see" the barcode to read information stored on the barcodes.

8. Basic Requirements toImplement the System

For implementation of the RFID System following equipments and parts are required

1. RFID Transponders or RFID Tags which may be passive, active or semi-passive depends upon the need and that has been programmed with information regarding the material on which it attached with.

2. RFID Reader or Scanner to read or scan information from the RFID tag attached with the objects. RFID scanner may be fixed within the scanning range or portable to carry them every where in the premises.

3. A Host Computer depending on the requirements and system.

4. Library Management Software to run the system.

5. User Database to keep details record of the users.

6. Documents Database to maintain the status, whether it is issued to patron or not, and past transaction history of the document.

7. Counter Station for circulation process.

8. Anti-theft Detection Gate with Closed Circuit Camera to prevent theft of the document by automatic alarming the bell and at the same time captured a photo of the patron by CC Camera.

9. Current Uses of Rfid Technology

9.1 Passports

Now RFID tags are being used in passports issued by many countries. Malaysia is the first country in the world, issued RFID passport in 1998 followed by United States in 2006. The chips embedded with the card will store the same information that is printed within the passport and will also include a digital picture of the owner.

9.2 Transportation Payments

Many countries like France, South Korea, Malaysia etc. have been introduced RFID technology for easy and faster transportation payment service.

9.3 Product Tracking

Now RFID technology is also used for product tracking in supply chain system which dramatically simplified this process.

9.4 Automotive

Microwave RFID tags are used in long range access control for vehicles. Since the 1990s RFID tags have also been used in car keys. Without the correct RFID, the car will not start. Now Ford, Honda, and several other manufacturers use RFID-equipped ignition keys as anti-theft measures.

9.5 Animal Identification

Implantable RFID tags or transponders can be used for animal identification.

9.6 Inventory System

Introduction of RFID technology had brought a dramatical change in inventory system. Major benefits of using RFID include the reduction of labour costs, the simplification of business processes and the reduction of inventory inaccuracies.

9.7 Other Uses

RFID also used in human implants, hospitals and healthcare to track patients and high-value

assets, as well as ensure patient safety. Schools and Universities are used this technology in monitoring system. Another use of RFID is in driving license that bears the license holders personal information and stores data regarding traffic violations, tickets issued, and outstanding penalties.
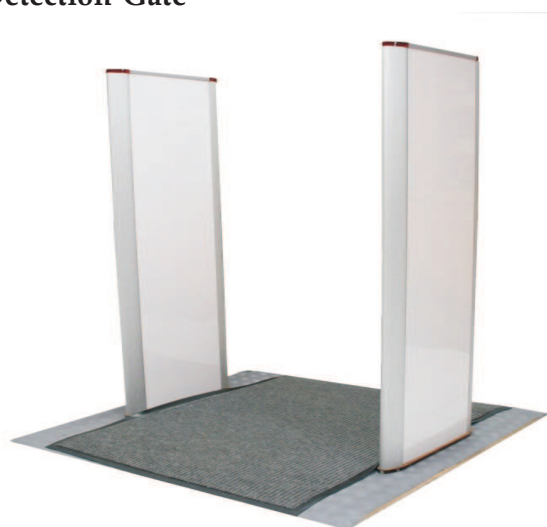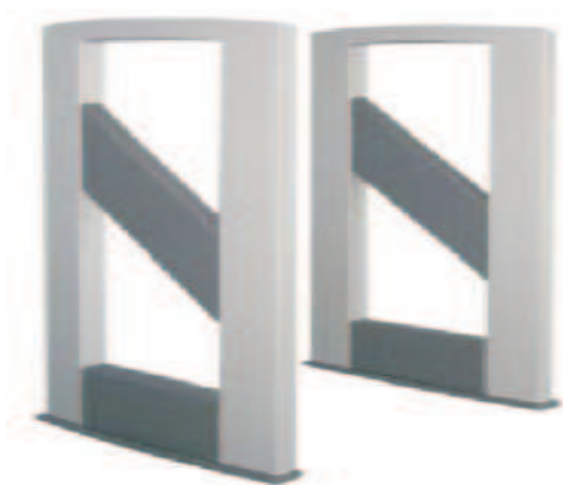
10. Rfid Technology for Libraries

RFID is the latest technology to be used in library theft detection system. Unlike EM (Electro-mechanical) and RF (Radio Frequency) Systems, which have been used in libraries for decades, RFID-based systems move beyond security to become tracking systems that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying and material handling[3].

11. Application of Rfid Technology for Library Functions

RFID Technology may use for the following library functions known as four phases of library RFID Management System.

11.1 Library Security System Only

11.1.1 Phase Action

1. Using RFID tag replace EM Security strip

11.1.2 Phase Target

1. Radio Frequency Detection

2. Replace the EM Anti-theft system to avoid the high volume EM field harm human body and without false alarm.

11.1.3 Equipment & Parts Needed

Anti-theft Detection Gate - Detect the RFID tag on book and check EAS (Electronic Article Surveillance) Status, system alarm when the EAS status is on.

1. Security processing station - Turn on or off the EAS setting of the chip.

2. RFID tags

Anti-theft Detection Gate

11.2 Support Library Circulation

11.2.1 Phase Action

Using RFID tags replace the barcode in circulation process. Reading book's accession number from RFID is faster than from barcode to borrow and return the book.

11.2.2 Phase Target

1. No line of sight needed.

2. Allows to check-out and check-in several items simultaneously.

3. Performing both identification and anti-theft in one single operation.

11.2.3 Equipment & Parts Needed

1. Counter Station.

2. New integrated library system functions-read from RFID and set the EAS status.